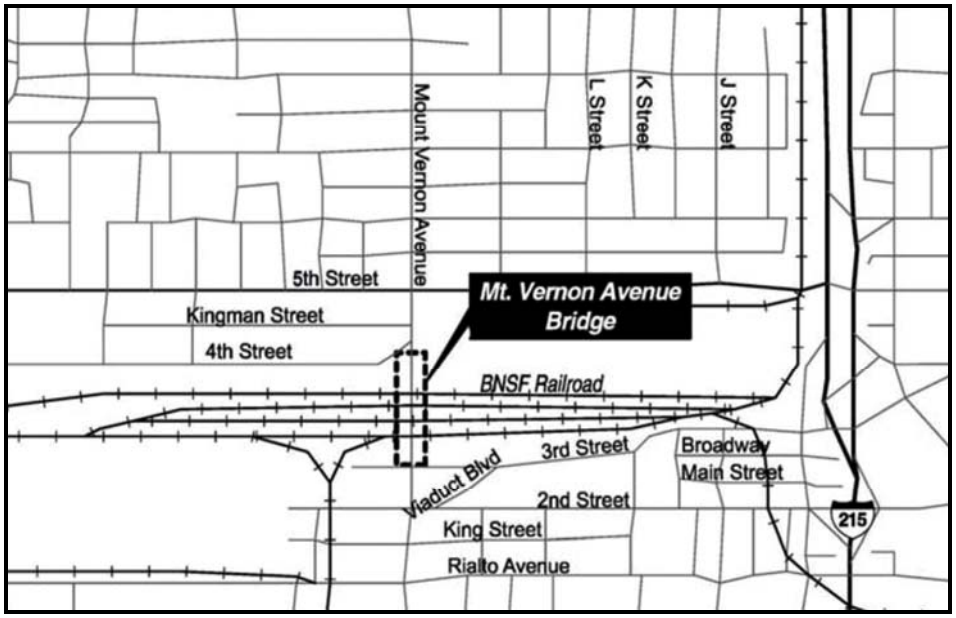
# Mount Vernon Avenue Bridge Project

SAN BERNARDINO COUNTY, CALIFORNIA
STATE BRIDGE NO. 54C0066
08-SBd-0-Local Assistance
BRLS-5033(042)
EA 965120

Environmental Assessment
(and Programmatic Section 4(f) Evaluation)




**Prepared by**
**the City of San Bernardino for the**
**State of California Department of Transportation**

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

**October 2010**

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## GENERAL INFORMATION ABOUT THIS DOCUMENT

**What's in this document:**

The City of San Bernardino (City), in cooperation with the California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in the City of San Bernardino, County of San Bernardino, California. The City is proposing to use funds from FHWA for this local roadway project. The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or compensation measures.

**What you should do:**

- Please read the document. Additional copies of it as well as of the technical studies we relied on in preparing it, are available for review at:
  - City of San Bernardino; Department of Engineering; 300 North D St.; San Bernardino, CA
  - California Department of Transportation, District 8; 464 West 4th St.; San Bernardino, CA
  - Paul Villaseñor Branch Library; 525 North Mount Vernon Ave.; San Bernardino, CA
- Attend the open forum public meeting on Tuesday, November 30, 2010 between 4pm and 7pm at the Paul Villaseñor Branch Library (525 N. Mount Vernon Ave., San Bernardino, CA).
- We'd like to hear what you think. If you have any comments regarding the proposed project, please send your written comments to the Department by the deadline.
  - Submit comments via postal mail to:

    California Department of Transportation
    District 8, Division of Environmental Planning
    Environmental Local Assistance
    464 W. 4th Street, 6th Floor, MS 1162
    San Bernardino, CA 92401-1400
    (Attention: Julie Lugaro, Associate Environmental Planner)
  - Be sure to submit comments by the deadline: Monday, December 13, 2010

**What happens next:**

After comments are received from the public and reviewing agencies, the Department, as assigned by the Federal Highway Administration, and in cooperation with the City of San Bernardino, will respond to comments, prepare the final environmental decision document and may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, the Department and City could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in large print or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the City of San Bernardino, Attn: Robert Eisenbeisz, Department Director/City Engineer, Department of Engineering, City of San Bernardino, 300 North "D" Street San Bernardino, CA 92418-0001, (909) 384-5111 Voice, or use the California Relay Service number, 1 (909) 383-6300.

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**08-SBd-0 (Local Assistance)**
BRLS-5033(042)

Replacement of the Mt. Vernon Avenue Bridge (State Bridge No. 54C-0066) located west of downtown San Bernardino between West 2nd and West 5th Street (State Route 66 [SR-66]) in the City of San Bernardino.

# ENVIRONMENTAL ASSESSMENT
# and Programmatic Section 4(f) Evaluation
# Mount Vernon Avenue Bridge Project

Submitted Pursuant to:
(Federal) 42 U.S.C. 4332(2)(C)
and 49 U.S.C. 303

THE STATE OF CALIFORNIA
Department of Transportation as assigned
and
CITY OF SAN BERNARDINO
DEPARTMENT OF ENGINEERING

10/28/10
Date of Approval

David Bricker
Deputy District Director
California Department of Transportation

10/27/10
Date of Approval

Robert Eisenbeisz
City Engineer
City of San Bernardino

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# Chapter 1. Proposed Project

## 1.1 Introduction

The City of San Bernardino (City), in cooperation with the California Department of Transportation (the Department), as assigned by the Federal Highway Administration (FHWA), proposes to replace the Mount Vernon Avenue Bridge (State Bridge No. 54C-0066) over the Burlington Northern Santa Fe (BNSF) railroad facilities in the City of San Bernardino, County of San Bernardino (County), State of California (see Figure 1-1, Regional Vicinity Map, and Figure 1-2, Project Location Map).

The Mount Vernon Avenue Bridge Project (project) is included in the Fiscal Year Federal Statewide Transportation Improvement Program (FSTIP) and is proposed for funding from the Highway Bridge Replacement and Rehabilitation (HBRR) Program. It is also included in the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) and the 2008 cost-constrained Regional Transportation Improvement Plan (RTIP) as project identification number SBD31905 and RTIP identification number SBD3 1905.

### 1.1.1 Existing Facility

The Mount Vernon Avenue Bridge (bridge) is located west of downtown San Bernardino, on Mount Vernon Avenue between West 2nd and West 5th Streets, approximately 0.3 kilometer (km) (0.2 mile) south of State Route (SR) 66 (Foothill Boulevard) and 1.1 km (0.7 mile) west of Interstate 215 (I-215). The bridge crosses the BNSF railroad mainlines, storage tracks, and intermodal yard, as well as the regional commuter rail tracks operated by the Southern California Regional Rail Authority (Metrolink) and the rail tracks used by Amtrak.

The existing Mount Vernon Avenue Bridge follows a generally north-south alignment along Mount Vernon Avenue and carries both vehicular and pedestrian traffic. The average daily traffic (ADT) measured at the bridge in 2002 was about 20,000 and 14,677 in 2009. The existing bridge is approximately 309.7 meters (m) (1,016 feet) long and 14.9 m (49 feet) wide with four 3.1-m (10-foot) traffic lanes (two in each direction) and no median or shoulders. Sidewalks on each side of the existing bridge are 1.1 m (3.5 feet) wide. Concrete barrier railings are located on each side of the bridge, though multiple areas have deteriorated or have been damaged and replaced with steel plates or plywood. Current vertical clearance over West 3rd Street is 4.0 m (13 feet), which is less than the current 4.6-m (15-foot) standard. Vertical clearance over the BNSF rail yard is 6.6 m

(21.8 feet), which does not meet the minimum clearance requirements of either the California Public Utilities Commission (CPUC) (minimum 6.9 m [22.5 feet] of vertical clearance) or the BNSF railroad (minimum 7.3 m [24 feet] of vertical clearance).

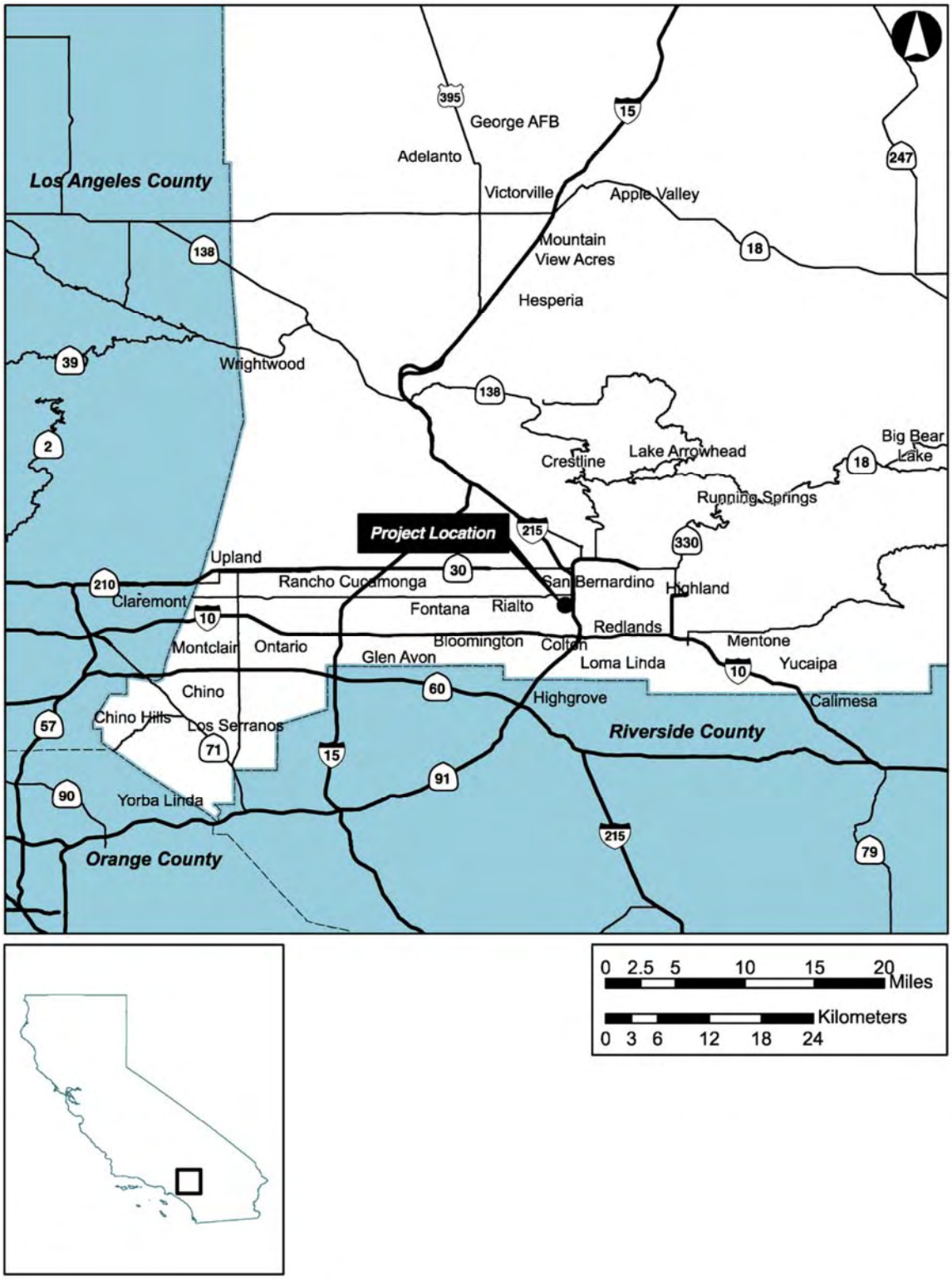
The existing horizontal clearance between the bridge bents and some of the railroad tracks is only 1.8 to 2.4 m (6 to 8 feet) with no crash walls. Standard minimum horizontal clearances are 6 m (20 feet) without crash walls and 3 m (10 feet) with crash walls. Because the bridge is slightly offset to the east from the centerline of Mount Vernon Avenue at about West 2nd Street, the current south approach is misaligned with the bridge.

### 1.1.2 Project History

Retrofit/rehabilitation or replacement of the Mount Vernon Avenue Bridge is necessary because the current facility exhibits structural and functional deficiencies per the Department's *National Bridge Inventory—Structure Inventory and Appraisal*, which addresses bridges both on and off the federal highway system in the State of California. The existing bridge, constructed in 1934, incorporated steel girders salvaged from an earlier 1907 structure. The project was originally initiated by the mandated Local Bridge Seismic Safety Report Program, which is a part of the statewide Seismic Safety Retrofit Program. This program was established by emergency legislation (SB36X) enacted during an extraordinary legislative session after the October 1989 Loma Prieta Earthquake. In 1996, the Department retained a consultant to perform a seismic analysis and retrofit study for the existing bridge. A Final Seismic Retrofit Strategy Report was consequently developed and approved on June 2, 1997. The report concluded that the bridge falls under Category 1, a category for bridges that may potentially collapse in a seismic event and potentially threaten public safety.

In addition to this seismic deficiency, the bridge was placed on the FHWA Federal Eligible Bridge List (EBL) because of its low Sufficiency Rating (SR). The bridge was found to be Structurally Deficient (SD) because of its poor deck condition. The bridge also meets the classification of being Functionally Obsolete (FO) with a low rating on the deck geometry (i.e., roadway width on the bridge) and because of the nonstandard deck geometry, misaligned south approach, and nonstandard vertical underclearance at West 3rd Street. The SR for the bridge (discussed in futher detail in Section 1.2.2.2) was 45.6 in 2002 and dropped to 2.0 in 2004 subsequent to bridge inspections.

A Bridge Study Report documenting the results of the special bridge study was issued in March 2004. The report concluded that it would be technically feasible to retrofit and




**SOURCE**: Geographic Information Systems Data (County of San Bernardino, 2010)

**Figure1-1**
**Regional Location Map**
**Mount Vernon Avenue Bridge Project**

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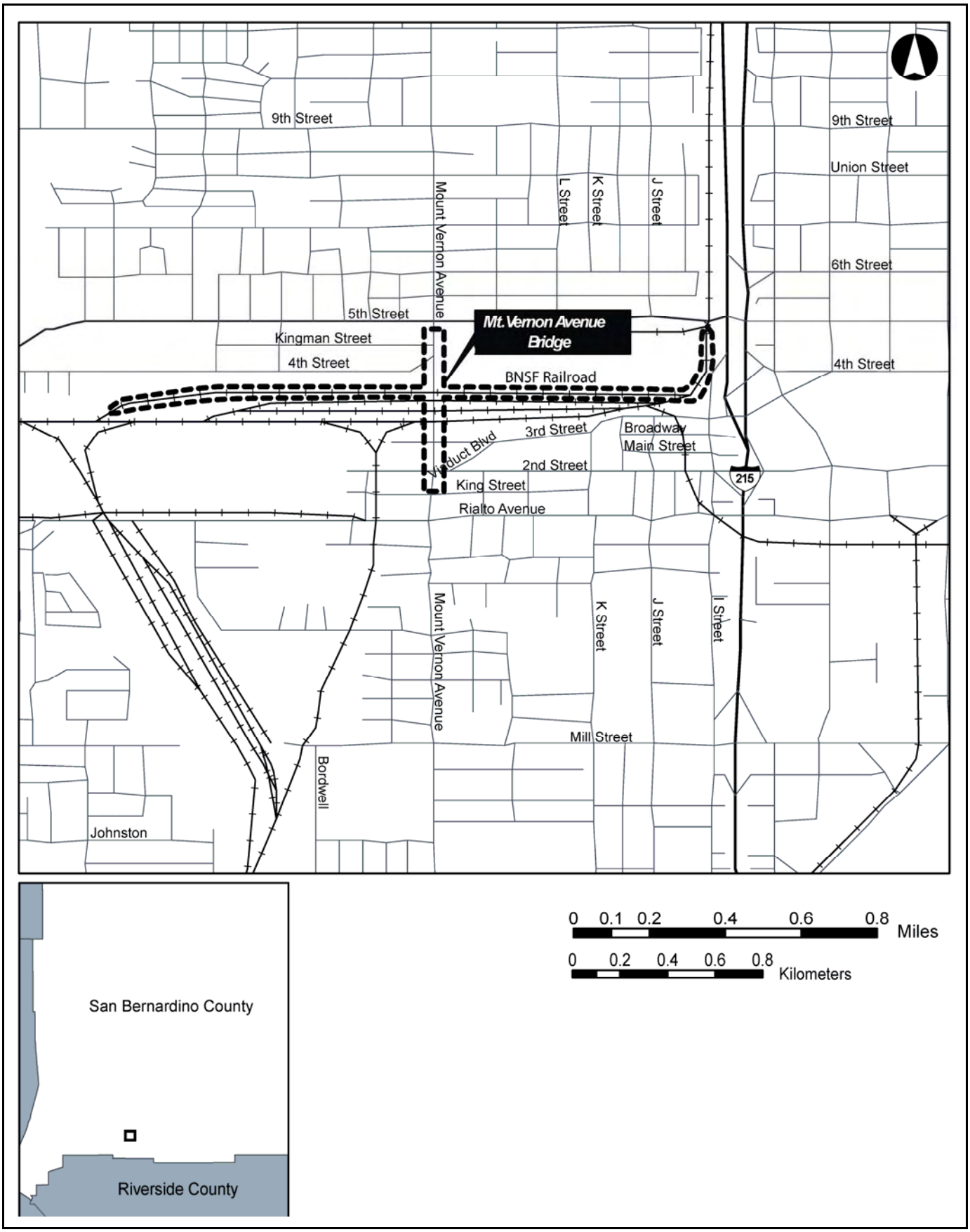


**SOURCE**: Geographic Information Systems Data (County of San Bernardino, 2010)

**Figure 1-2**
**Project Location Map**
**Mount Vernon Avenue Bridge Project**

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rehabilitate the bridge in a manner that would remove it from the EBL and improve its capability to withstand the maximum credible seismic event. The recommended improvements included bridge widening, full deck replacement, span replacement, girder and bent retrofit, bracing, lead paint removal, repainting, and locally lowering West 3rd Street below the bridge.

Although the 2004 Bridge Study Report found that a retrofit/rehabilitation alternative was technically feasible, the following important caveats were noted:

- Even with all possible planning to minimize harm to the historic resource, direct or indirect alterations to the historic characteristics that qualify the resource for listing in the NRHP would likely result in an adverse effect under Section 106 and a direct use under Section 4(f). These issues would be more fully examined in the Section 106 and Section 4(f) documentation.
- The retrofitted bridge would have a limited service life of only 15 to 20 years because (1) major portions of the steel girders that were salvaged from the 1907 bridge could have questionable rivet connections as a result of corrosion; and (2) the bridge has been carrying heavy daily truck traffic since it was constructed in 1934, causing the aged carbon steel to reach the maximum allowable truck load cycles associated with fatigue.
- Some of the timber piles supporting the bridge foundations could be decayed from aging.

Two other limitations of the retrofit/rehabilitation alternative were presented to the Project Development Team (PDT). First, even though the retrofit/rehabilitation alternative would meet the 6.9-m (22.5-foot) minimum vertical clearance requirement for the CPUC, it would not meet the 7.3-m (24-foot) minimum vertical clearance required by the BNSF railroad. Second, to meet horizontal clearance requirements, some of the crash walls under this alternative would have to be limited to a nonstandard 0.4-m (1.3-foot) thickness. Taking into consideration the results of the 2004 Bridge Study Report and the previously described limitations, the PDT agreed at its April 6, 2004, meeting that the retrofit/rehabilitation alternative was not viable and that a replacement bridge would be the preferred alternative to rehabilitating/retrofitting the Mount Vernon Avenue Bridge.

On April 29, 2004, Department Structures Maintenance and Investigations staff independently performed a biennial bridge inspection and found critical girder and connection failure as a result of fatigue at several locations in the southbound lanes of the bridge. Consequently, the southbound lanes were closed to vehicular traffic. After further

investigation by additional bridge specialists from Department headquarters, it was recommended that the entire bridge be closed. The City closed the bridge to all vehicular traffic on June 4, 2004. In order to reopen the bridge, temporary bridge shoring has been installed per a subsequent agreement between the City and BNSF to allow the installation of temporary bridge shoring. The agreement with BNSF specifies that removal of the shoring must occur before the end of 2 years. However, the end of the 2-year period has passed and BNSF has not requested removal of the shoring; therefore, the shoring is being examined and maintained to ensure that the original load carrying capacity is retained. Recent investigation has determined that Bent 6, Span 6 (as per built plans) would require additional temporary shoring. Should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

## 1.2 Project Purpose and Need

### 1.2.1 Project Purpose

The purpose of the proposed project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards. This would entail construction of a bridge with standard geometry to correct the current misalignment of the south approach, standard vertical clearance at West 3rd Street, and standard vertical and horizontal clearances at the BNSF yard. By implementing the project as expeditiously as possible under the circumstances, the City desires to restore a vitally important connector linking communities north and south of the BNSF railroad. The new bridge would be consistent with current rail and mass transit operations and facility needs.

### 1.2.2 Project Need

#### 1.2.2.1 SEISMICALLY DEFICIENT

The existing bridge was constructed in 1934 and incorporated steel girders salvaged from an earlier 1907 structure. As part of the Local Bridge Seismic Safety Retrofit Program, a seismic analysis and retrofit study were conducted in 1996. The Final Seismic Retrofit Strategy Report, issued in June 1997, determined that the bridge fell under Category 1, a category for bridges that could potentially collapse in a seismic event and threaten public safety.

#### 1.2.2.2 SUFFICIENCY RATING (SR)

The Department maintains the *National Bridge Inventory—Structure Inventory and Appraisal* for bridges both on and off the federal highway system in the state. The inventory includes an SR for each bridge. The SR is typically determined by three considerations: (1) structural adequacy and safety; (2) serviceability and functional obsolescence; and (3) essentiality for public use. A special reduction factor is considered to account for conditions related to detours, traffic safety features, and structure type. When a bridge has a deficient SR, it is placed on the federal EBL to receive high priority for retrofit/rehabilitation or replacement under the HBRR Program. A *deficient* bridge is defined as having an SR ≤ 80 and a status flag as SD. Bridges with an SR ≤ 80 and SD or FO status are eligible for rehabilitation, while bridges with SR ≤ 50 and SD or FO status are eligible candidates for replacement. In 2002, the SR for the Mount Vernon Avenue Bridge was 45.6 with flags for both SD and FO. The major bridge deficiencies in 2002 were identified as poor deck condition, nonstandard deck geometry, and nonstandard underclearance at West 3rd Street. With the results of the 2004 bridge inspections, the SR for the Mount Vernon Avenue Bridge has dropped to 2.0. The very low SR for the bridge is the result of the following factors: low superstructure capacity, poor substructure condition, serious deck condition, inadequate deck geometry, and substandard vertical clearance at West 3rd Street. Additionally, the capacity of the existing bridge railing does not meet current standards.

#### 1.2.2.3 STRUCTURALLY DEFICIENT (SD)

The bridge has a low superstructure capacity, poor substructure conditions and deck deficiencies. The deck has moderate and sever transverse cracks and spalls at various locations. The steel bents have structural damage and heavy corrosion on almost all steel element connections. The girders receive a score of 0.0 for operating and inventory ratings due to several sever fatigue cracks on the girder-to-cap beam connections. Inventory and operating capacity is calculated at 20.8 and 35.4 metric tons, respectively.

#### 1.2.2.4 FUNCTIONALLY OBSOLETE (FO)

The existing bridge is considered to be FO because of the nonstandard deck geometry, misaligned south approach, and nonstandard vertical clearance at West 3rd Street.

#### 1.2.2.5 OTHER DEFICIENCIES

In addition to the previously described deficiencies, other serious conditions exist such as substandard vertical clearance over the railroad and substandard vertical clearance for 3rd Street. Additionally, the bridge was last painted in 1954. The paint condition index (PCI) dropped from 74.5 in 2000 to 67.6 in 2002. It was expected to fall even farther to less

than 65.0 in 2006. Bridges on the EBL with a PCI of 65.0 or less qualify as a stand-alone painting project under HBRR guidelines. Additionally, the existing bridge has nonstandard vertical and horizontal clearances at the BNSF railroad yard.

#### 1.2.2.6 OTHER CONSIDERATIONS

Capacity enhancement for the bridge was not determined to be a Project Need based on the following Regional Population and Traffic numbers:

- Year 2000 Regional Population - 265,514 persons
- Year 2035 Regional Population Forecast - 385,772 persons
- 2009 Existing Peak Hour Volume - 1247 vehicles
- 2035 Forecast Peak Hour Volume 1386 vehicles
- 2009 Daily Traffic Volume is 14677 vehicles
- 2035 Forecast Daily Traffic Volume is 16107 vehicles

While there is an increase in the regional population, volumes on Mount Vernon Avenue Bridge will not substantially increase. As demonstrated in Table 2-6 in Chapter 2, Mount Vernon Avenue Bridge and adjacent intersections currently operate at Level of Service (LOS) B or better during peak hour vehicular travel periods; and, it is likely that this Level of Service will be maintained through 2035 due to the project area's designation as a limited growth Strategic Area by the City of San Bernardino General Plan.

Changes in land use patterns were also considered but not determined to result in a Project Need because the City General Plan Strategic Area designation specifies that changes in the land use pattern are neither likely nor desired. Land use is further discussed in Section 2.1.1.1. Additionally, a map of existing and projected land use is provided as Figures 2-1a and 2-1b.

Additional modal relationships and system linkages were also considered but not determined to result in a Project Need at this time since the bridge continues to remain open due to temporary shoring placed to support the bridge. Mount Vernon Avenue is considered a Major Arterial per the City General Plan. Thus, it is a connecting link between economic centers both within the City and the region as a whole. Mount Vernon Avenue Bridge provides and additional access route to rail and mass transit (Metrolink) facilities in the immediate area which also interface with port and airport facilities. Since Mount Vernon Avenue Bridge is currently open to through traffic, there is no Project Need to enhance model relationships and system linkages.

#### 1.2.2.7 PROJECT COSTS

For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

For the Locally Preferred/Replacement Alternative (Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

The cost of Alternative 3 exceeds the cost for Alternative 2, However, when considering which alternative is the more reasonable expenditure of public funds, it is necessary to consider that Alternative 2 would result in additional costs 15 to 20 years after it is constructed because the limited service life of retrofit/rehabilitation efforts. Alternative 3 would have the lowest overall cost of the two alternatives.

## 1.3 Project Description

This section describes the proposed action and the design alternatives that were developed to meet the identified need through accomplishing the defined purpose(s), while avoiding or minimizing environmental impacts. The alternatives are Alternative 1, No Build Alternative; Alternative 2, Retrofit/Rehabilitation Alternative; and Alternative 3, Locally Preferred/Replacement Alternative.

The project is located in San Bernardino County on Mount Vernon Avenue Bridge (State Bridge No. 54C-0066) over the BNSF railroad facilities in the City of San Bernardino. The project covers a distance of approximately 0.5 miles. Within the limits of the proposed project, The existing Mount Vernon Avenue Bridge follows a generally north-south alignment along Mount Vernon Avenue and carries both vehicular and pedestrian traffic. The bridge is approximately 309.7 m (1,016 feet) long and 14.9 m (49 feet) wide with four 3.1 m (10 feet) traffic lanes (two in each direction) and no median or shoulders. The purpose of the proposed project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards.

This widening would require that the Mount Vernon Avenue service road between West 2nd and West 3rd Streets be closed at its southern terminus at West 2nd Street; however,

the existing sidewalk would remain, with additional upgrades to comply with ADA standards, as needed. Assuming future/continued residential occupancy of properties along the service road (described in further detail in Chapter 2), a parallel alleyway behind four residential parcels in this area would be widened to provide a replacement vehicular access road for the neighboring residents and railroad facilities.

The alleyway would be upgraded to "Access Roadway" standards, providing a travelled way of 26 feet (curb-to-curb) consisting of two un-striped 13-foot wide lanes (beyond 10-foot standard lanes). The road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access and residents who live adjacent to the road would be primary users of the road. An additional two-foot easement beyond both westerly and easterly curbs will provide room for placement of future utilities, and maintenance of the roadway itself; however, this area does not provide room for new parking spaces for vehicles nor new sidewalks. Although the road will not include formal sidewalks, pedestrian use of this road would not be prohibited.

## 1.4 Project Alternatives

### 1.4.1 Common Design Features of the Build Alternatives

Both Build Alternatives would reconstruct the intersection at the north and south ends of the bridge. The bridge alignment would shift to the west and the service road located along the east side of the homes at the southwest end of the bridge would be closed. Subsequently, the alleyway located behind the homes at the southwest end of the bridge would be improved under both Build Alternatives.

### 1.4.2 Unique Features of the Build Alternatives

#### 1.4.2.1 Retrofit/Rehabilitation Alternative (Alternative 2)

The Retrofit/Rehabilitation Alternative would seismically retrofit, rehabilitate, and widen the existing bridge to improve its structural safety and functionality. As part of this alternative, new footings would be excavated and new piles drilled. Widening and retrofitting the existing structure would involve improvements to the substructure to meet seismic standards (refer to Figures 1-3a through 1-3i, Build Alternative 2, Retrofit/Rehabilitation Alternative). Anticipated additional work would include complete deck replacement, girder strengthening, removal of lead paint, repainting, installation of new railings and roadway lighting, replacement or retrofit/rehabilitation of expansion joints, and the addition of crash walls around the bridge piers. The existing roadway configuration and sidewalks would be improved to provide a 21.9-m (72-foot)-wide

bridge with two 3.7-m (12-foot) lanes in each direction, a 1.2- m (4-foot) median, 1.2-m (4-foot) shoulders, and 1.5-m (5-foot) sidewalks. The sidewalks on the bridge would not meet American Disabilities Act (ADA) slope requirements following the retrofit/rehabilitation. The modifications associated with this alternative would change the overall visual appearance of the bridge as a result of the materials that would be added to the bridge to bring it into compliance with current seismic standards. These modifications would likely result in an adverse impact on those features that make the bridge eligible for listing on the National Register of Historic Places (NRHP).

Since this alternative would not address the nonstandard vertical and horizontal clearances associated with the bridge, BNSF would likely oppose this alternative. In addition, this alternative would not replace all of the existing girders that have been determined to have neared their service life. The service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

The proposed improvements would also reconstruct the intersection at the north and south ends of the bridge. The bridge alignment would shift to the west and the service road located along the east side of the homes at the southwest end of the bridge located at the southwest end of the bridge would be closed similar to Alternative 3. Subsequently, the alleyway located behind the homes at the southwest end of the bridge would be widened similar to Alternative 3.

The project schedule would consist of the following milestones:

| Milestones | Date |
|---|---|
| Environmental Document Approved | late 2010 |
| Start of Construction | mid 2012 |
| End of Construction | mid 2014 |

The project is funded through the Federal HBRR Program, seismic retrofit account, and Local City funds.

- For Alternative 2, the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

#### 1.4.2.2 Locally Preferred/Replacement Alternative (Alternative 3)

The Locally Preferred/Replacement Alternative would involve removal of the existing bridge structure, construction of a new replacement bridge structure, and improvements to bridge approaches and roadways in the project vicinity (refer to Figures 1-4a through

1-4g, Build Alternative 3, Locally Preferred/Replacement Alternative). The new replacement bridge would be 317.1 m (1,040 feet) long and 24.4 m (80 feet) wide with four 3.7-m (12-foot) lanes (two in each direction), a 1.2-m (4-foot)-wide median, and 2.4-m (8-foot)-wide shoulders. Sidewalks on each side of the new bridge would be 1.5 m (5 feet) wide and would meet ADA requirements for sidewalk width and slopes. Concrete barrier railings (1.1 m [3.5 feet) high) topped with fencing (1.9 m [6.1 feet] high) would be provided on each side of the new bridge.

*Design Speed.* The Build Alternative would be designed for speeds of 56.3 kilometers per hour (35 miles per hour) and up to 64.4 kilometers per hour (40 miles per hour) due to vertical clearance.

*Vertical Clearance/Horizontal Alignment/Street Geometrics.* The profile of the new replacement bridge would be raised to at least 7.3 m (24 feet) with a maximum clearance of approximately 11.0 m (36 feet), thereby meeting or exceeding the minimum vertical clearances required by CPUC and the BNSF railroad. This alternative would also provide for the minimum 4.6-m (15-foot) clearance over West 3rd Street. Southbound left-turn pockets are proposed at 2nd Street. At the Mount Vernon Avenue/2nd Street intersection, the free right turn from westbound 2nd Street to the northbound Mount Vernon Avenue would be replaced by a right-turn pocket.

*Horizontal Clearance:* Where required and/or feasible, the bents for the new bridge would include crash walls that would meet or exceed the minimum horizontal clearance requirements. The crash walls would be solid concrete without voids or openings; however, adequate clearances (approximately 0.15 to 0.23 m [0.5 to 0.75 foot]) would be left between the bent columns and the crash walls in order to allow the bridge to move freely under seismic loads without the columns coming into contact with the crash walls. The crash walls would extend about 0.15 m (0.5 foot) beyond the face of columns.

*Bridge Alignment/Street Geometrics:* To correct the misalignment with the south approach roadway, the bridge would be widened on the west side closer to some of the existing residential land uses within the project vicinity. This widening would require the service road at the southwest end of the bridge between West 2nd and West 3rd Streets to be closed.

*Service Road and Westerly Alleyway:* The bridge widening would require that the Mount Vernon Avenue service road between West 2nd and West 3rd Streets be closed at its southern terminus at West 2nd Street; however, the existing sidewalk would remain, with additional upgrades to comply with ADA standards, as needed. Assuming

| DIST. | COUNTY | ROUTE | POST MILES TOTAL PROJECT |
|---|---|---|---|
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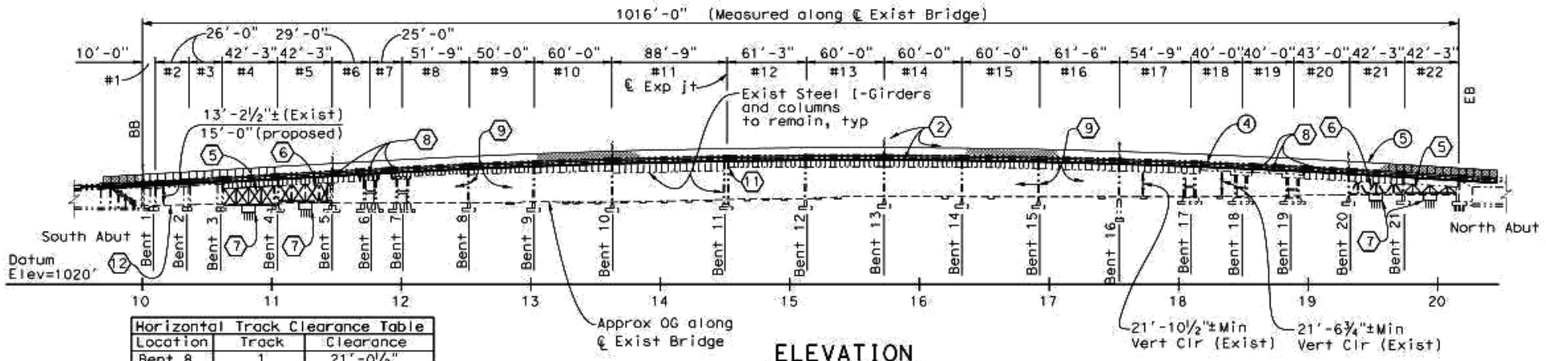
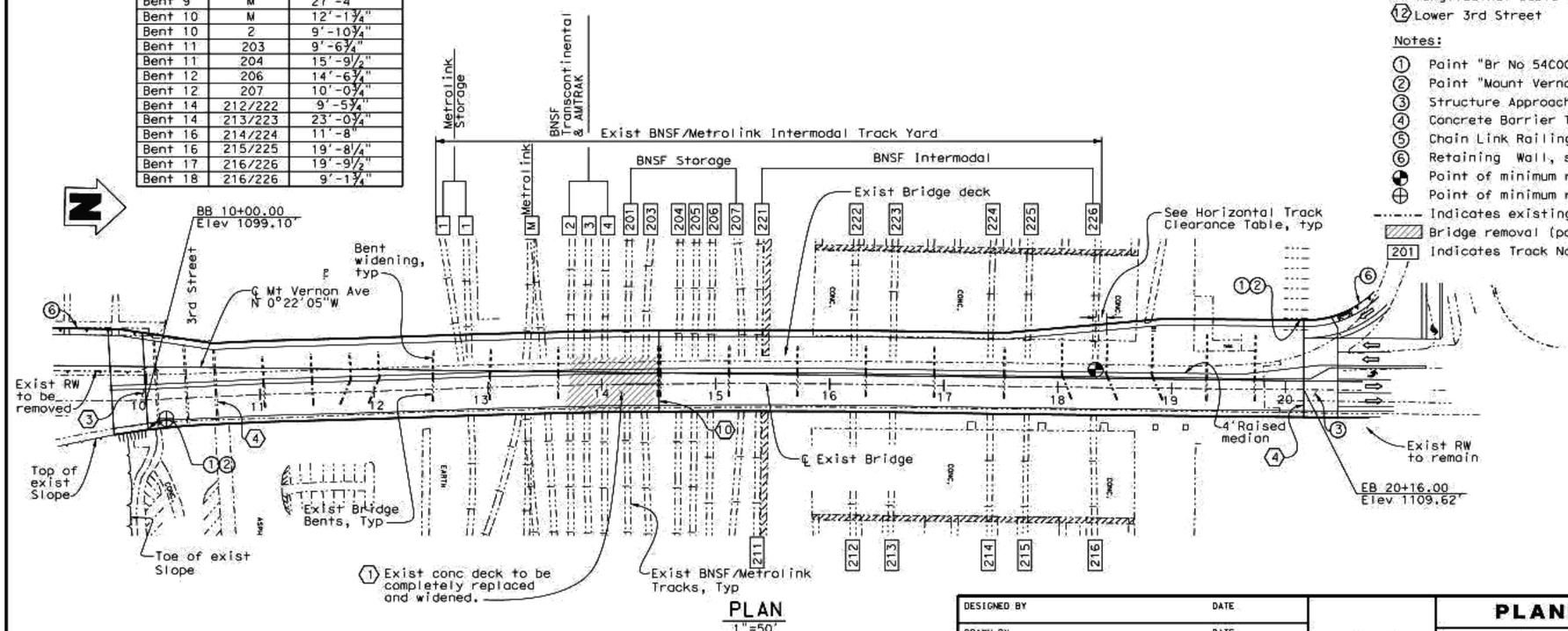



ELEVATION
1"=50'

| Horizontal Track Clearance Table | | |
|---|---|---|
| Location | Track | Clearance |
| Bent 8 | 1 | 21'-0½" |
| Bent 9 | 1 | 16'-0¼" |
| Bent 9 | M | 27'-4" |
| Bent 10 | M | 12'-1¾" |
| Bent 10 | 2 | 9'-10¾" |
| Bent 11 | 203 | 9'-6¾" |
| Bent 11 | 204 | 15'-9½" |
| Bent 12 | 206 | 14'-6¾" |
| Bent 12 | 207 | 10'-0¾" |
| Bent 14 | 212/222 | 9'-5¾" |
| Bent 14 | 213/223 | 23'-0¾" |
| Bent 16 | 214/224 | 11'-8" |
| Bent 16 | 215/225 | 19'-8¼" |
| Bent 17 | 216/226 | 19'-9½" |
| Bent 18 | 216/226 | 9'-1¾" |




PLAN
1"=50'

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

RETROFIT/REHABILITATION LEGEND:

1. Remove and replace existing concrete deck
2. Girder retrofit - install stud connectors and weld existing top and bottom cover plates
3. Abutment retrofit - seismic concrete slab
4. Concrete catcher and seat extension
5. Add longitudinal steel bracings
6. Remove and replace existing longitudinal bracing
7. Add 24" CIDH concrete piles and new footing
8. Girder HS continuity rods
9. Steel column and link beam retrofit, all bents (see Sheets 5 & 6)
10. Remove and replace existing finger joint with modular joint seal assembly
11. Add transverse steel shear keys and longitudinal cable restrainers
12. Lower 3rd Street

Notes:

1. Paint "Br No 54C0066"
2. Paint "Mount Vernon Ave OH"
3. Structure Approach Type N(30S)
4. Concrete Barrier Type 26 (Mod)
5. Chain Link Railing Type 7
6. Retaining Wall, see "Road Plans"

Point of minimum railroad vertical clearance
Point of minimum roadway vertical clearance
Indicates existing
Bridge removal (portion)
201 Indicates Track No. 201

| DESIGNED BY | DATE | J. Lu PROJECT ENGINEER | PLANNING STUDY | |
|---|---|---|---|---|
| DRAWN BY | DATE | | MT VERNON AVE OH | |
| CHECKED BY | DATE | | BRIDGE NO. 54C0066 | CU |
| APPROVED | DATE | | SCALE: As Shown | EA 08-965120 |

TIME PLOTTED => $TIME
DATE PLOTTED => $DATE
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**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3a**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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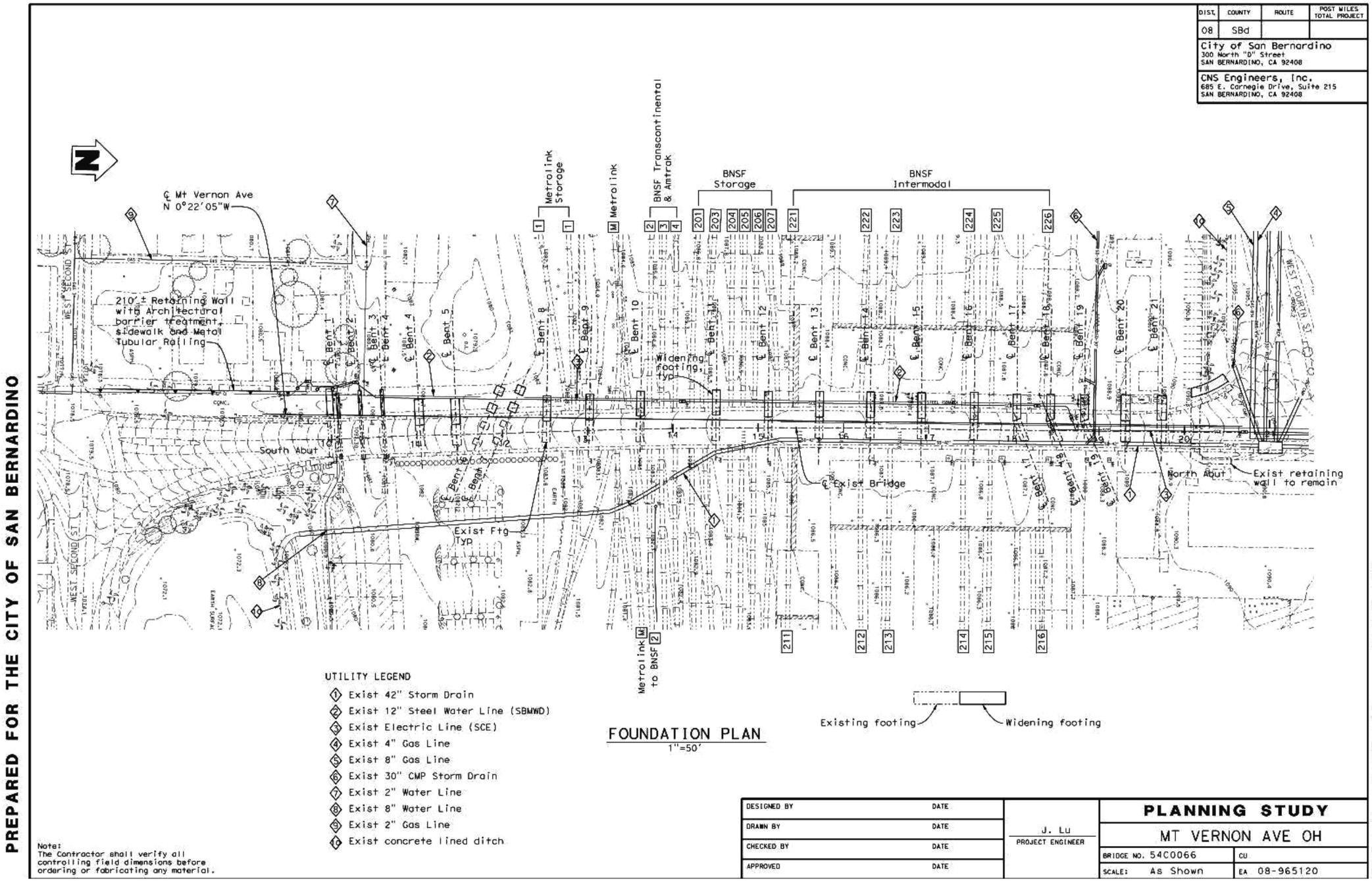


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3b**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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| DIST. | COUNTY | ROUTE | POST MILES TOTAL PROJECT |
|---|---|---|---|
| 08 | SBd | | |

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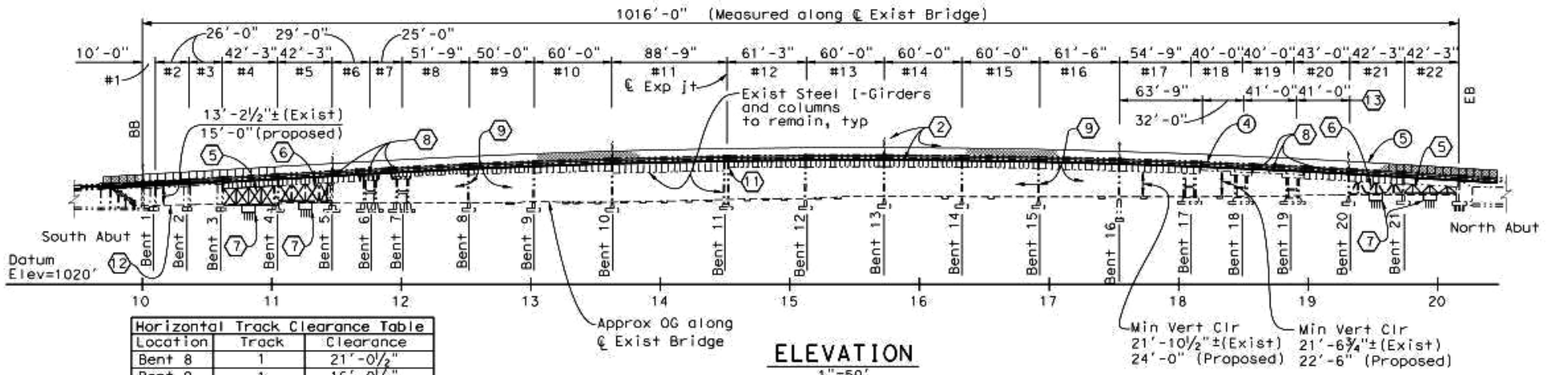
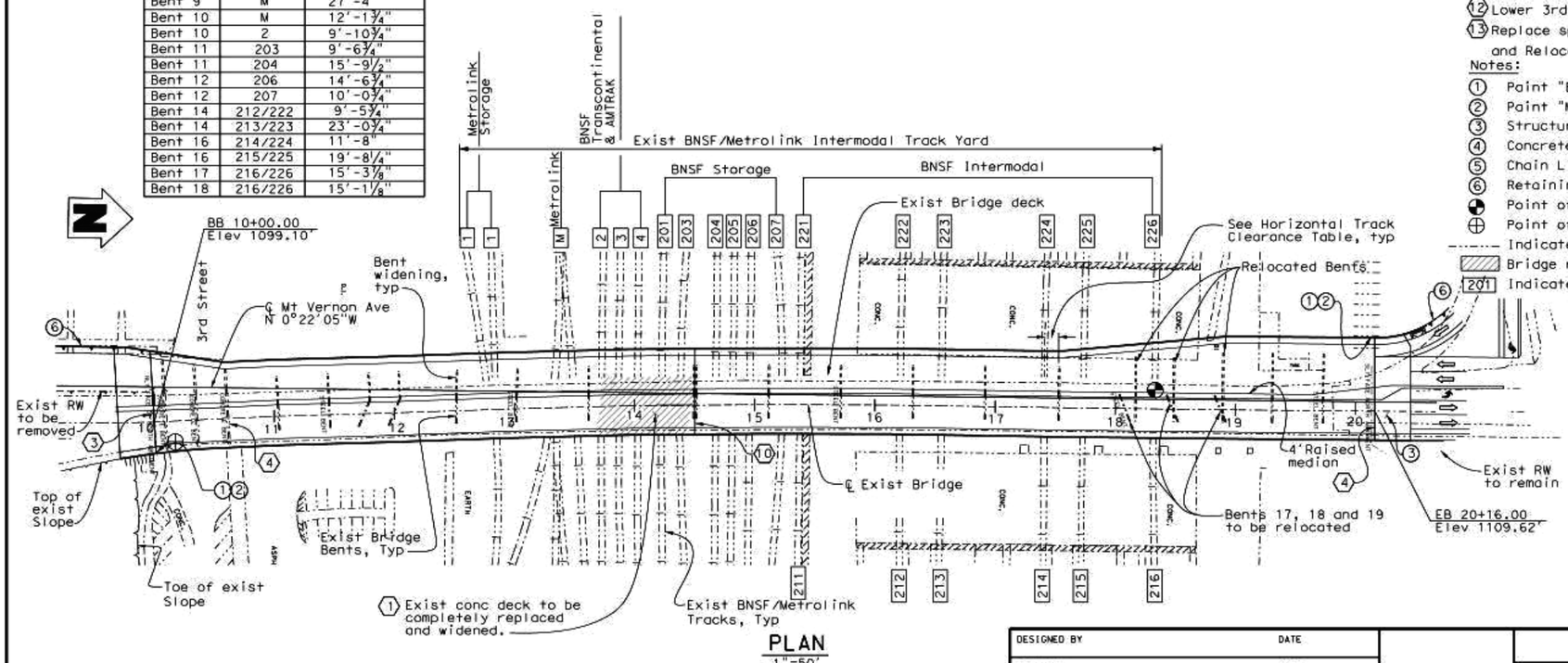



ELEVATION
1"=50'

| Horizontal Track Clearance Table | | |
|---|---|---|
| Location | Track | Clearance |
| Bent 8 | 1 | 21'-0½" |
| Bent 9 | 1 | 16'-0¼" |
| Bent 9 | M | 27'-4" |
| Bent 10 | M | 12'-1¾" |
| Bent 10 | 2 | 9'-10¾" |
| Bent 11 | 203 | 9'-6¾" |
| Bent 11 | 204 | 15'-9½" |
| Bent 12 | 206 | 14'-6¾" |
| Bent 12 | 207 | 10'-0¾" |
| Bent 14 | 212/222 | 9'-5¾" |
| Bent 14 | 213/223 | 23'-0¾" |
| Bent 16 | 214/224 | 11'-8" |
| Bent 16 | 215/225 | 19'-8¼" |
| Bent 17 | 216/226 | 15'-3⅞" |
| Bent 18 | 216/226 | 15'-1⅛" |




PLAN
1"=50'

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

RETROFIT/REHABILITATION LEGEND:

1. Remove and replace existing concrete deck
2. Girder retrofit - install stud connectors and weld existing top and bottom cover plates
3. Abutment retrofit - seismic concrete slab
4. Concrete catcher and seat extension
5. Add longitudinal steel bracings
6. Remove and replace existing longitudinal bracing
7. Add 24" CIDH concrete piles and new footing
8. Girder HS continuity rods
9. Steel column and link beam retrofit, all bents (see Sheets 5 & 6)
10. Remove and replace existing finger joint with modular joint seal assembly
11. Add transverse steel shear keys and longitudinal cable restrainers
12. Lower 3rd Street
13. Replace spans #17, #18, #19, #20 and Relocate Bents #17, #18 and #19.

Notes:

1. Paint "Br No 54C0066"
2. Paint "Mount Vernon Ave OH"
3. Structure Approach Type N(30S)
4. Concrete Barrier Type 26 (Mod)
5. Chain Link Railing Type 7
6. Retaining Wall, see "Road Plans"

Point of minimum railroad vertical clearance
Point of minimum roadway vertical clearance
Indicates existing
Bridge removal (portion)
201 Indicates Track No. 201

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**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3c**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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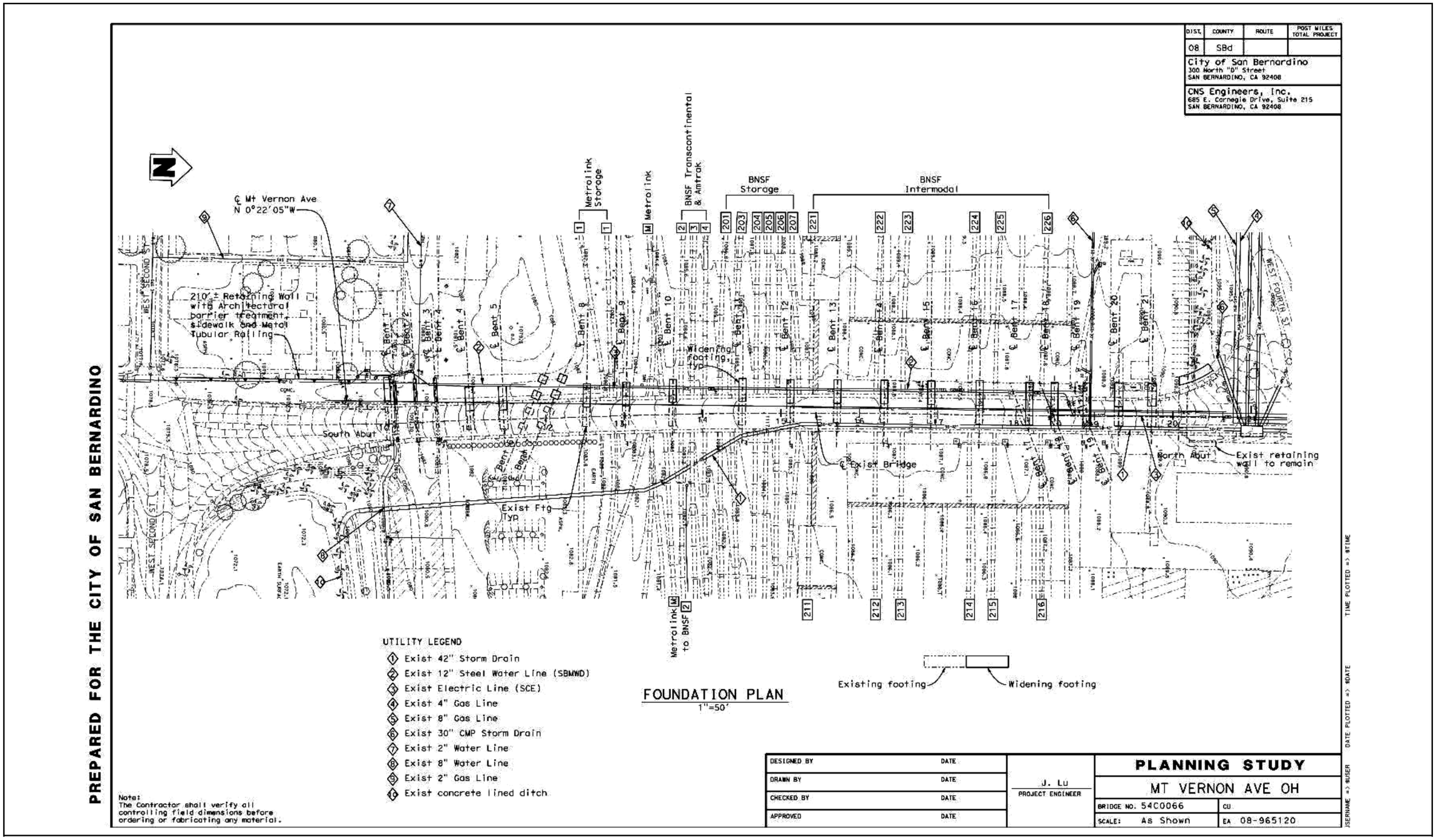


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3d**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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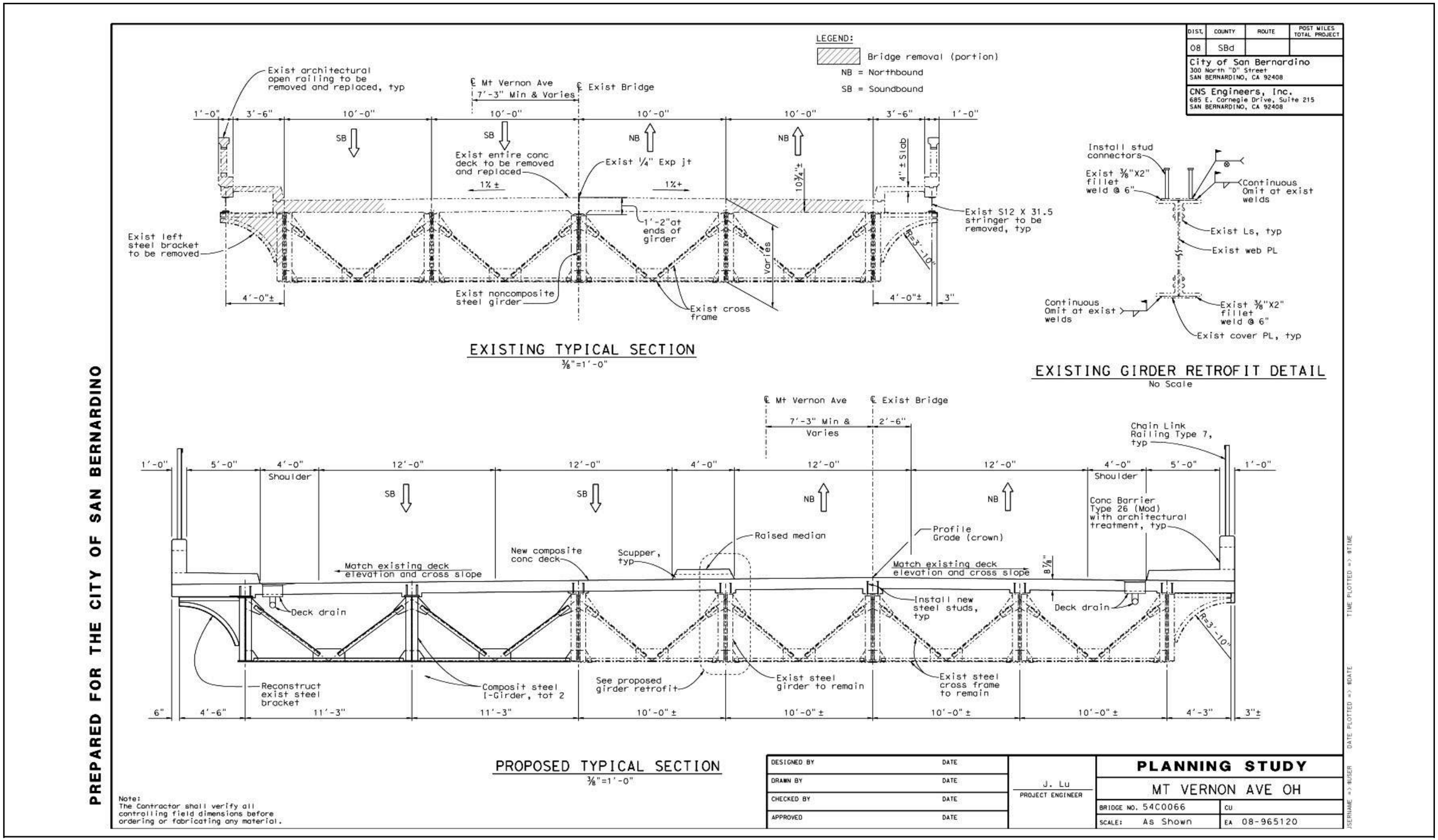


**SOURCE:** Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3e**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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| DIST. | COUNTY | ROUTE | POST MILES TOTAL PROJECT |
|---|---|---|---|
| 08 | SBd | | |

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300 North "D" Street
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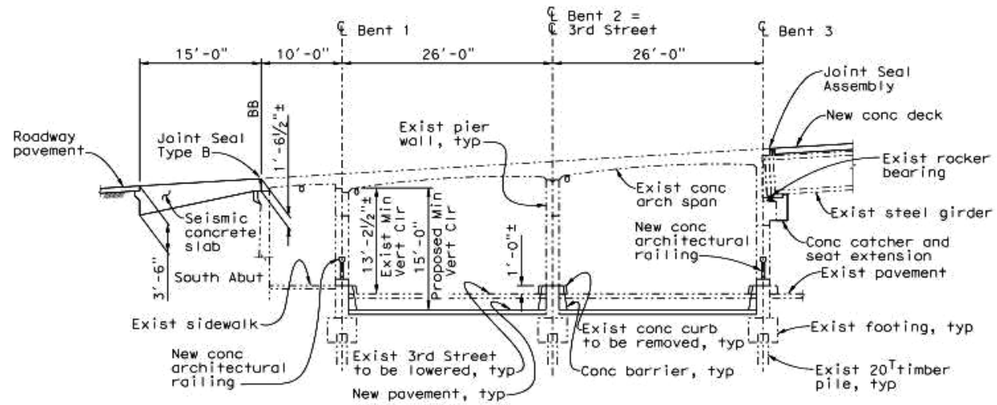
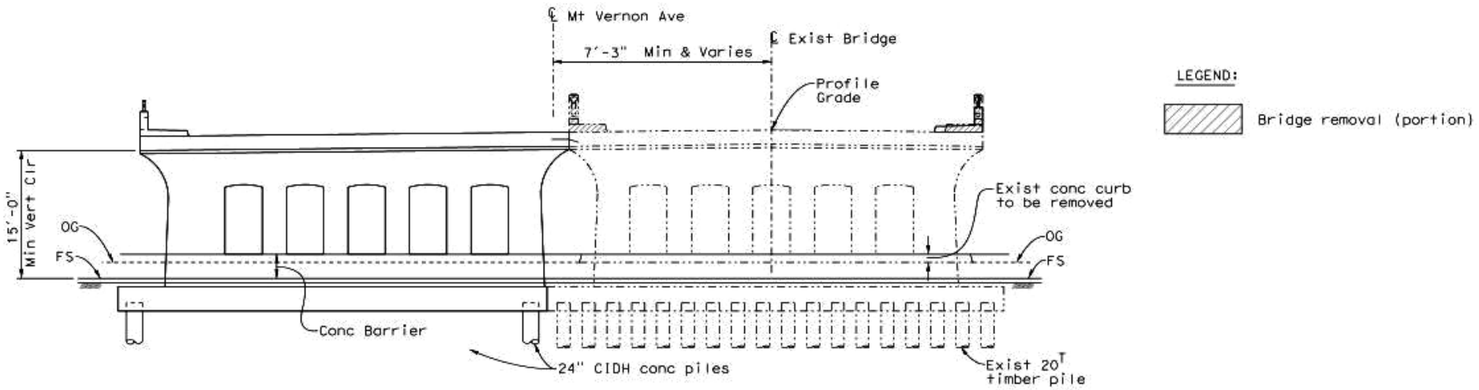



LONGITUDINAL SECTION
⅛"=1'-0"




ELEVATION - EXISTING BENT 2
⅛"=1'-0"

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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Source: Preliminary Design Plans (LAN Engineering, 2009).

**Figure 1-3f**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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|---|---|---|---|
| 08 | SBd | | |

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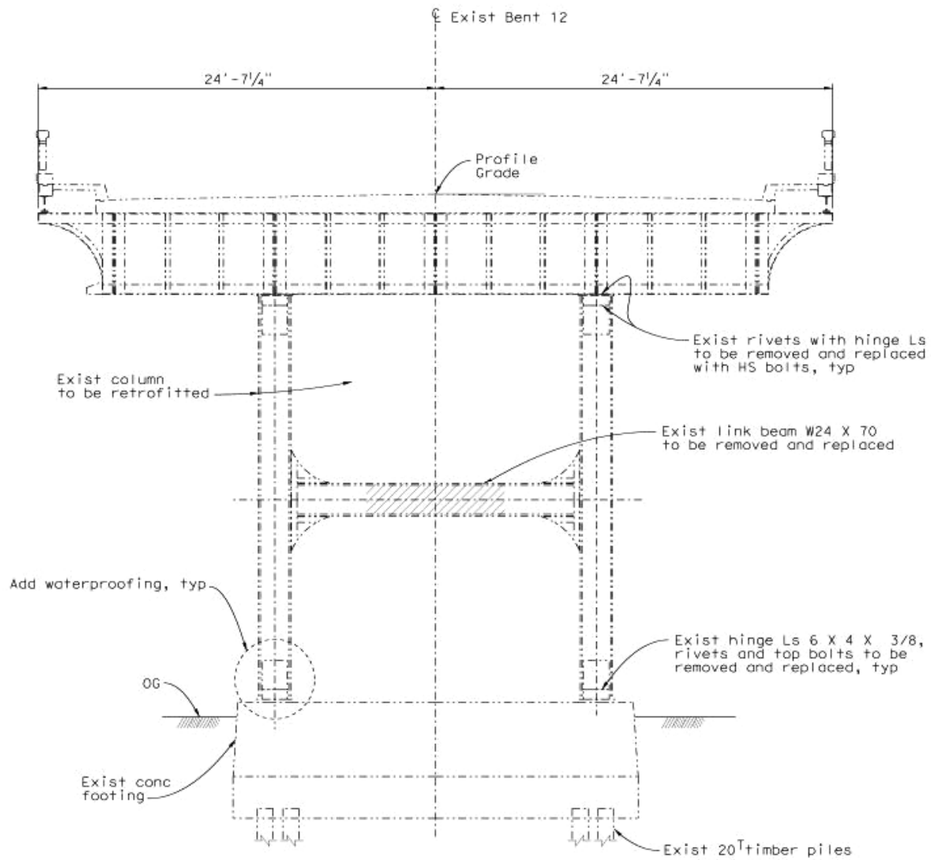


EXISTING TYPICAL BENT ELEVATION & PROPOSED RETROFIT
¼"=1'-0"

LEGEND:

Bridge removal (portion)

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

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**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-3g**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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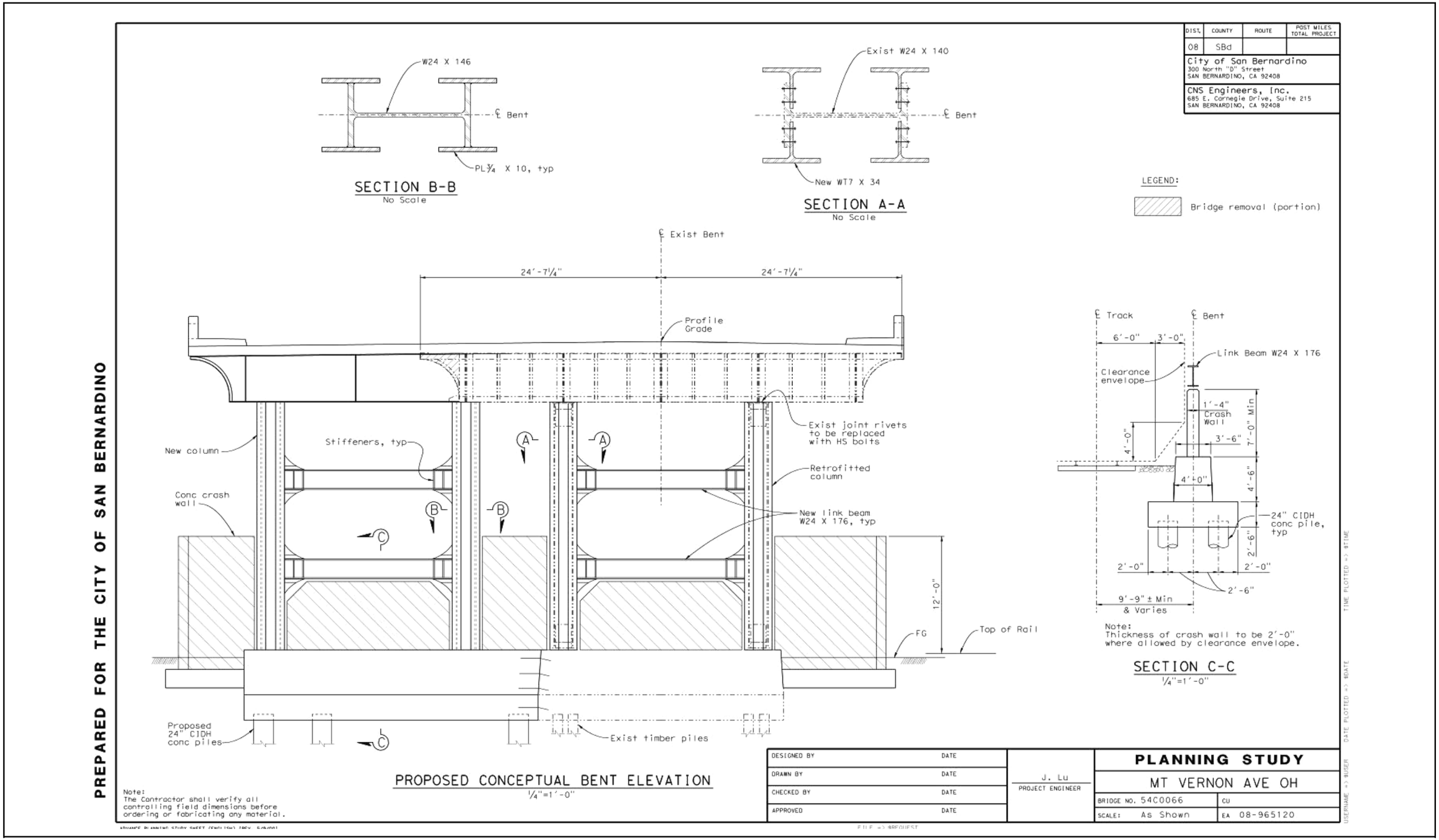


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-3h**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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|---|---|---|---|
| 08 | SBd | | |

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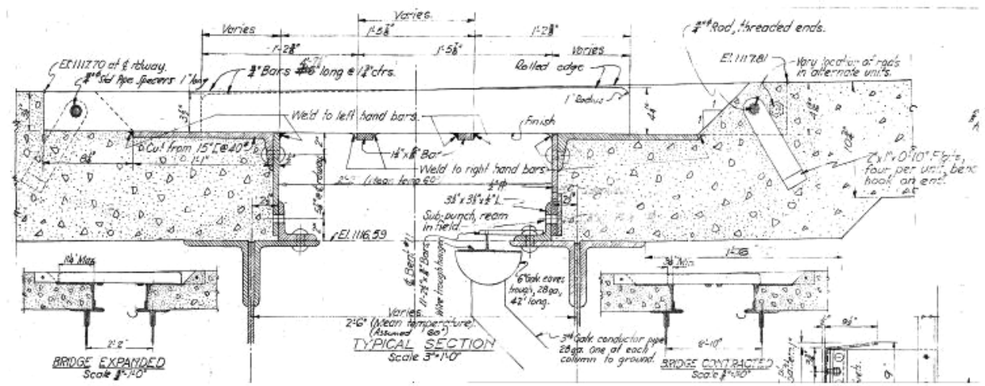
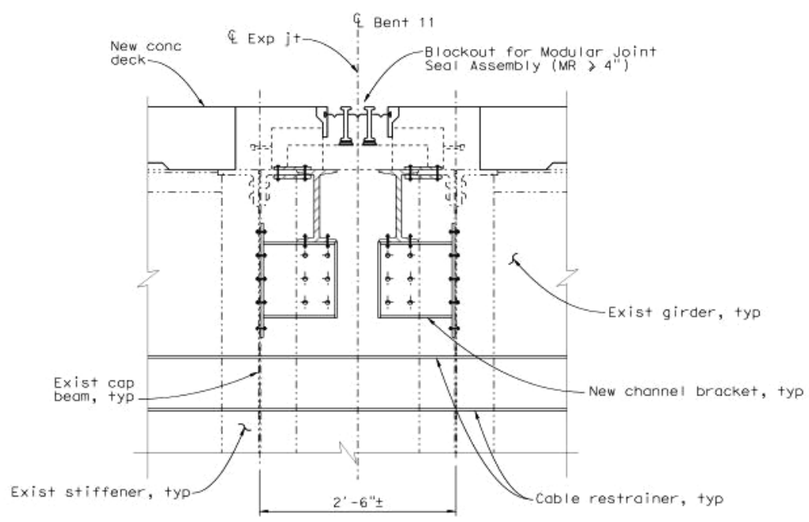
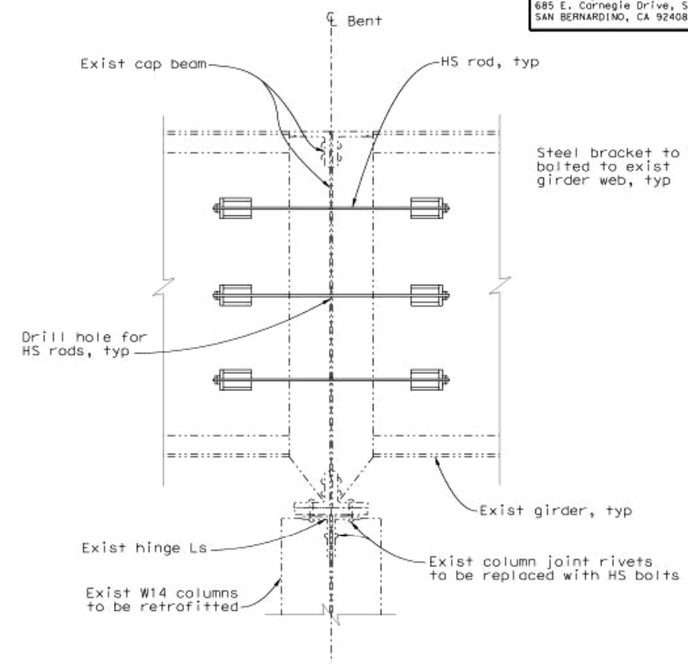



EXISTING FINGER JOINT
No Scale




Note:
Transverse shear key assemblies not shown

CONCEPTUAL FINGER JOINT RETROFIT
No Scale




GIRDER CONTINUITY AND CAP JOINT RETROFIT
No Scale

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

| | | | |
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**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-3i**
**Retrofit/Rehabilitation Alternative (Alternative 2)**
**Mount Vernon Avenue Bridge Project**

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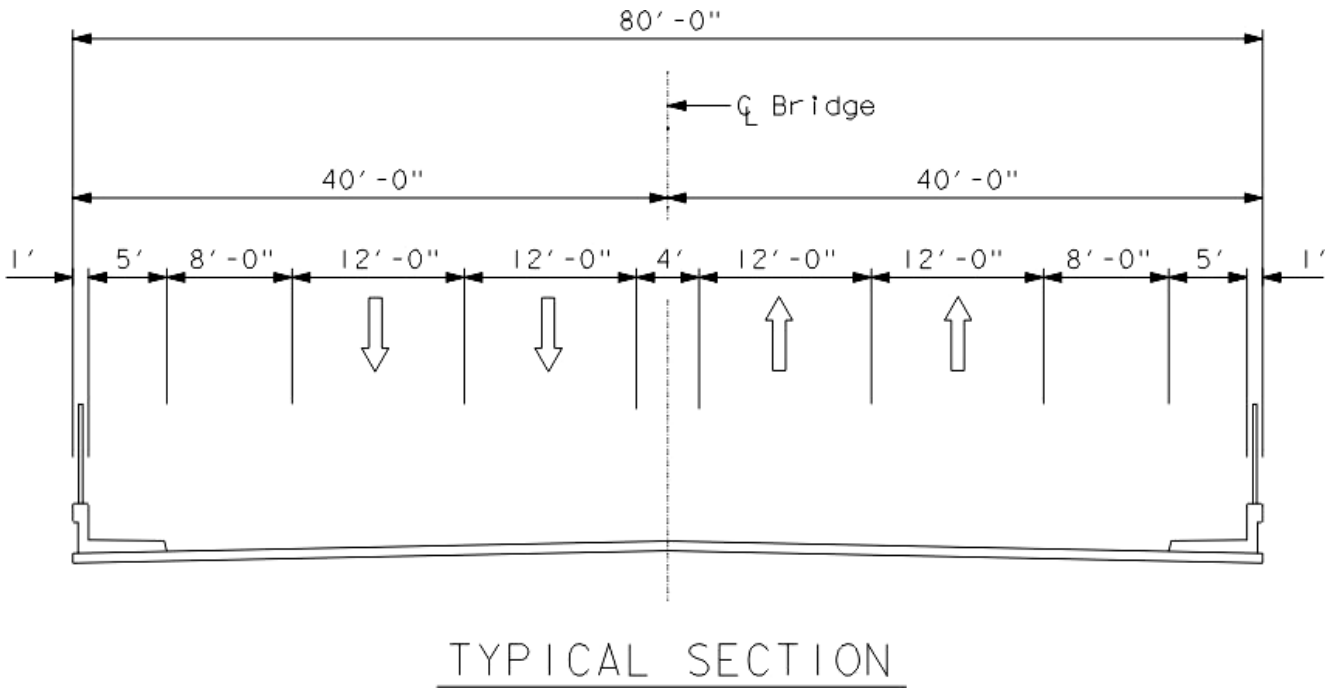


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4a**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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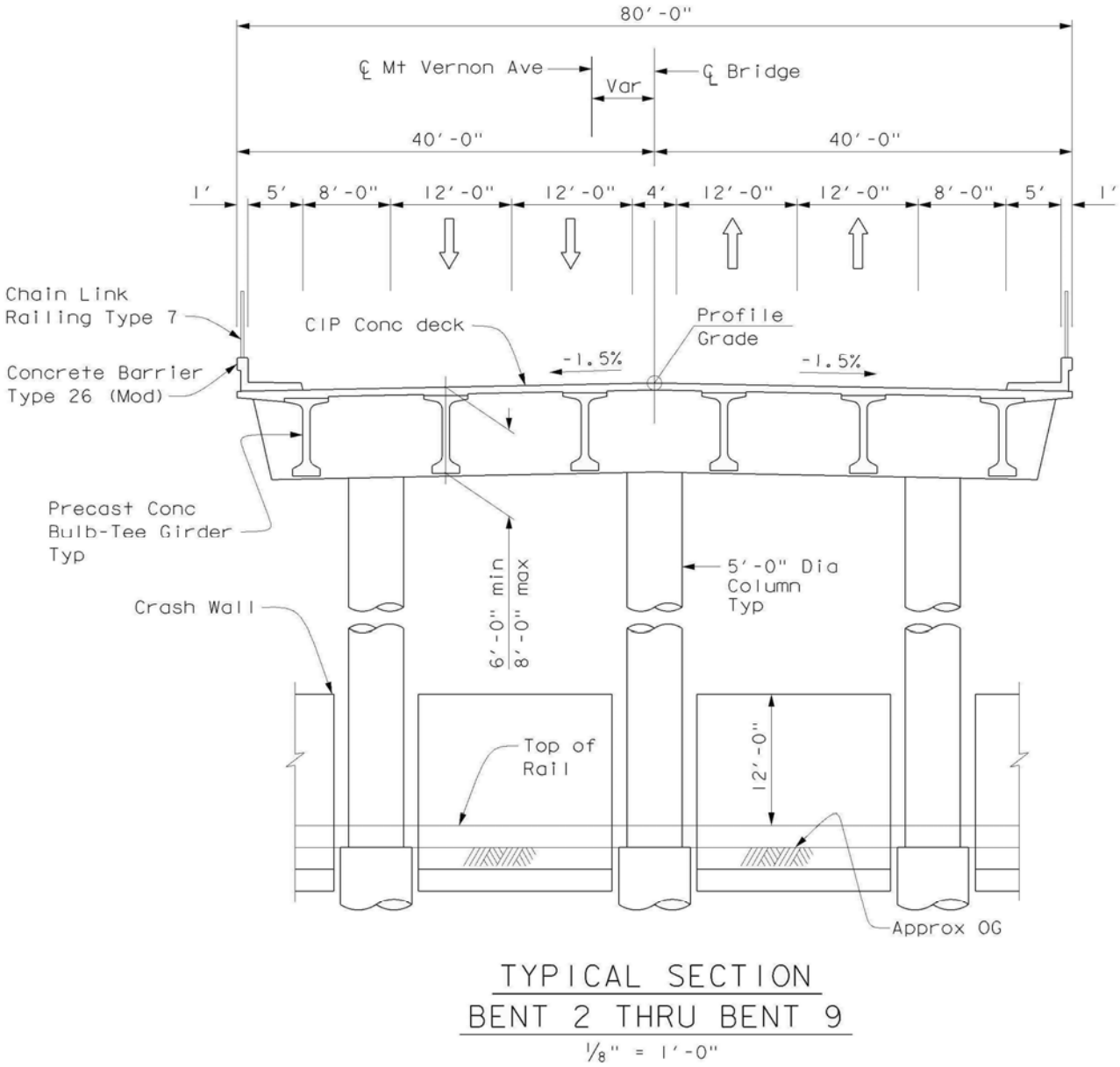


TYPICAL SECTION
BENT 2 THRU BENT 9
1/8" = 1'-0"

**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4b**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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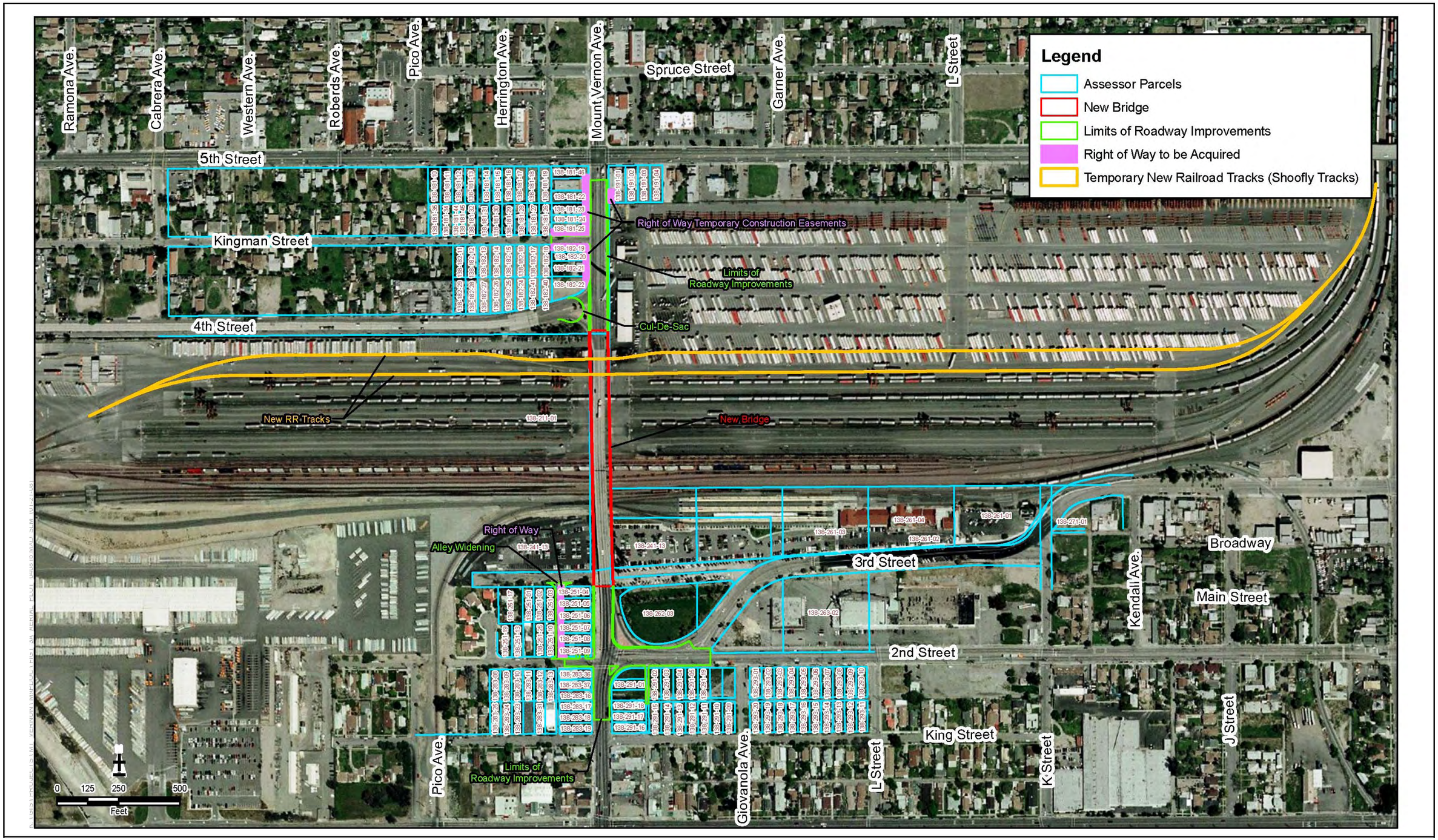


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4c**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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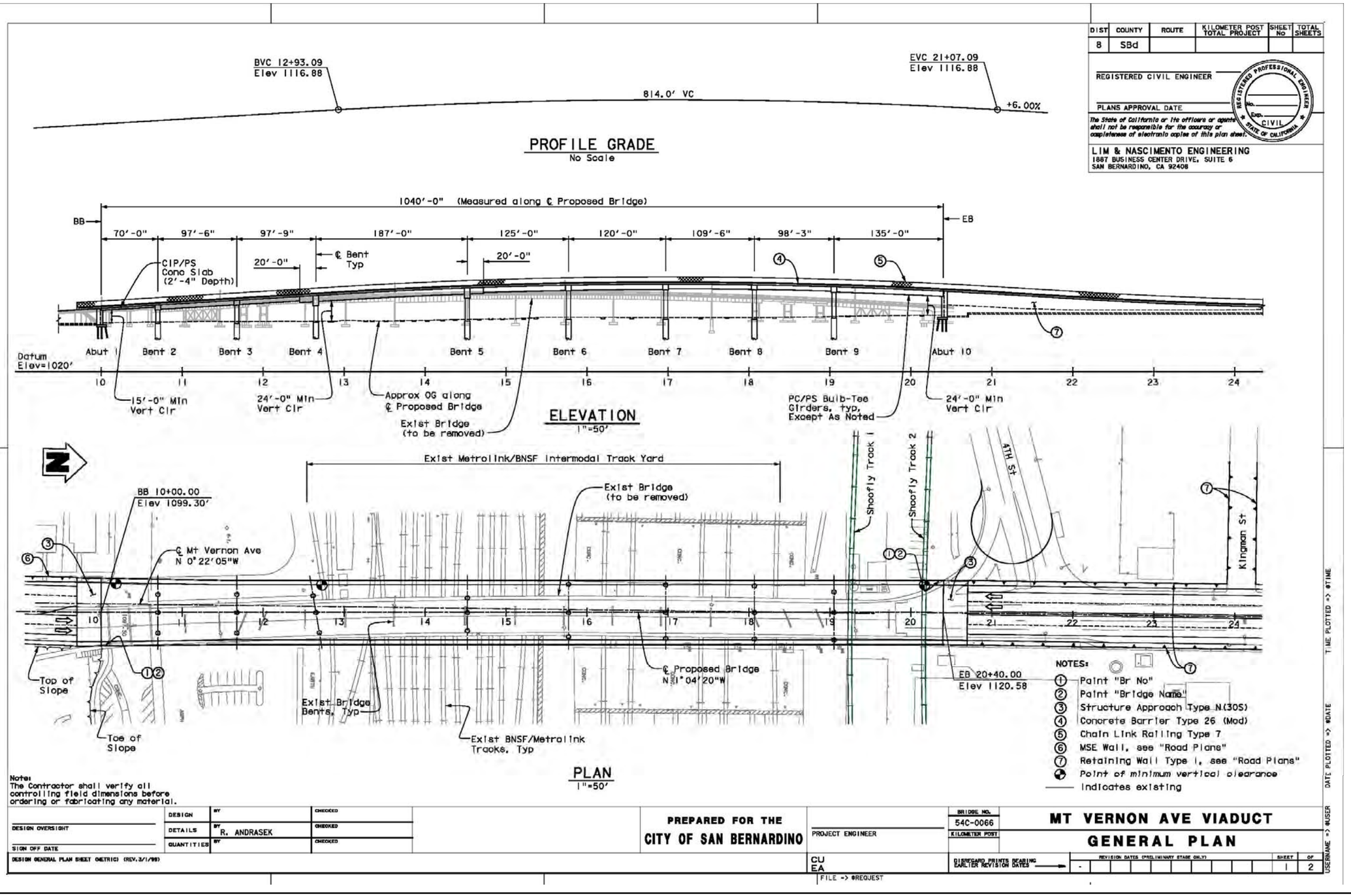


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4d**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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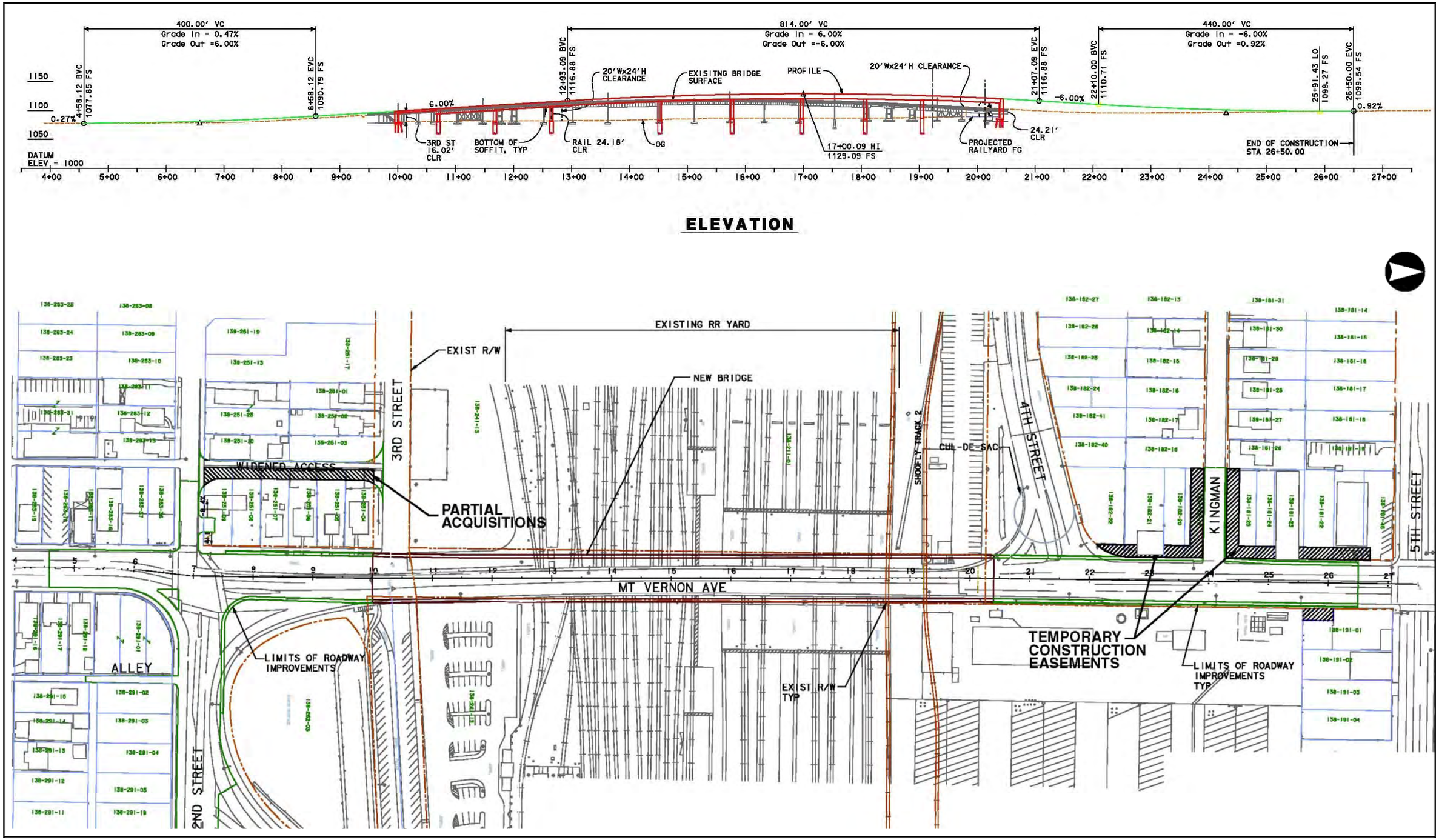


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4e**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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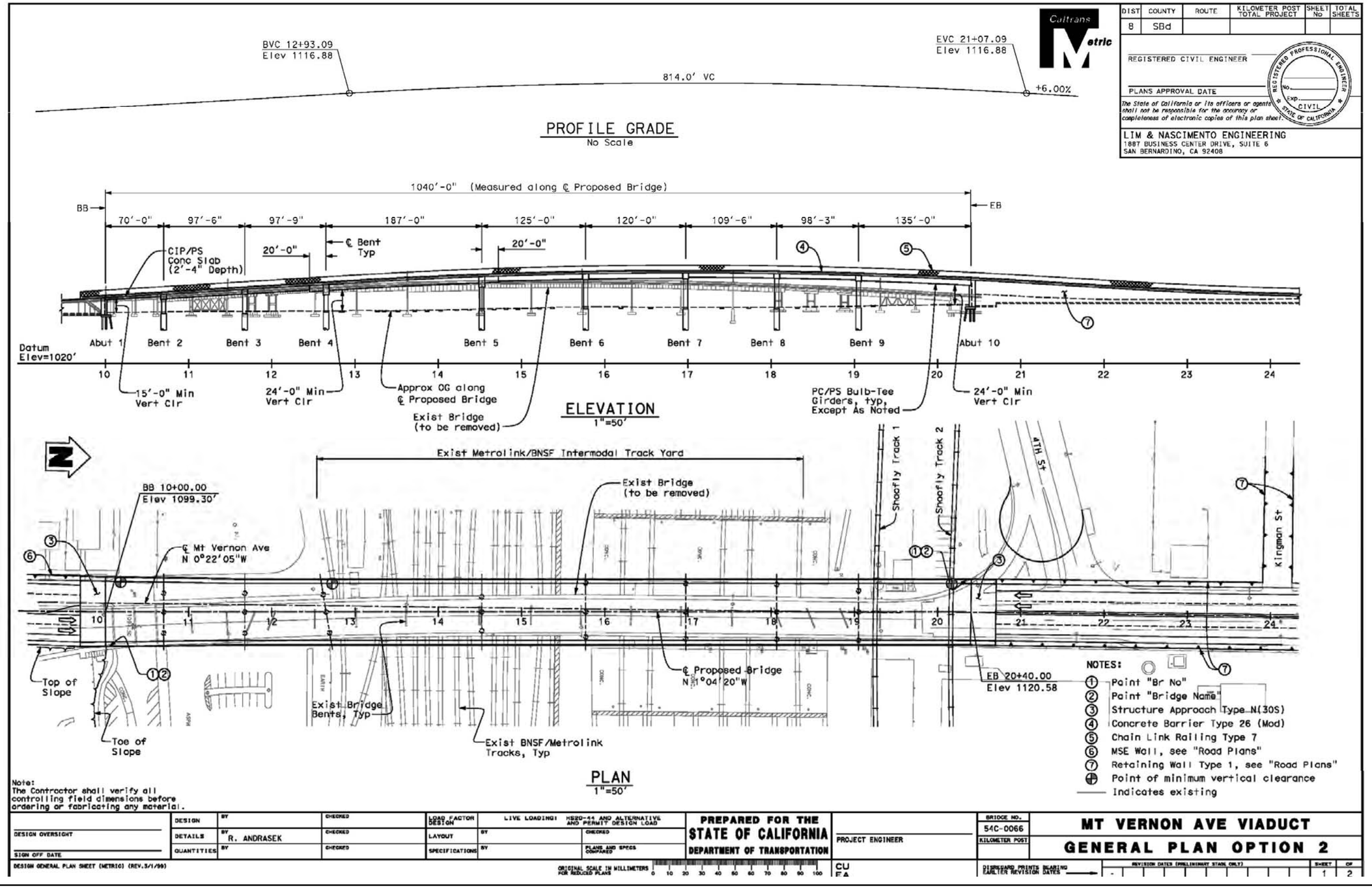


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4f**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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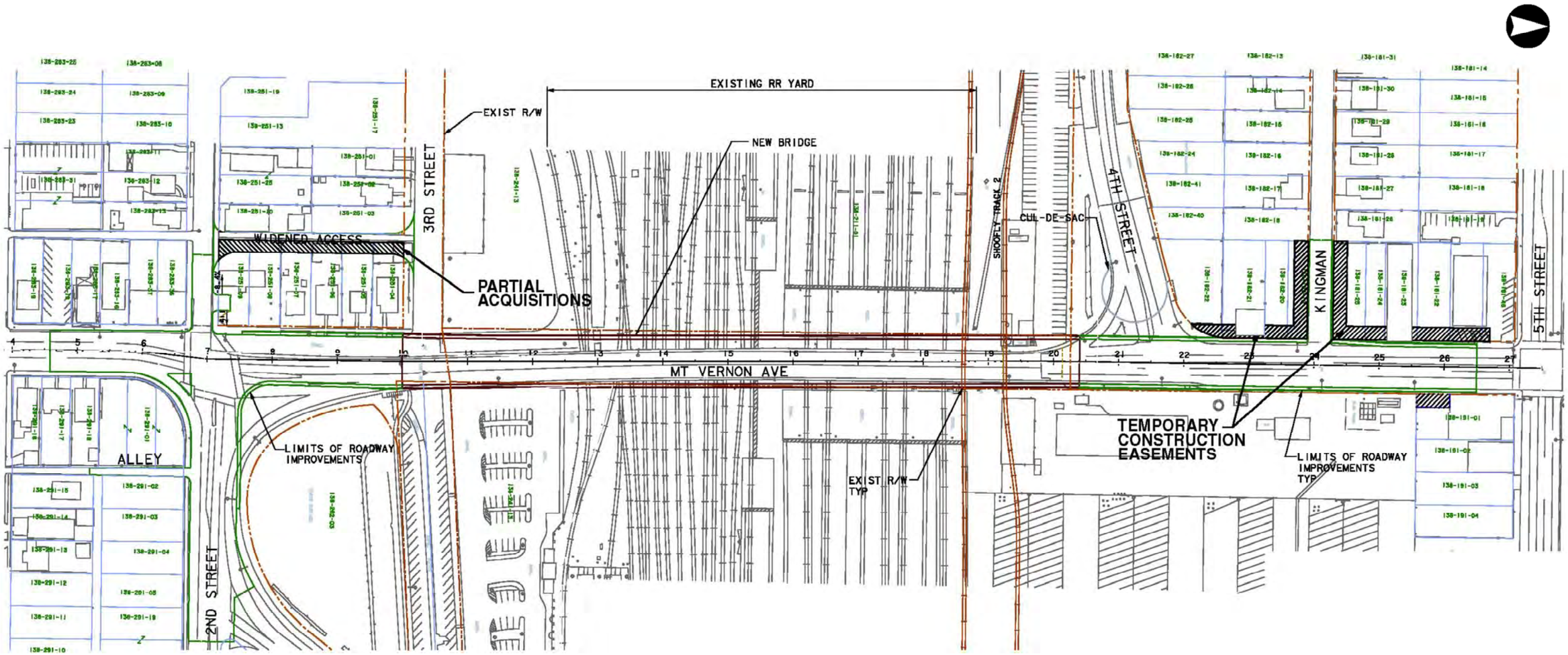


**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 1-4g**
**Locally Preferred/Replacement Alternative (Alternative 3)**
**Mount Vernon Avenue Bridge Project**

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future/continued residential occupancy of properties along the service road, a parallel alleyway behind four residential parcels in this area would be widened to provide a replacement vehicular access road for the neighboring residents and railroad facilities. Because the bridge widening and realignment would require closure of the service road along the southwest end of the Mount Vernon Avenue Bridge, a parallel alleyway behind the residential parcels in this area would be widened to provide a replacement access road for the neighboring residents and railroad facilities. Assuming future/continued residential occupancy of properties along the service road, an alleyway in the southwest portion of the project area will also be improved. The alleyway would be upgraded to "Access Roadway" standards, providing a travelled way of 26 feet (curb-to-curb) consisting of two un-striped 13-foot wide lanes (beyond 10-foot standard lanes). The road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access and residents who live adjacent to the road would be primary users of the road. An additional two-foot easement beyond both westerly and easterly curbs will provide room for placement of future utilities, and maintenance of the roadway itself; however, this area does not provide room for new parking spaces for vehicles nor new sidewalks. Although the road will not include formal sidewalks, pedestrian use of this road would not be prohibited. The road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access and residents who live adjacent to the road would be primary users of the road.

*Roadway Improvements:* Additional roadway improvements at the south end of the bridge would include minor restriping, repaving, and installing of curbs and gutters. At the north end of the new bridge, similar types of roadway improvements would be provided. Additionally, retaining walls or concrete walls would be constructed along both sides of the north approach between about Kingman Avenue and West 4th Street. The walls would be landscaped with vegetation that has aerial rootlets to cover the wall, potentially with creeping fig. The intersection of West 4th Street and Mount Vernon Avenue has been reconstructed in a cul-de-sac configuration as part of a separate City public works project.

*Railroad Operations:* The BNSF rail yard provides service to four different and very active railroad operations—BNSF freight, BNSF storage, Metrolink, and Amtrak. Because of these important railroad services, the primary focus of the structure design would be to maintain railroad operations during the construction of the new bridge. In order to do this, BNSF would require that two temporary railroad tracks (*shoofly* tracks)

be installed within the north side of their existing BNSF yard, on both sides of the bridge, parallel to the existing BNSF railroad tracks.

Construction methods that would minimize impacts on railroad operations would be employed for the new replacement bridge. Removal of the existing bridge would be performed prior to construction using overhead techniques when and where possible. The girders would be precast concrete bulb-tee girders (concrete deck). The bridge foundation would be formed by large diameter drilled shafts (commonly referred to as cast-in-steel-shell piles, or CISS) to avoid the substantial footprint area required for pile-group-type foundations. Minimizing the footprint of the substructure would reduce the impact to railroad operations. Columns would be supported on the CISS piles, and where required and/or feasible, crash walls would be implemented. Construction of the replacement bridge would be carried out using standard techniques that are typical in California and would be staged in the railroad right-of-way using BNSF and Metrolink authorized work windows.

The project schedule would consist of the following milestones:

| Milestones | Date |
|---|---|
| Environmental Document Approved | late 2010 |
| Start of Construction | mid 2012 |
| End of Construction | mid 2014 |

The project is funded through the Federal HBRR Program, seismic retrofit account, and Local City funds.

For Alternative 3, the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

#### 1.4.2.3 No Build Alternative (Alternative 1)

Under the No Build Alternative, no new or modified bridge or other physical improvements would be constructed on Mount Vernon Avenue between West 2nd and West 5th Streets. The existing bridge would be left in its current condition, and no structural or functional deficiencies would be corrected. Ongoing maintenance would continue. The No Build Alternative does not assume that the existing bridge would undergo seismic retrofitting.

This option was studied by the City in 1996 and was later discontinued in favor of constructing a new bridge. On June 4th, 2004, Department Structures Maintenance and

Investigations staff recommended closure of the existing bridge, concluding that steel beam and girder cracking cause the bridge to be unsafe. The City closed the bridge and has since undertaken efforts to install temporarily shoring. However, per an agreement between the City and BNSF regarding temporary shoring work, BNSF requires the removal of the shoring before the end of 2 years, requiring the bridge to be closed again. However, the end of the 2-year period has passed, and the shoring is currently in place. BNSF has not requested removal of the shoring and the bridge is currently open. The existing shoring would be maintained to ensure original load-carrying capacity is retained, and recent investigation has determined that an additional bent (Bent 6, Span 6 per as built plans) would require temporary shoring.

Permanent closure of the bridge would result in an unreasonable social and economic burden on the local community. Accordingly, the No Build Alternative has been determined to be imprudent and infeasible and would not meet the project purpose and need as previously described.

### 1.4.3 Comparison of Alternatives

Alternative 2 (Retrofit/Rehabilitation Alternative) would not provide an acceptable design life (15 to 20 years) and would not address the substandard vertical clearance over the BNSF railroad tracks. Taking into consideration the results of the 2004 Bridge Study Report and the previously described limitations, the PDT agreed at its April 6, 2004, meeting that the Retrofit/Rehabilitation Alternative (Alternative 2) was deemed not viable and that a replacement bridge (Alternative 3) would be the preferred alternative to rehabilitating/retrofitting the Mount Vernon Avenue Bridge.

After comparing and weighing the benefits and impacts of all of the feasible alternatives, the project development team has identified Alternative 3 as the Locally Preferred/Replacement Alternative, subject to public review. Final identification of a preferred alternative will occur subsequent to the public review and comment period.

After the public circulation period, all comments will be considered, and the City will select a preferred alternative. The Department will make the final determination of the project's effects on the environment. If the Department, as assigned by FHWA, determines that the National Environmental Policy Act (NEPA) action does not significantly affect the environment, the Department will issue a Finding of No Significant Impact (FONSI) in accordance with NEPA.

### 1.4.4 Identification of a Preferred Alternative

A Bridge Study Report documenting the results of the special bridge study was issued in March 2004. The report concluded that it would be technically feasible to retrofit and rehabilitate the bridge in a manner that would remove it from the EBL and improve its capability to withstand the maximum credible seismic event. The recommended improvements included bridge widening, full deck replacement, span replacement, girder and bent retrofit, bracing, lead paint removal, repainting, and locally lowering West 3rd Street below the bridge. Although the 2004 Bridge Study Report found that a retrofit/rehabilitation alternative was technically feasible, the following important caveats were noted:

- Even with all possible planning to minimize harm to the historic resource, direct or indirect alterations to the historic characteristics that qualify the resource for listing in the NRHP would likely result in an adverse effect under Section 106 and a direct use under Section 4(f). These issues would be more fully examined in the Section 106 and Section 4(f) documentation.
- The retrofitted bridge would have a limited service life of only 15 to 20 years because (1) major portions of the steel girders that were salvaged from the 1907 bridge could have questionable rivet connections due to corrosion; and (2) the bridge has been carrying heavy daily truck traffic since it was constructed in 1934, causing the aged carbon steel to reach the maximum allowable truck load cycles associated with fatigue.
- Some of the timber piles supporting the bridge foundations could be decayed from aging.

Two other limitations of the retrofit/rehabilitation alternative were presented to the PDT. First, even though the retrofit/rehabilitation alternative would meet the 6.9-m (22.5-foot) minimum vertical clearance requirement for CPUC, it would not meet the 7.3-m (24-foot) minimum vertical clearance required by the BNSF railroad. Second, to meet horizontal clearance requirements, some of the crash walls under this alternative would have to be limited to a nonstandard 0.4-m (1.3-foot) thickness.

Taking into consideration the results of the 2004 Bridge Study Report and the previously described limitations, the PDT agreed at its April 6, 2004, meeting that the retrofit/rehabilitation alternative was not viable and that a replacement bridge would be the preferred alternative to retrofitting/rehabilitating the Mount Vernon Avenue Bridge.

### 1.4.5 Alternatives Considered but Eliminated from Further Discussion

In 1997, the *New Mount Vernon Bridge Concept Study Report* (DMJM, 1997) evaluated four conceptual alternative bridge alignments. Two of these alignments were dropped from consideration during the study based on their impacts and costs. Three bridge types were studied further for alternative alignments 1 through 4 and included the following:

- Bridge Type A—Precast segmental concrete box girders (two independent structures);
- Bridge Type B—Trapezoidal steel girders with cast-in-place concrete decks (two independent structures); and
- Bridge Type C—Precast segmental cable-stayed box girders (one single structure).

Four project-specific bridge criteria were evaluated for each of the three bridge types, including:

- maintenance of north/south vehicular traffic,
- minimized disruption to rail operations,
- seismic performance, and
- structure maintenance.

The alternative alignments and bridge types considered were as follows.

*Alternative Alignment 1:* This alternative was proposed as a new four-lane bridge, generally in the same location as the existing bridge. The horizontal alignment of this alternative would eliminate the existing curve in the bridge with minimal alterations to the intersections at West 2nd and West 4th Streets. However, adjusting the horizontal alignment would require the acquisition of properties fronting the bridge on the southwest side between West 2nd and West 3rd Streets. Advantages of this alternative alignment include minor impacts on BNSF rail operations, intermodal apron, and existing buildings. While this alternative would have some impacts on existing utilities, the impacts would be less than those for the other alternative alignments evaluated. All three bridge types considered for this alternative alignment would require complete closure of the existing bridge to vehicular and pedestrian traffic during construction. Bridge Type C would result in the least impact on rail facilities and operations, but Type A, the precast segmental box girder, would also result in minimal impacts. All three bridge types would afford the same level of seismic performance. Bridge Type A would require the least maintenance of all the bridge types; Type B would have the highest cost due to periodic

painting. Alternative Alignment 1, the only viable alternative, has been carried forward to the current studies. Retrofit/rehabilitation or replacement of the Mount Vernon Avenue Bridge is needed because the current facility exhibits the structural and functional deficiencies.

*Alternative Alignment 2:* This alternative was proposed as a new four-lane bridge on an alignment west of the existing bridge. Once a new bridge was constructed, the existing bridge would have been demolished. Vehicular and pedestrian traffic could have been maintained on the existing bridge during construction of the new bridge. Construction outside of the existing bridge footprint would have required approval by the railroad operators. This alternative would have resulted in substantial impacts on BNSF intermodal facilities and operations, as well as Amtrak and Metrolink service. This alternative alignment also would have required relocating existing utilities, reconstructing both the West 2nd and West 4th Street intersections, and acquiring adjacent residences and businesses. All three bridge types considered for this alternative alignment would have allowed for vehicular and pedestrian traffic on the existing bridge during construction. Impacts on rail operations, seismic performance, and structure maintenance would be the same as those previously discussed for Alternative Alignment 1. Because this alternative would have required substantial alterations to the existing BNSF railroad facilities and the reconstruction of street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration. Although Alternative Alignment 2 meets the project Purpose and Need; it would require more substantial alterations to the existing BNSF intermodal facilities and operations, more extensive relocation of existing utilities, less desirable intersection/street/approach reconstruction locations for the West 2nd Street and West 4th Street intersections, and acquisition of both residential and commercial properties; therefore, it was withdrawn from consideration.

*Alternative Alignment 3:* This alternative was proposed as a new four-lane bridge on an alignment east of the existing bridge. Traffic would have been maintained on the existing Mount Vernon Avenue Bridge during construction, as previously discussed for Alternative Alignment 2. Also similar to Alternative Alignment 2, this alternative would have had substantial impacts on rail facilities and operations, but east of the existing bridge. Of particular concern were potential impacts on the nearby locally significant Santa Fe smokestack located just east of the bridge at West 4th Street. Other disadvantages of this alternative alignment would have included reconstruction of both the West 2nd and West 4th Street intersections, impacts to the Metrolink parking lot, and relocation of existing utilities. Like Alternative Alignments 1 and 2, this alternative also

would have required acquisition of residential and commercial properties. Because this alternative would have required altering the existing BNSF railroad facility, modifying the existing Metrolink commuter parking lot, and reconstructing street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration with no additional evaluation of bridge types. Although Alternative Alignment 3 meets the project Purpose and Need; it would have impacts to the Santa Fe smokestack and impacts to the Metrolink parking lot (in addition to impacts similar to Alternative Alignment 2); therefore it was withdrawn from consideration.

*Alternative Alignment 4:* This alternative was proposed as a new split bridge with two southbound lanes west of and two northbound lanes east of the existing bridge. The split alignment would have allowed for construction of the new bridges while the existing bridge remained in service. The existing bridge would have been demolished once the new bridges were in operation. This alternative would have had impacts similar to those for Alternative Alignments 2 and 3 (i.e., utility relocations and property acquisitions). It would have resulted in the least desirable intersections at West 2nd and West 4th Streets and would have had the highest impact on railroad facilities and operations. Because this alternative would have required altering the existing BNSF railroad facility and reconstructing street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration with no additional evaluation of bridge types. Although Alternative Alignment 4 meets the project Purpose and Need; it would have impacts to the Santa Fe smokestack and impacts to the Metrolink parking lot (in addition to impacts similar to Alternative Alignment 2); therefore it was withdrawn from consideration.

*TSM/TDM Alternative*: Transportation System Management (TSM) increases the efficiency of existing facilities and Transportation Demand Management (TDM) reduces the number of vehicle trips and vehicle miles traveled in addition to increasing vehicle occupancy. It is necessary to consider TSM/TDM projects for all projects in areas of over 200,000 population. While a TSM/TDM alternative should be considered, the Mount Vernon Avenue Bridge Project addresses the structural and functional deficiencies of the bridge. Because TSM/TDM alternatives do not address neither structural nor functional deficiencies, this alternative was eliminated from further consideration. Retrofit/rehabilitation or replacement of the Mount Vernon Avenue Bridge is needed because the current facility exhibits the structural and functional deficiencies.

## 1.5 Permits and Approvals Needed

Table 1-1 shows permits, reviews, and approvals would be required for the project.

## Table 1-1 Permits and Approvals Needed

| Agency | Permit/Approval | Status |
|---|---|---|
| State Water Resources Control Board (SWRCB) | Clean Water Act Section 402-The National Pollutant Discharge Elimination System (NPDES). Prior to issuance of any grading permits, the City will prepare a Stormwater Pollution Prevention Plan (SWPPP) and provide proof that a Notice of Construction was filed for the coverage under the state NPDES for construction-related discharges. This evidence will consist of a Waste Discharge Identification Number (WDID) issued by SWRCB. | To be submitted after approval of final Environmental Document |
| State Office of Historic Preservation (SHPO) | As part of the Section 106 process, a Memorandum of Agreement (MOA) would be developed between the SHPO and the Department due to the finding of Adverse Effect for the bridge. Additional design details will likely be developed in the pending MOA, which will be finalized after public review of the Environmental Assessment. This MOA also requires concurrence of the Department local office (Department District 8) and the City of San Bernardino. Architectural design of the proposed structures will be submitted to and approved by City officials prior to alteration of the existing historical resources. | A draft of the MOA was submitted to SHPO for review on December 3, 2008. To date, comments on the MOA have not been received. This document is to be finalized and approved after public circulation of the draft Environmental Document |
| Burlington Northern Santa Fe (BNSF) Railroad | Encroachment Permit application submittal during PS&E final design.<br><br>Cooperative Agreement process to commence during PS&E final design. | A series of discussions, including participation in the Value Analysis (VA) for the project, have occurred with BNSF and preliminary plans were approved at that time of the VA.<br><br>The Cooperative Agreement will be coordinated with the California Public Utilities Commission. |
| **SOURCES:** Supplemental Historic Property Survey Report (Jones & Stokes, 2007b)<br>Initial Site Assessment (Ninyo & Moore, 2010a) | | |

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

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

- *Coastal Zone:* The project is not within the State Coastal Zone.
- *Wild and Scenic Rivers:* The project is not in the vicinity of a designated Wild and Scenic River.
- *Farmlands/Timberlands*: There are no farmlands or timberlands within or adjacent to the project site.
- *Hydrology and Floodplains:* The project site is not located in a Federal Emergency Management Agency (FEMA)-designated 100-year floodplain.
- *Sole Source Aquifer:* The project is not within a designated Sole Source Aquifer.
- *Encroachment on State Lands:* The project would not encroach on State lands.

The following technical reports were prepared in support of this analysis:

- Community Impact Assessment, August 2010;
- Pedestrian and Vehicular Detour Analysis, June 2010;
- Initial Site Assessment, August 2005, updated January 2010;
- Asbestos and Lead Based Paint Survey, August 2005, updated January 2010;
- Noise Technical Memorandum, June 2010;
- Noise Study Report, June 2006, updated June 2008;
- Mount Vernon Avenue Bridge Traffic Conditions Memorandum, November 2009;
- Preliminary Foundation Report, August 2000, updated March 2009;
- Paleontological Identification Report/Paleontological Evaluation Report, March 2009;
- Visual Impact Memorandum, February 2009;
- Archaeological Survey Report, June 2007;
- Historic Property Survey Report (HPSR), August 2001 and 1st Supplemental HSPR with Finding of Effect, April 2007; and
- Natural Environment Study – Minimal Impacts, March 2006.

# 2.1 Human Environment

## 2.1.1 Land Use

### 2.1.1.1 Existing and Future Land Use

#### Affected Environment

The information contained in this section was primarily taken from the *Community Impact Assessment* (ICF International, 2010b) prepared for the Mount Vernon Avenue Bridge Project.

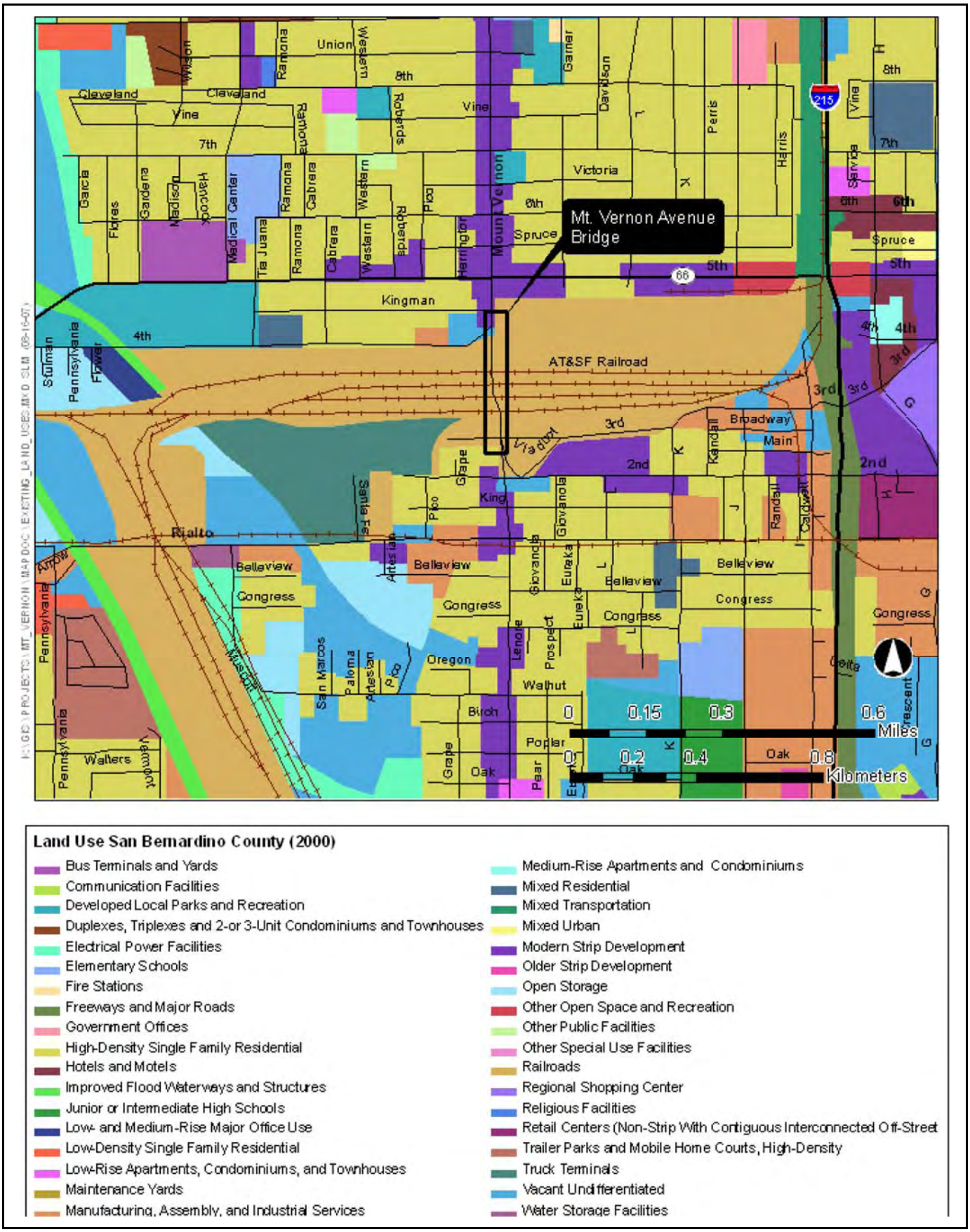
##### *Existing Land Use*

The Mount Vernon Avenue Bridge is located within the incorporated area of the City of San Bernardino (see Figures 1-1 and 1-2). The project site consists of two portions. The first portion is the Mount Vernon Avenue Bridge over the BNSF rail yard. The second portion of the site is the proposed shoofly track area at the BNSF rail yard. Shoofly tracks are temporary tracks that would be used to replace rail capacity during pending bridge demolition/construction activities. The following paragraphs describe the Mount Vernon Avenue Bridge and the proposed shoofly track area. Existing land use within the vicinity of the project area is shown by Figure 2-1a.

##### *Mount Vernon Avenue Bridge*

The existing bridge is designated the Department as Bridge No. 54-C0066. The existing Mount Vernon Avenue Bridge follows a generally north-south alignment along Mount Vernon Avenue and carries both vehicular and pedestrian traffic. The average daily traffic (ADT) measured at the bridge in 2009 was about 14,677. The bridge is approximately 309.7 m (1,016 feet) long and 14.9 m (49 feet) wide with four 3.1-m (10-foot) traffic lanes (two in each direction) and no median or shoulders. Sidewalks on each side of the existing bridge are 1.1 m (3.5 feet) wide. Concrete barrier railings are located on each side of the bridge, though multiple areas have deteriorated or have been damaged and replaced with steel plates or plywood. Current vertical clearance over West 3rd Street is 4.0 m (13 feet), which is less than the current 4.6-m (15-foot) standard. Vertical clearance over the BNSF rail yard is 6.6 m (21.8 feet), which does not meet the current minimum clearance requirements of either the CPUC (minimum 6.9-m [22.5-foot] vertical clearance) or the BNSF railroad (minimum 7.3-m [24-foot] vertical clearance). The existing horizontal clearance between the bridge bents and some of the railroad tracks is only 1.8 to 2.4 m (6 to 8 feet) with no crash walls. Standard minimum horizontal clearances are 6 m (20 feet) without crash walls and 3 m (10 feet) with crash walls. Because the bridge is slightly offset to the east from the centerline of Mount Vernon Avenue at about West 2nd Street, the current south approach is misaligned with the bridge.

The actual bridge structure extends over a BNSF Railroad Intermodal Facility, BNSF yard operation tracks, BNSF transcontinental tracks, Metrolink tracks, and a Metrolink parking lot.




**SOURCE:** Geographic Information Systems Data (SCAG, 2000)

**Figure 2-1a**
**Existing Land Use Map**
**Mount Vernon Avenue Bridge Project**

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The western side of the bridge is bound (from north to south beginning at 5th Street and ending at 2nd Street) by Maggie's Beauty Supply, El Patio Hotel, vacant land, Kingman Street, a vacant store building, 4th Street, a parking lot, Metrolink/BNSF Intermodal Track Yard, a BNSF storage yard, single-family residences, and a car wash. The east side of the bridge is bound (from north to south beginning at 5th Street and ending at 2nd Street) by Rubin Villa Restaurant, a BNSF vehicle maintenance building, Metrolink/BNSF Intermodal Track Yard, a parking lot, and vacant land. Properties north of 5th Street include a vacant lot and Arrowhead Credit Union. Properties south of 2nd Street include vacant land and Quick Stop Tires.

#### *Proposed Shoofly Track Area*

The proposed shoofly track area is in the northern portion of the BNSF rail yard as shown in Figure 1-4g. This portion of the site extends through most of the length of the rail yard from the approximate western end of the rail yard to the intersection of 5th Street and I Street (northeastern corner of the rail yard). This portion of the site is approximately 1,829 m (6,000 feet) long and extends from approximately 610 m (2,000 feet) west of the Mount Vernon Avenue to the intersection of the railroad tracks and 5th Street. The proposed shoofly track area west of the bridge is a driveway. The proposed track area east of the site is mostly used as a driveway with certain portions near the bridge occupied by shipping containers.

The project area is highly developed with commercial and residential uses, as well as transportation uses associated with the nearby BNSF railroad facility and Metrolink/Amtrak station. Residential neighborhoods are located at both the northwest portion and the southwest portion of the study area, along the service road at the southwest end of the bridge between West 2nd and West 3rd Streets.

Commercial establishments in the project area are dominated by automobile-related businesses, such as auto repair shops and parts retailers. Other prominent commercial operations include bars/restaurants, ethnic food markets, discount stores, and service-oriented businesses such as hair salons, shoe repair shops, and video rental establishments. To the north of the railway yard is Anita's Mexican Food Corporation, which manufactures Mexican food products. Located at the south end of the bridge, at the northwest and southwest corner of Mount Vernon Avenue and 2nd Street, are a car wash at 202 North Mount Vernon Avenue and a tire service retailer, respectively. The majority of the commercial establishments are neighborhood-level retailers. The residential properties surrounding the project are almost entirely single-family structures, located primarily along Rialto Avenue, with very few multi-family units.

#### *Future Land Use*

Future land uses in the project area are guided by City and County General Plans and zoning. These land use guidance documents orient future land uses in terms of types of use, placement, and density, and are subject to limitations such as jurisdictional boundaries, topographical and environmental conditions, and overriding state or federal regulations. Future land use within the vicinity of the project area is shown by Figure 2-1b. In assessing the effects of a project, information obtained from land use guidance documents and \local development projects contribute substantially to the development of an accurate characterization of future project area conditions. The local development projects listed in Table 2-1 and shown on Figure-2-2 are also considered in this assessment of the project's effect on land use.

The City of San Bernardino General Plan was updated in 2005. The General Plan establishes the goals, objectives, policies, and programs applicable to the land use planning and development in the City. The area surrounding the project site is located in an area with seven individual land use designations: 1) Industrial Heavy (IH) (0.75 floor area ratio); 2) Industrial Light (IL) (0.75 floor area ratio); 3) Commercial Office (CO) (1.0 floor area ratio); 4) General Commercial 1 (CG-1) (0.7 floor area ratio); 5) General Commercial 2 (GC-2) (1.0 floor area ratio); and 6) Residential Suburban (RS) (4.5 dwelling units per acre [7,200squaure feet minimum lot size]). Existing development in the project area is generally consistent with the associated future land use designations.

The project site is within the Mount Vernon Avenue Corridor Redevelopment Plan. The renovation of Mount Vernon Avenue Bridge is identified as a future development project for this area (City of San Bernardino, 2005).

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by

Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

The elimination of the bridge crossing would disrupt the local and regional circulation system, resulting in an effect on existing land uses that require access currently provided by the bridge.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on existing land use would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. This alternative would retrofit and rehabilitate the existing bridge with generally similar characteristics and capacity, but it would not address the nonstandard vertical and horizontal clearances over the BNSF railroad tracks. Consequently, this alternative is not compatible with existing rail yard land use owned and operated by BNSF.

Additionally, this alternative would not replace all of the existing girders that have been determined to have neared their service life. As a result, the bridge would likely have a remaining service life of only 15 to 20 years beyond the completion year of 2012. A subsequent period of disruption would occur to neighboring land uses when the limited service life of the bridge improvements is exceeded and a new bridge would have to be constructed in the relatively near future.

Temporary Construction Impacts. Refer to the discussion for Alternative 3, Temporary/ Construction Impacts.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

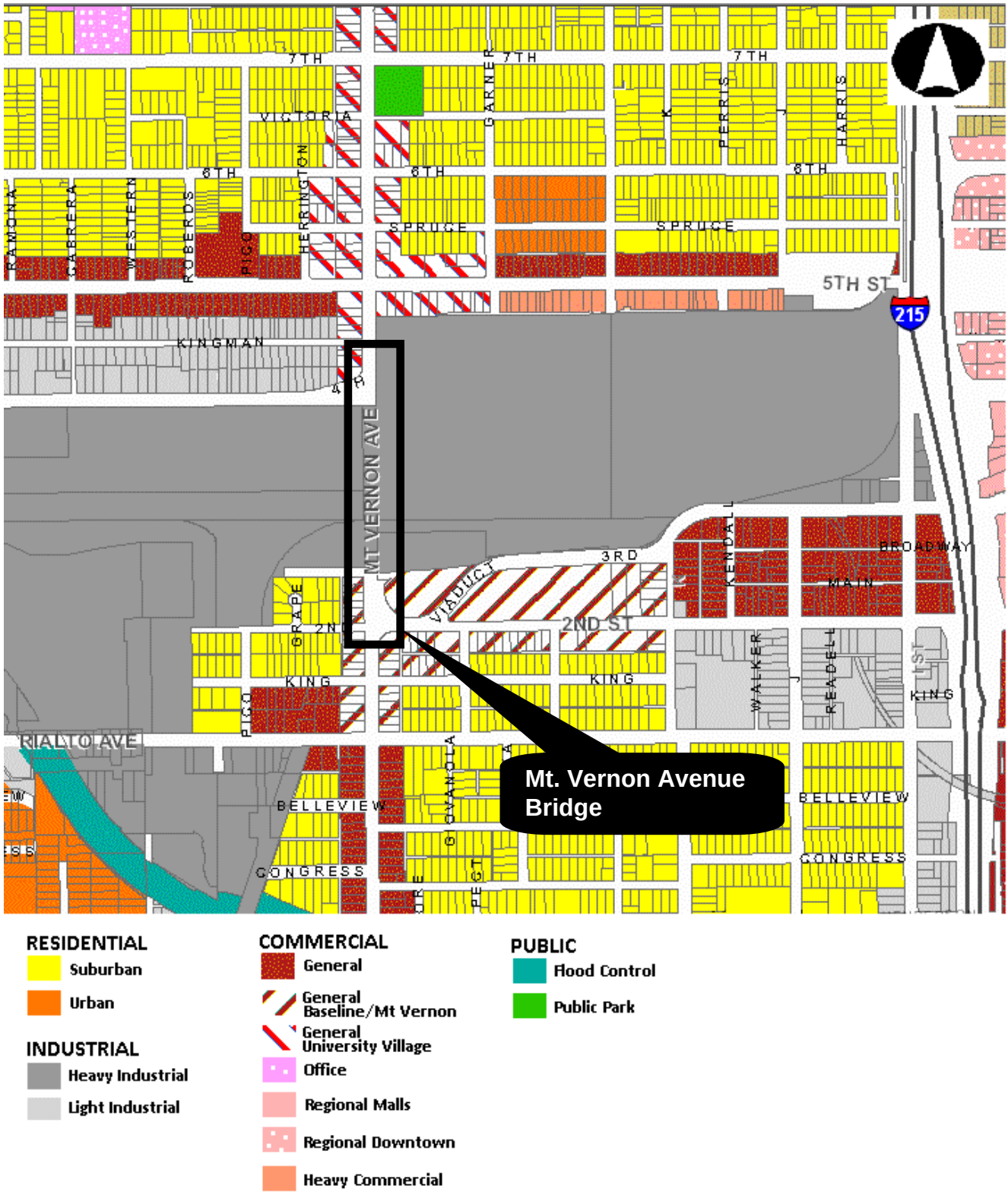
Permanent Impacts. The proposed bridge replacement project would not include activities that would substantially conflict with the existing or future land use in the vicinity. Since this alternative would replace an existing bridge with a new bridge of generally similar characteristics and capacity, it would remain consistent with the land uses and future regional plans in the surrounding area and would not physically divide an established community. The replacement bridge would have a normal useful service life and would not require additional future disruption of neighboring land uses for many years. No effects would occur.

## Table 2-1. Local Development Projects in the Jurisdiction of the City of San Bernardino

| Site ID[1] | Name | Proposed Uses | Status |
|---|---|---|---|
| 1. | La Placita | New 98,000 S.F. shopping center w/ market, 2 restaurants, 2 multi-tenant retail buildings located at 1184 W. 2nd Street. | Approved |
| 2. | Residential Tract | Subdivide 12.42-acre into 95 unit PRD w/ GPA located at San Marcos Street, 150 feet north of Walnut Street | Approved |
| 3. | Residential Tract | 48 unit gated small lot subdivision on 5,000 SF lots located at 1611 West Walnut Street. | Approved |
| 4. | Beauty Salon | Proposed new use by establishing a beauty salon located at 1317 East Rialto Avenue | Submitted |
| 5. | ARCO | Gas station with convenience store located at 542 North Mount Vernon Avenue | Approved |
| 6. | Candle Shop | Candle shop, new parking lot, refuse enclosure, and other improvements located at 646 North Mount Vernon Avenue. | Approved |
| 7. | Office Building | Construct a 2-story office building with podium parking located at 1159 West 5th Street. | Submitted |
| 8. | Mechanic Shop | Proposed mechanic shop located at 161 North J Street | Submitted |
| 9. | Storm Drain | Viaduct Blvd Storm Drain Realignment | Submitted |
| 10. | Park | La Plaza Park Fencing and Lighting | Submitted |
| 11. | Sewer | 3rd Street Sewer Replacement from “G” to “H” Street | Submitted |
| 12. | Sewer | G Street Sewer Replacement from 9th to 4th | Submitted |
| 13. | Sewer | Rialto Avenue Sewer Replacement from K to H | Submitted |
| 14. | Signal | Traffic Signal at Viaduct Blvd and 2nd Street | Submitted |
| 15. | Signal | Upgrade Traffic Signal at Rialto Ave and I Street | Submitted |
| 16. | Parking Structure | Construct new Metrolink Parking Structure to the northwest and adjacent to Mount Vernon Avenue Bridge | Approved |

**SOURCES:** Billups, D., 2007
City of San Bernardino Capital Improvements Program 2009/2010
Finding of Effect for the Metrolink Parking Structure Project (March 2009).

**NOTE:** [1]Site ID numbers correspond to Figure 2-2, Local Development Projects




**SOURCE:** General Plan, Figure LU-2 (City of San Bernardino, 2005)

**Figure 2-1b**
**Proposed Land Use Map**
**Mount Vernon Avenue Bridge Project**

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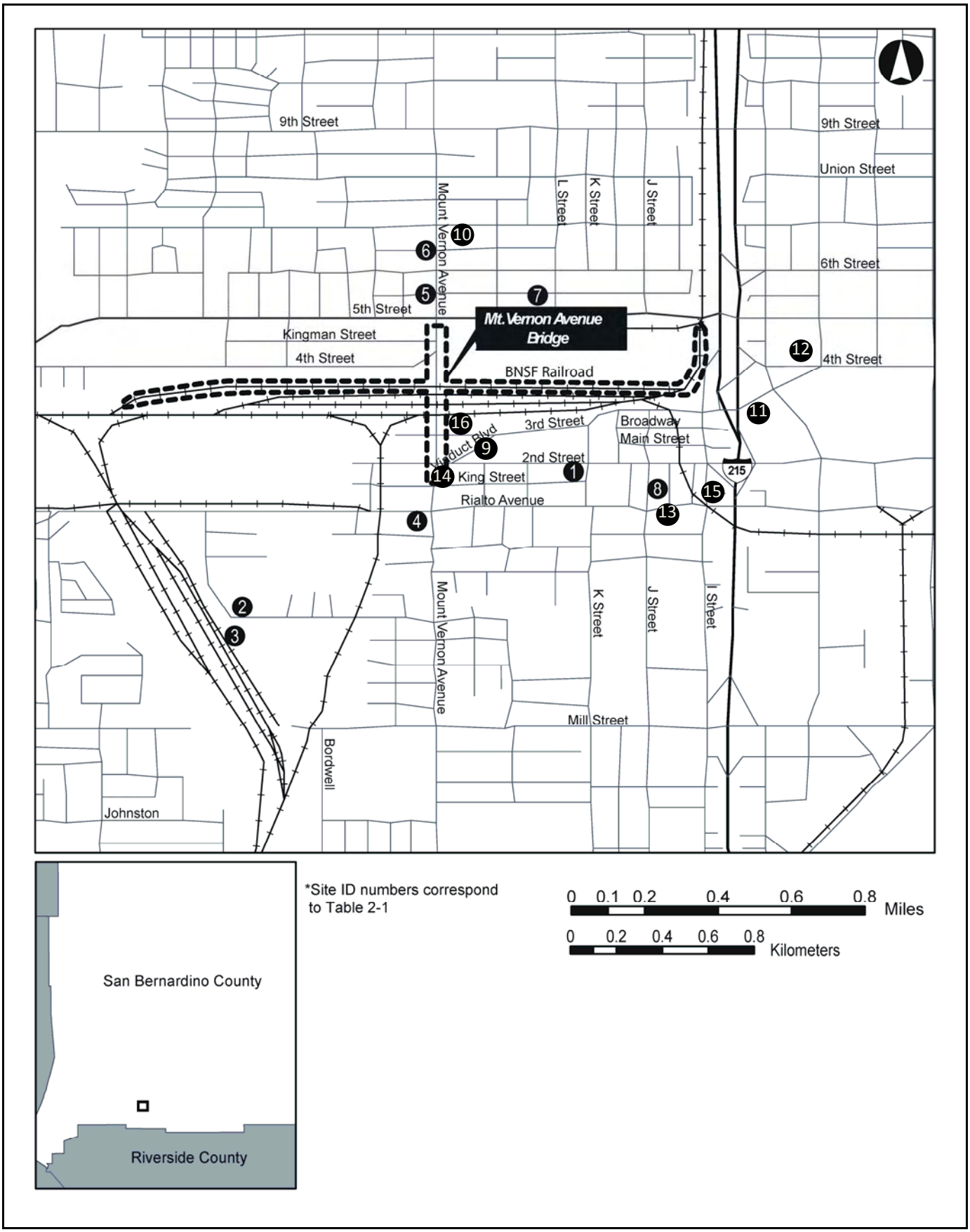


**SOURCES:** Finding of Effect for the Metrolink Parking Structure Project (2009)
City of San Bernardino Capital Improvements Program 2009 / 2010
County of San Diego GIS (2010)
Billups, D. (2007)

**Figure 2-2**
**Local Development Projects Map**
**Mount Vernon Avenue Bridge Project**

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Temporary Construction Impacts. Construction of the Locally Preferred/Replacement Alternative would create temporary changes in views of the project area. Construction activities and their direct effects would be visible to local residents, businesses, and travelers on Mount Vernon Avenue and adjacent roadways in the immediate vicinity. Additionally, construction activities may result in temporary and localized effects and would have effects similar to those associated with typical construction activities throughout southern California; therefore, no effect is expected.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed, as effects are unlikely.

### 2.1.1.2 CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS

#### AFFECTED ENVIRONMENT

***City of San Bernardino General Plan***

As mentioned earlier, the City of San Bernardino General Plan was updated in 2005. The area surrounding the project site is located in an area with seven individual land use designations: 1) Industrial Heavy (IH) (0.75 floor area ratio); 2) Industrial Light (IL) (0.75 floor area ratio); 3) Commercial Office (CO) (1.0 floor area ratio); 4) General Commercial 1 (CG-1) (0.7 floor area ratio); 5) General Commercial 2 (GC-2) (1.0 floor area ratio); and 6) Residential Suburban (RS) (4.5 dwelling units per acre [7,200 square feet minimum lot size]). Existing development in the project area is generally consistent with the associated designations. The following General Plan policies and goals apply to the Mount Vernon Avenue Bridge Project:

- Land Use Element Policy 2.2.5 - Establish and maintain an ongoing liaison with the Department, the railroads, and other agencies to help minimize impacts and improve aesthetics of their facilities and operations; including possible noise walls, berms, limitation on hours and types of operations, landscaped setbacks and decorative walls along its periphery.
- Land Use Element Policy 2.3.6 - Circulation system improvements shall continue to be pursued that facilitate connectivity across freeway and rail corridors.
- Land Use Element Policy 2.3.7 - Improvements shall be made to transportation corridors that promote physical connectivity and reflect consistently high aesthetic values.
- Land Use Element Goal 2.7 - Provide for the development and maintenance of public infrastructure and services to support existing and future residents, businesses, recreation, and other uses.
- Land Use Element Policy 2.8.1 - Ensure that all structures comply with seismic safety provisions and building codes.

#### *Paseo Las Placitas Specific Plan (Also known as the Mount Vernon Corridor Specific Plan)*

There are eight approved specific plans governing land use development in designated areas throughout the City (City of San Bernardino, 2005). The northern portion of the project site is located in the Paseo Las Placitas Specific Plan. The intended use of this designation is to provide incentives and policies to help the businesses in the area become more economically viable and to improve the aesthetics of the street (City of San Bernardino, 2005). Policies established for the Paseo Las Placitas Specific Plan do not specifically address the Mount Vernon Avenue Bridge Project.

#### *Mount Vernon Corridor Redevelopment Plan*

The City has a comprehensive and diverse redevelopment program currently containing ten redevelopment project areas (City of San Bernardino, 2005). The project site is within the Mount Vernon Corridor Redevelopment Plan. The renovation of Mount Vernon Avenue Bridge is identified as a future development project for this area (City of San Bernardino, 2005).

#### *City of San Bernardino General Plan Circulation Element*

The City's General Plan Circulation Element designates Mount Vernon Avenue as a Major Arterial. These roadways can accommodate six or eight travel lanes, may have raised medians, and can carry high traffic volumes. These roadways are the primary thoroughfares linking San Bernardino with adjacent cities and the regional highway system (City of San Bernardino, 2005). Policies in the Circulation Element do not specifically address the Mount Vernon Avenue Bridge Project.

#### *City of San Bernardino Zoning*

The City's zoning map corresponds with the General Plan designations. One or more of the zoning districts established in the City's Development Code corresponds to each of the General Plan Land Use Designations. The following zoning designations can be found in the project study area: Industrial Light (IL), Industrial Heavy (IH), Commercial Office (CO) (1.0 floor area ratio); 4) General Commercial 1 (CG-1) 5) General Commercial 2 (GC-2); and 6) Residential Suburban (RS).

#### *Southern California Association of Governments (SCAG)*

The Southern California Association of Governments (SCAG) is the metropolitan planning organization (MPO) for all or portions of the following six counties in southern California: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. SCAG is mandated by the federal government to research and draw plans for transportation, growth management, hazardous waste management, and air quality. Additional mandates exist at the state level.

Among SCAG's activities is the maintenance of a continuous, comprehensive, and coordinated planning process resulting in a Regional Transportation Plan (RTP).

2008 Regional Transportation Plan (RTP)**.** The RTP is a long-term (minimum of 20 years) vision document that outlines transportation goals, objectives, and policies for the SCAG region. Every two years, SCAG revises the RTP with updated information and new environmental clearance. The 2008 RTP, *Making the Connections*, was adopted on May 8, 2008, and given a federal conformity determination on June 5, 2008. The update reflects population, housing, employment, environmental, land-use forecasts, and technology changes. This regional planning document is required by a number of state and federal mandates and requirements, which include the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Intermodal Surface Transportation Efficiency Act of 1991, the federal Clean Air Act (CAA), and the California Clean Air Act.

Regional Transportation Improvement Program (RTIP)**.** The RTIP is a capital listing of transportation projects proposed over a 6-year period. The RTIP must include all transportation projects that require federal funding as well as all regionally significant transportation projects for which federal approval (by FHWA or the Federal Transit Administration [FTA]) is required, regardless of funding source. The RTIP projects are consistent with the final 2008 RTP. All projects included in the RTIP (and in the State Transportation Improvement Program) are reviewed for conformity with air quality plans. The public hearing for the 2008 RTIP was held on June 12, 2008 (with additional meetings scheduled on June 19, 2008 and June 25, 2008). Public review of the RTIP ended on July 7, 2008. Subsequent federal approval of the 2008 RTIP was provided in November 2008.

The Mount Vernon Avenue Bridge Project is listed in the 2008 RTIP under project number ID SBD31905. The project is described in the RTIP as "Mt. Vernon Avenue Bridge (Overhead) at BNSF replace grade separation, replace 4 lane bridge with 4 lane bridge from 2nd to 5$^{th}$ Streets (0.2 Miles south of Rte. 66) (Bridge No 54C0066)."

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal

of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

The elimination of the crossing would severely disrupt the local and regional circulation system resulting in inconsistencies with local and regional plans and policies which identify Mount Vernon as a Major Arterial with a crossing at this location.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related inconsistencies with local and regional plans and policies would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Retrofit/rehabilitation of the Mount Vernon Avenue Bridge is not specifically identified in any of the applicable land use plans or policies; however, the renovation of the bridge has been identified as a future development project in the Mount Vernon Corridor Redevelopment Plan. Policies within the General Plan cite the safe and efficient movement of traffic as an important community objective. This alternative would not address that goal since it would not provide a safe and reliable bridge structure with a normal useful service life, and would therefore be inconsistent with the local plans and policies.

Temporary Construction Impacts. The Retrofit/Rehabilitation Alternative would not result in changes in land use during construction; effects to land use are unlikely.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Replacement of the Mount Vernon Avenue Bridge is not specifically identified in any of the applicable land use plans or policies; however, the renovation of the bridge has been identified as a future development project in the Mount Vernon Corridor Redevelopment Plan. Policies within the General Plan cite the safe and efficient movement of traffic as an important community objective. Since this alternative is intended to address that

goal by providing a safe and reliable bridge structure for a normal useful service life, it would be considered consistent with the local plans and policies.

Additionally, the Locally Preferred/Replacement Alternative would not negatively affect the implementation of the Paseo Las Placitas redevelopment plan. The Locally Preferred/Replacement Alternative is identified as project number ID SBD31905 under the 2008 RTIP listing of transportation projects as project identification number SBD31905 and RTIP identification number SBD3 1905. The project is consistent with the City's General Plan Circulation Element, which depicts Mount Vernon Road as a Major Arterial. The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

Temporary Construction Impacts. The Locally Preferred/Replacement Alternative would not result in changes in land use during construction; effects to land use are unlikely.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed because effects are unlikely.

### 2.1.1.3 PARKS AND RECREATIONAL FACILITIES

#### AFFECTED ENVIRONMENT

##### *City of San Bernardino Policies, Standards, and Ordinances*

The City utilizes a park acreage standard of 5 acres per 1,000 residents (City of San Bernardino, 2005). Based on the City's standard, 1,596.2 acres of total parkland are necessary to satisfy the projected population at buildout (City of San Bernardino, 2005).

Mount Vernon Avenue is designated as a Local Multi-Purpose Trail in the City's Recreation and Trails Element's Trail System Map. These trails serve pedestrian, bicycle, and in some cases equestrian users, and provide connections within San Bernardino itself (City of San Bernardino, 2005). The Parks, Recreation, and Trails Element includes the following policies of specific relevance to the Mount Vernon Avenue Bridge Project:

- Policy 8.3.4 - All new developments on designated routes, as shown on Figure PRT-2 of the Parks, Recreation and Trails Element, shall provide bicycle and pedestrian routes linked to adjacent facilities.
- Policy 8.3.5 - Provide routes accessible for disabled persons that link public facilities and commercial areas to residential neighborhoods.
- Policy 8.3.8 - Install sidewalks and wheelchair ramps in existing neighborhoods.

- Policy 8.3.10 - Provide clear separation of hikers, joggers, and equestrians where possible.
- Policy 8.3.12 - Incorporate the following features in multi-purpose trails, bike routes, and pedestrian paths:
    a. Special paving or markings at intersections;
    b. Clear and unobstructed signing and trail/lane markings;
    c. Improved signal phasing;
    d. Vehicular turning restrictions at intersections;
    e. Hearing impaired cross walk signals;
    f. Trees to provide shade;
    g. Safe and well lighted rest areas; and
    h. Coordinated street furniture including signs, trash receptacles, newspaper stands, and drinking fountains.

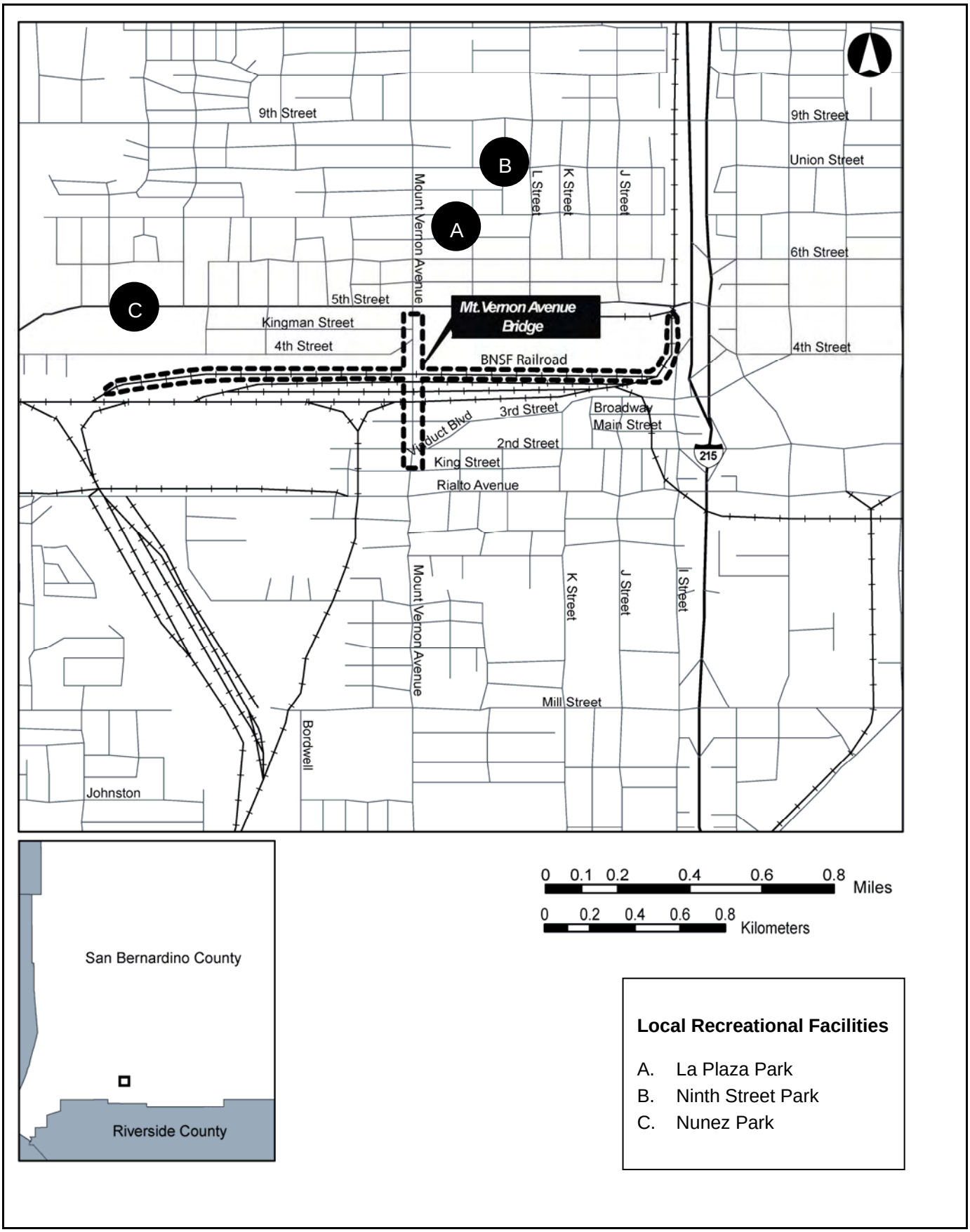
#### *Local Recreational Facilities*

As of 2005, there were approximately 52 developed parks and recreational facilities in the City, including 19 neighborhood, 10 community, 17 mini, and three regional parks, as well as three special facilities (community buildings and senior centers). The parks contain a broad range of facilities; including children's play equipment, tennis and volleyball courts, and athletic fields. There are also individual regional facilities such as the Shandin Hills Golf Course, Arrowhead Country Club, San Bernardino Golf Club, and the Western Regional Little League Headquarters/Complex. The nearest parks to the project site are:

- La Plaza Park located at 685 Mount Vernon Avenue, approximately 0.40 km (0.25 mile) north of the project site (Site A);
- Ninth Street Park located at 2931 Garner, approximately 0.77 km (0.48 mile) north of the project site (Site B); and
- Nunez Park located at 1717 West 5th Street, approximately 0.83 km (0.51 mile) west of the project site (Site C).

These local recreational facilities are identified as Sites A through C on Figure 2-3.

There are no existing bicycle facilities or trails located within or adjacent to the project area. However, there is an existing proposal for a Local Multi-Purpose Trail on Mount Vernon Avenue, both on the bridge and the adjacent northern and southern segments of Mount Vernon Avenue (November 2005 City of San Bernardino General Plan, Page 8-13). Currently there is no existing trail that is officially designated on Mount Vernon Avenue Bridge, nor the adjacent




**SOURCE**: 2004 San Bernardino County Street Guide and Directory (Thomas Brothers, 2003).

**Figure 2-3**
**Local Recreational Facilities Map**
**Mount Vernon Avenue Bridge Project**

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northern and southern segments of Mount Vernon Avenue; however, due to the possibility for a future trail, the project would accommodate any future bicycle trail

Refer to Appendix A, Programmatic Section 4(f) Evaluation, for a discussion of both recreational and non-recreational Section 4(f) resources.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

The elimination of the crossing would interfere with access to parks and recreational facilities.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on parks and recreational facilities would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, the proposed sidewalks on the bridge would not meet the Americans with Disabilities Act (ADA) slope requirements following the retrofit/rehabilitation which would be inconsistent with Policies 8.3.5 and 8.3.8 of the City's Parks, Recreation and Trails Element. There are no bike lanes, trails, or recreational facilities that would be affected by the project. Because this alternative would result in a rehabilitated bridge with the same traffic capacity as currently exists for the existing Mount Vernon Avenue Bridge, it would not directly or indirectly induce growth beyond that which is anticipated in the applicable regional and local plans. No new or expanded parks, community facilities, or services would be required.

Temporary Construction Impacts. Under the Retrofit/Rehabilitation Alternative, there are no existing bike lanes, trails, or recreational facilities that would be affected by the project.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Locally Preferred/Replacement Alternative would provide sidewalks on each side of the new bridge that would be 1.5 m (5 feet) wide and would meet ADA requirements for sidewalk width and slopes, which would address Policy 8.3.5 and Policy 8.3.8 of the City's Parks, Recreation and Trails Element. There are no existing bike lanes, trails, or recreational facilities that would be affected by the project. Because this alternative would replace the existing Mount Vernon Avenue Bridge with a new bridge with the same traffic capacity as currently exists, it would not directly or indirectly induce growth beyond that which is anticipated in the applicable regional and local plans. No new or expanded parks, community facilities, or services would be required. Although there are currently no existing trails on Mount Vernon Avenue Bridge, the replacement bridge would be wide enough to accommodate any future bike lanes to be consistent with the Local Multi-Purpose Trail designation of the City's Conceptual Trail System Map. No effects to pedestrians and bicyclists would occur.

Temporary Construction Impacts. Under the Locally Preferred/Replacement Alternative, there are no existing bike lanes, trails, or recreational facilities that would be affected by the project.

#### *Avoidance, Minimization, and/or Mitigation Measures*

No avoidance, minimization, and/or mitigation measures are proposed because effects are unlikely.

### 2.1.2 Growth

The information contained in this section was primarily taken from the *Community Impact Assessment* (CIA) (ICF International, 2010b) prepared for the Mount Vernon Avenue Bridge Project.

#### REGULATORY SETTING

Under NEPA, a federal agency must evaluate the direct and indirect effects of a proposed action. Indirect effects are those that are caused by the proposed action but will occur later in time or further removed in distance, but are still reasonably foreseeable. Indirect effects may include "growth inducing effects" and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on environmental resources. CEQ NEPA regulations, 40 CFR 1508.8, define indirect effects including those that are growth related.

#### AFFECTED ENVIRONMENT

According to demographic data in the SCAG 2008 RTP and associated growth forecasts, San Bernardino County grew by 19% between 2000 and 2007 and increased its population by about 325,000, based on a 2000 population of 1,718,311 for San Bernardino County. The population of the County in 2035 is projected to be 3,134,000, an increase of about 82% from 1,718,311 in year 2000. The number of households in the County is projected to be 973,000 in 2035, an increase of about 83% from 530,498 in year 2000. The population for the City in 2035 is projected to be 385,772, an increase of about 43% from 265,514 in year 2000. The number of households in the City is projected to be 78,620 in 2035, an increase of about 40% from 56,341 in year 2000.

Per the SCAG 2008 RTP, this growth forecast is a future snapshot of the most likely population. It reflects historical trends, based on reasonable key technical assumptions and existing and newly approved local or regional projects. This growth forecast considers the current demographic and economic trends, the latest land use changes, newly approved regionally significant projects, general plan or specific plan update, and/or zoning revisions.

#### ENVIRONMENTAL CONSEQUENCES

***Alternative 1, No Build Alternative***

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal

of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

While the mobility of populations in the vicinity of the project area would be affected, unplanned growth due to the elimination of the crossing would not be likely. Growth in the County and City is anticipated to occur in accordance with SCAG's projections. An affect to these estimates is unlikely.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, it is unlikely that the project would result in either temporary or construction-related unplanned growth.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. As part of the Retrofit/Rehabilitation Alternative, widening to the west of the bridge would occur and effects would be similar to those described under Alternative 3.

Temporary Construction Impacts. Under the Retrofit/Rehabilitation Alternative, growth effects are unlikely since project construction will not cause an increase in population.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Locally Preferred/Replacement intends to provide general and emergency access to areas along Mount Vernon Avenue. This alternative would require only four partial acquisitions from residential properties, with no displacement of any residents. Therefore, since the total number of housing units in the study area would not be affected by this alternative, no change in the demographic characteristics of the area could be reasonably expected to occur as a result of this alternative. Following implementation of the project, the pattern and rate of population and housing growth would be expected to remain consistent with that which is anticipated by existing plans for the area. Growth is not anticipated as a result of the project because the project will maintain the same number of through lanes and similar circulation patterns; the project will result in a four-lane bridge similar to the existing four-lane

bridge. Furthermore, no new or expanded infrastructure, housing, or other similar permanent physical changes to the environment would be necessary as an indirect consequence of the proposed action.

Temporary Construction Impacts. Under the Locally Preferred/Replacement Alternative, growth effects are unlikely since project construction will not cause an increase in population.

***First-Cut Screening Analysis – Alternative 2 and Alternative 3***

The first-cut screening analysis for the Build Alternatives is presented in this section.

Accessibility - To what extent would change in accessibility affect growth or land use change (its location, rate, type, or amount)? The Build Alternatives involve rehabilitation or replacement of an existing bridge and roadway in order to address safety issues and achieve compliance with current bridge and roadway standards. The proposed improvements would not provide new roads in an area not previously served by roads or improve accessibility to and from areas previously not accessible by roads. The project would not permanently result in substantial changes in accessibility, neither in location, rate, type nor amount. The service road to southwest end of the bridge will be closed, resulting in a change in access from the east side to the west side of five residential properties; however, this change in access will not affect growth or land us patterns.

To what extent would travel times, travel cost, or accessibility to employment, shopping, or other destinations be changed? The project does not increase capacity of Mount Vernon Avenue Bridge. A change effecting travel times, cost, accessibility to employment/shopping/other destinations is unlikely.

Would this change affect travel behavior, trip patterns, or the attractiveness of some areas to development over others? A change to travel times, cost, accessibility to employment/shopping/ other destinations is unlikely; therefore, a change affecting travel behavior, patterns or attractiveness is unlikely. Travel behavior would remain unchanged.

Resources of Concern/Land Use - To what extent would resources of concern be affected by this growth or land use change? Growth and/or land use change is unlikely. The area adjoining the Mount Vernon Avenue Bridge Project is designated as industrial, commercial, and residential in the City's general plan. Historically, the area has been used for transportation or rail. Given that the area is largely built out, it is unlikely that additional residential uses would be located in this area in the future. Access to neighboring commercial and industrial land uses in the area would not change such as a result of the proposed improvements. Resources of concern can be identified as wetlands, vernal pools, threatened/endangered species, prime farmland,

wildlife/waterfowl refuges protected under Section 4(f) and recreational areas protected under Section 4(f), etc. The potential for effects on resources of concern as a result of project-related growth is low.

First-Cut Screening Analysis Determination. Given this first-cut screening, it is determined that growth resulting from the Mount Vernon Avenue Bridge Project is not foreseeable. Therefore, a growth-related analysis is not warranted for the project. With or without the project it is reasonably foreseeable that the growth rate would be consistent existing projections; no growth is forecasted for the project area as a result of approved developments.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed because effects are unlikely.

### 2.1.3 Community Impacts

The information contained in this section was primarily taken from the *Community Impact Assessment* (ICF International, 2010b) prepared for the Mount Vernon Avenue Bridge Project.

#### 2.1.3.1 COMMUNITY CHARACTER AND COHESION

#### REGULATORY SETTING

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

#### AFFECTED ENVIRONMENT

A Community Impact Assessment Report (ICF International, 2010b) was prepared for the Mount Vernon Avenue Bridge Project and was used in the preparation of this section.

Within the CIA, a land use study area was defined to include the community within about a 0.8-km (0.50-mile) radius of the Mount Vernon Avenue Bridge. The study area is intended to encompass an area where the potential land use effects, if any, from construction and operation of the Mount Vernon Avenue Bridge Project would be reasonably foreseeable. The study area is highly developed with commercial and residential uses, as well as transportation uses associated with the nearby BNSF railroad facility and Metrolink/Amtrak station. Residential neighborhoods are located in the northwest portion of the study area along with the southwest

portion of the study area, along the service road on the southwest end of the bridge between West 2nd and West 3rd Streets

Certain characteristics of the residential neighborhoods and commercial centers located near the project site, including their apparent longevity, physical and spatial attributes, and demographic profile, are indicative of an established cohesive community. Most homes in this area are more than 30 years old, which suggests that some aspects of cohesiveness and neighborhood character have developed over time among long-term residents. In addition, the residential areas are relatively dense and are surrounded by commercial properties or roadways, thereby contributing to a sense of community through spatial proximity. Finally, the demographic data for the area in which the project is located show substantial proportions of minority and/or low-income persons. It can reasonably be assumed that many residents of this area fall within one or both of these groups. To the extent that demographic and physical characteristics have enabled a shared sense of stability to develop, some degree of community cohesion likely exists in this neighborhood.

#### *Race/Ethnicity*

Within the immediate vicinity of the project site, Hispanic/Latino populations compose the largest group at 62.6%, 89.6% and 81.4% for census tracts 43, 48 and 49, respectively. Black/African American populations also represent 24.5%, 5.7% and 6.4% of these census tracts. The remaining population is composed of White, Two or More Races, Asian and Native Hawaiian/Pacific Islander.

#### *Age*

Of those residing within the immediate vicinity of the project site, 52.4%, 51.3%, and 54.8% of the population is between the age of 18 and 65 for census tracks 43, 48 and 49, respectively. Individuals under the age of 18 compose 35.5%, 41.3%, and 40.1% within these census tracts. Individuals over the age of 65 compose approximately 10% or less of each of these census tracts.

#### *Occupancy/Tenure*

Residences in the immediate vicinity of the project site are primarily single family homes; however, 7.0%, 7.9%, and 25.0% of the homes in census tracts 43, 48, and 49, are multi-family structures, respectively. Property ownership is indicative of housing tenure and 69.5%, 44.6% and 44.0% of the residences in these census tracts, respectively, are owner-occupied.

The assessment of whether, and to what extent, the Mount Vernon Avenue Bridge Project would affect the cohesiveness of the adjacent community depends largely on whether an alternative would be likely to divide the community physically.

## ENVIRONMENTAL CONSEQUENCES

### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Elimination of the bridge crossing would severely disrupt the local and regional circulation system and would divide the West San Bernardino community.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on Community Character and Cohesion would occur.

### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Because the Retrofit/Rehabilitation Alternative would remain mostly within existing rights-of-way adjacent to, but not through, the nearby residential portions of the community, no physical division would be created. The community surrounding the proposed project, therefore, would be anticipated to remain intact. During construction, the bridge will be closed to pedestrian and vehicular traffic for periods of time between mid 2012 and mid 2014; however, to prevent division of the community due to the closed access, free bus passes (provided by the City) for travel on existing Omnitrans routes will provide mobility to area residents affected by the bridge closure.

Temporary Construction Impacts. The Retrofit/Rehabilitation Alternative would require only temporary construction easements located adjacent to, but not through, the nearby residential portions of the community. However, there will be a temporary impact to community cohesion due to temporary bridge closure resulting in impacts to pedestrian access across the BNSF rail yard, a decrease in intersection LOS at three intersections (5th/H, 2nd/G, and Rialto/G), and alleyway improvements resulting in impacts to secondary residential access. These impacts are discussed in detail within Section 2.1.5 (traffic).

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Locally Preferred/Replacement Alternative would remain mostly within existing rights-of-way adjacent to, but not through, the nearby residential portions of the community; therefore, no physical division would be created.

Because the Locally Preferred/Replacement Alternative would remain mostly within existing rights-of-way adjacent to, but not through, the nearby residential portions of the community, no physical division would be created. The community surrounding the proposed project, therefore, would be anticipated to remain intact. During construction, the bridge will be closed to pedestrian and vehicular traffic for periods of time between mid 2012 and mid 2014; however, to prevent division of the community due to the closed access, free bus passes (provided by the City) for travel on existing Omnitrans routes will provide mobility to area residents affected by the bridge closure.

Additionally, due to the absence of relocation effects, effects to community character and cohesion are unlikely. As verified in Section 2.1.3.2 the project itself does not require the relocation of properties.

Circulation of traffic and continued access to properties were also considered in the analysis of Community Character and Cohesion. While the service road at the southwest end of the bridge would be permanently closed, access to the four residential properties located between the closed service road (to the east of these properties) and the alleyway (to the west of these properties) would be maintained; and physical division of the community would not occur. The service road currently provides access to the four residential properties; however, under the Locally Preferred/Replacement Alternative, this road would be permanently closed and access would be re-established after widening and improvement of the alleyway adjacent to the immediate west of these residential properties. Access to the residential properties would instead be located on the western side of the residential properties adjacent to the rear yards of the properties. The permanent closure of the service road would not result in any physical division of the community and the community surrounding the proposed project would likely remain intact. Additionally, the widening and improvement of the alleyway under the Locally Preferred/Replacement

Alternative would not only maintain access to these properties, but also maintain access to the BNSF railroad facilities located along West 3rd Street.

Access to the Self Car Wash is also maintained under the Locally Preferred/Replacement Alternative. Access to the Self Car Wash currently exists via three separate driveways off of (1) the service road at the southwest end of the bridge, (2) West 2nd Street, and (3) the alleyway to the west of the properties along the service road. The driveway off of the service road that is not accessible to vehicles traveling southbound on the Mount Vernon Avenue mainline; therefore, permanent closure of the service road would not impact access to vehicles traveling southbound on the Mount Vernon Avenue (mainline). However, the driveway off of the service road at the southwest end of the bridge is accessible to vehicles traveling northbound on Mount Vernon Avenue, which take the following steps to access the Self Car Wash (1) turn left from Mount Vernon Avenue onto West 2nd Street, and (2) turn immediately right onto the service road and (3) turn immediately left to access the Self Car Wash driveway to the immediate left. These northbound vehicles also have the option of utilizing the driveway located on West 2nd Street, approximately 10 feet away from the service road driveway, which can be accessed with less effort in two steps by (1) turning left from Mount Vernon Avenue onto West 2nd Street and (2) right to access the Self Car Wash driveway on West 2nd Street to the immediate right (after bypassing the service road). Because access via the West 2nd Street driveway is the less circuitous route to the Self Car Wash, it is anticipated that drivers would have a tendency to avoid the driveway off of the service road. Therefore, permanent closure of the driveway off of the service road is not anticipated to impact entrance to the Self Car Wash.

Traffic from the Self Car Wash currently exists via the same three separate driveways off of (1) the service road at the southwest end of the bridge, (2) West 2nd Street, and (3) the alleyway to the west of the properties along the service road. Traffic utilizing the service road driveway cannot access north or southbound Mount Vernon Avenue (mainline), or eastbound West 2nd Street. The two remaining driveways off of West 2nd Street and the alleyway, however, do not have limitations to either north/southbound Mount Vernon Avenue (mainline) or east/westbound West 2nd Street. Because traffic utilizing the service road driveway from the Self Car Wash can only turn right to proceed westbound onto West 2nd Street, it is anticipated that this is the least likely exit route that vehicles would utilize; therefore, permanent closure of the driveway off of the service road is not anticipated to impact traffic flow coming from the Self Car Wash.

The project does not require full acquisition nor encourage growth; therefore, it would not result in redistribution of the population or an influx or loss of population. Additionally, because only one of the four residential properties adjacent to the service road appears to be occupied:

- community cohesion would not be present,
- interaction among persons and/or groups within a community would not be affected,
- social values of a community would not change,
- landmarks and social gathering places shared by a community do not exist, and
- people would not be separated or set apart from others.

It is unlikely that the project would have an effect to any of these social considerations.

Although the bridge would shift to the west, and closer to these residential properties, quality of life may be improved due to a combination of the following factors:

- the closure of the service road, and
- the potential for the project to utilize only half of the approximately 25-foot width of the service road, thereby maintaining and potentially improving pedestrian access.

Shadows resulting from the project were also considered in assessing the project's effect on the quality of life for the residential occupants. Shadows from the bridge are the most prominent at points where the bridge is at its highest elevation. Near these four residential properties and adjacent to the service road, the height of the bridge substantially decreases to join existing Mount Vernon Avenue to the south. Due to the decrease in bridge elevation at this location, it is unlikely that shadows created from the westerly shift in the bridge alignment will extend beyond the existing service road's edge of pavement.

Assuming future/continued residential occupancy of properties along the service road, an alleyway in the southwest portion of the project area will also be improved. The alleyway would be upgraded to "Access Roadway" standards, providing a travelled way of 26 feet (curb-to-curb) consisting of two un-striped 13-foot wide lanes (beyond 10-foot standard lanes). The road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access and residents who live adjacent to the road would be primary users of the road. An additional two-foot easement beyond both westerly and easterly curbs will provide room for placement of future utilities, and maintenance of the roadway itself; however, this area does not provide room for new parking spaces for vehicles nor new sidewalks. Although the road will not include formal sidewalks, pedestrian use of this road would not be prohibited.

It is likely that improvements to the alleyway will occur within approximately 64 working days (approximately three months) and will include the following efforts:

- Remove existing facilities (the alley itself, trees, fences, small secondary structures bordering the alley, and vacuums at the self service car wash)
- Grade the new roadway subgrade,
- Place and compact base material, and
- Pave roadway.

Replacement and/or relocation of the removed facilities may extend beyond the 64 day timeframe based on further coordination with property owners. In accordance with the Uniform Relocation Assistance Act (discussed further in Section 2.1.3.2), potential replacement facilities such as fences and secondary structures would be determined during the right-of-way acquisition process in coordination with affected property owners.

The "alleyway" would be designed to roadway standards and all existing and future structures along this existing roadway should be designed to meet roadway setback requirements. Vehicular access is currently provided from both the front (east/service road) and rear (west/alleyway) sides of the properties. Vehicular access to the properties would be formally moved from the front to the rear of the properties only; however, in the rear yards, there are two potential vehicle garages (in construction), along with one additional (currently existing) vehicle storage area. As evidenced by these vehicular storage structures located in the rear yards of the residential properties, it is apparent that the rear yard currently serves as the primary vehicular access point for these properties. Closing the service road to the front yard is therefore not anticipated to substantially affect access to the residential structure. In addition to the vehicular structures located in the rear yards, the front yards of the residential properties do not have existing driveways for which vehicles can access the vehicular structures located on the opposite side of the property. Closure of the service road and improvement of the westerly alleyway would improve access to the vehicular structures of the residential properties and it is likely that neither the façade of the homes would have to be relocated to the west side of the residential structure, nor the physical movement (or realignment) of the residential structure would be warranted. Furthermore, although the existing service road would be closed, there is a potential for the project to use only half of the width of the existing service road. The remaining width and the sidewalk would likely be maintained for pedestrian access to the properties at this location, maintaining the property owner's ability to greet visitors or guests through the front of their properties. It is likely that vehicular access will only be provided on the west side (alleyway) of the property instead of both the east (service road) and west sides.

Temporary Construction Impacts. The Locally Preferred/Replacement Alternative would remain within existing rights-of-way and only temporary construction easements are required adjacent to, but not through, the nearby residential portions of the community. However, there will be a temporary impact to community cohesion due to temporary bridge closure resulting in impacts to

pedestrian access across the BNSF rail yard, a decrease in intersection LOS at three intersections (5th/H, 2nd/G, and Rialto/G), and alleyway improvements resulting in impacts to secondary residential access. These impacts are discussed in detail within Section 2.1.5 (traffic).

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Because the build alternatives would not cause a physical division and the community surrounding the Mount Vernon Avenue Bridge Project are likely remain intact, measures to avoid, minimize and/or mitigate effects are not required. Destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services is not anticipated.

Although bridge closure will result in a temporary impact to community cohesion, free bus passes would be provided by the City of San Bernardino as part of Measure TR-2 (discussed in further detail in Section 2.1.5) to maintain mobility to individuals (including both pedestrians and cyclists) affected by the bridge closure.

### 2.1.3.2 RELOCATIONS AND REAL PROPERTY ACQUISITIONS

The information contained in this section was primarily taken from the *Community Impact Assessment* (ICF International, 2010b) prepared for the Mount Vernon Avenue Bridge Project.

#### REGULATORY SETTING

The Department's 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 Code of Federal Regulations (CFR) Part 24. The purpose of 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 C 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 USC 2000d, et seq.). Please see Appendix B for a copy of the Department's Title VI Policy Statement.

#### AFFECTED ENVIRONMENT

The study area is highly developed with commercial and residential uses, as well as transportation uses associated with the nearby BNSF railroad facility and Metrolink/Amtrak station. Residential neighborhoods are located at both the northwest and the southwest end of the study area. The neighborhood to the southwest also borders the service road at the southwest end of the bridge between West 2nd and West 3rd Streets.

Commercial establishments in the project area are dominated by automobile-related businesses, such as auto repair shops and parts retailers. Other prominent commercial operations include bars/restaurants, ethnic food markets, discount stores, and service-oriented businesses such as hair salons, shoe repair shops, and video rental establishments. To the north of the railway yard is Anita's Mexican Food Corporation, which manufactures Mexican food products. Located at the south end of the bridge, at the northwest and southwest corner of Mount Vernon Avenue and 2nd Street, are a car wash at 202 North Mount Vernon Avenue and a tire service retailer, respectively. The majority of the commercial establishments are neighborhood-level retailers. The residential properties surrounding the project are almost entirely single-family structures, located primarily along Rialto Avenue, with very few multi-family units.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

While the mobility of populations in the vicinity of the project area would be affected, relocations due to the elimination of the crossing would not be likely.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, no acquisition or displacement would be necessary and neither temporary nor construction-related relocation would occur.

***Alternative 2, Retrofit/Rehabilitation Alternative***

Permanent Impacts. While the Retrofit/Rehabilitation Alternative involves permanent closure of the service road on the southwest end of the bridge along with widening and improvement of the alleyway, this alternative would not entail any full or partial acquisition or displacement because the retrofit/rehabilitation activities would be constructed within existing rights-of-way.

Temporary Construction Impacts. Temporary construction easements would be acquired to accommodate construction activities along Mount Vernon Avenue near West 5th Street. These easements would only be necessary during project construction, would require only a portion of the property without build structures, and would therefore not create a substantial interference with the functionality of the affected properties during project construction. Figure 2-4 illustrates temporary construction easements associated with project construction.

***Alternative 3, Locally Preferred/Replacement Alternative***

Permanent Impacts. Property acquisitions associated with the Locally Preferred/Replacement Alternative are shown in Table 2-2. The locations of affected properties are further illustrated in Figure 2-4 (Location of Partial Property Acquisition and Temporary Construction Easements).

**Table 2-2. Property Acquisition**

| APN | Address | Land Use | Full/Partial Acquisition |
|---|---|---|---|
| 138-251-04 | N. Mount Vernon Avenue | Residential | Partial |
| 138-251-05 | N. Mount Vernon Avenue | Residential | Partial |
| 138-251-06 | N. Mount Vernon Avenue | Residential | Partial |
| 138-251-07 | N. Mount Vernon Avenue | Residential | Partial |
| 138-251-08 | N. Mount Vernon Avenue | Commercial – car wash | Partial |
| 138-251-09 | | | |
| Various | Various | Various | Temporary construction easements |
| Source: Preliminary Design Plans (LAN Engineering, 2009). | | | |

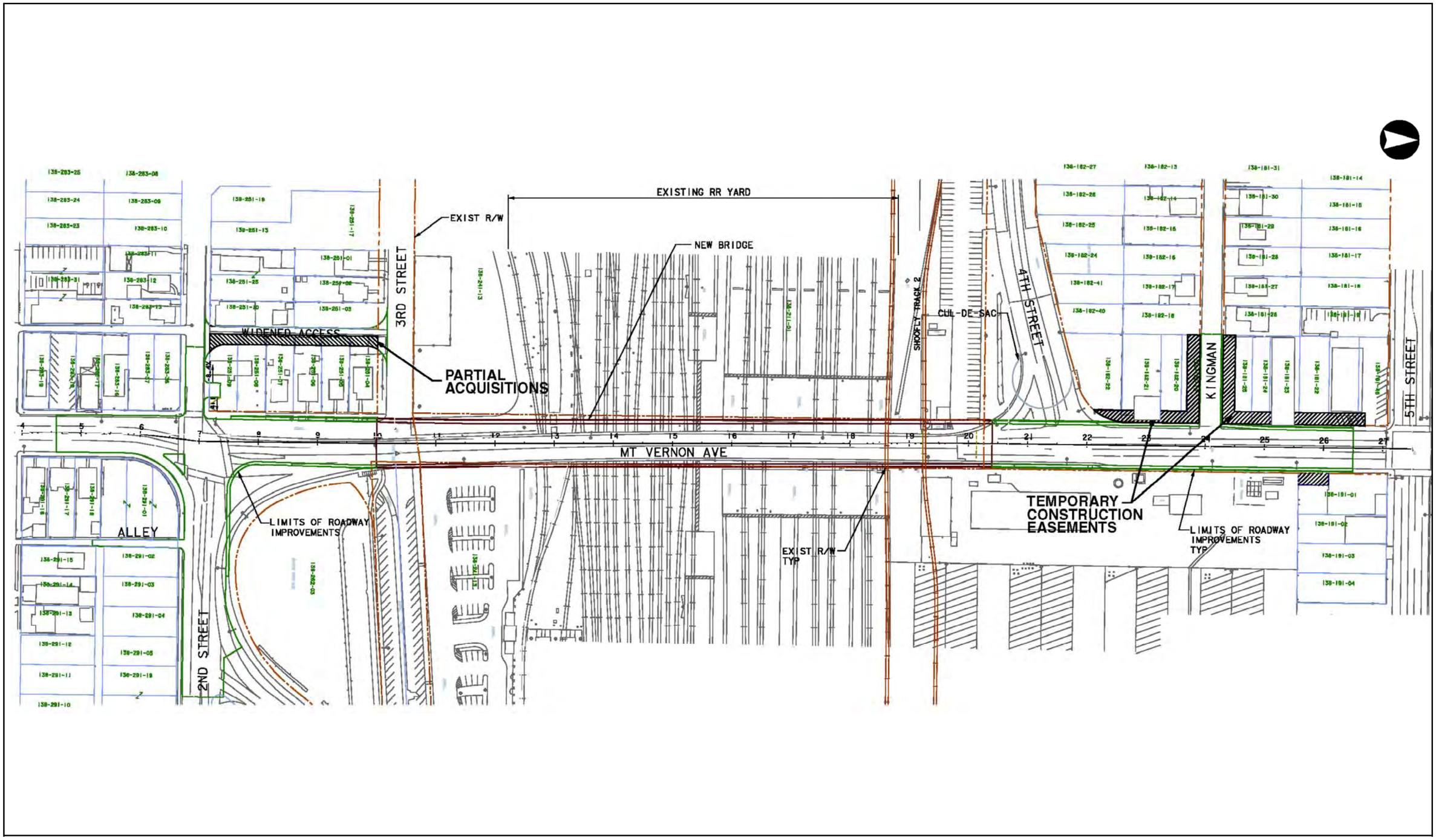
*Residential Acquisition and Displacement*. The Locally Preferred/Replacement Alternative would not require full acquisition of residential property. Partial acquisition of four residential properties located towards the southwest end of the bridge would be necessary. These properties are specifically located between the service road at the southwest end of the bridge and the alleyway to the immediate west of these properties. Current access to these properties is provided by the service road at the southwest end of the bridge; however, the Locally

Preferred/Replacement Alternative would result in permanent closure of this service road and access would be maintained and re-established with the widening and improvement of the alleyway adjacent to the immediate west of the properties between 2nd Street and 3rd Street. The widening and improvement would require partial acquisition of the rear yards of these residential properties.

There are residential structures on three of the four affected residential properties. These three properties appear to consist of one existing residential structure (habitable/occupied), one recently renovated structure for sale (habitable/not occupied), and one structure currently in renovation for future sale (habitable once renovations are complete/not occupied), all with entrances facing the permanently closed service road. The fourth property is a vacant lot, zoned for residential use, but without any existing residential structures. The partial acquisition of four residential properties would not result in an effect; and, effects of acquisition are offset because access to several homes and railroad facilities along West 3rd Street would be preserved along with the access to the four properties. Three of the four residential parcels are developed with residential structures. Acquisition on the vacant lot would be minimal, and therefore the future development on the vacant parcel would not be compromised. Additionally, the partial acquisitions would not affect any primary structures. However, rear yards, rear yard fences, and secondary structures on two of the four of the properties would be affected. Furthermore, the secondary structures could be reconfigured and then could be built within the affected properties.

In accordance with the Uniform Relocation Assistance Act, potential replacement of fences and secondary structures would be determined during the right-of-way acquisition process in coordination with affected property owners. It should be noted that all existing and future structures along this existing roadway should be designed to meet roadway setback requirements.

In accordance with the Uniform Act, compensation for partial acquisition would be provided to eligible recipients. The Uniform Act provides for fair and equitable treatment of persons whose property would be acquired as a result of federally funded projects. The programs and assistance provided under the Uniform Act would be available to all eligible recipients without discrimination. For partial acquisition, compensation would be provided to eligible recipients for the portion of the property acquired. Additional compensation may be provided for any demonstrated damage to the remainder property. If it is determined that the remainder property would have little or no value or utility (i.e., an uneconomic remnant), then the property owner would have the option of either accepting full purchase of the remnant or keeping it. Compensation for partial acquisition would be provided to eligible recipients in accordance with the Uniform Act.




**SOURCE**: Preliminary Design Plans (LAN Engineering, 2009)

**Figure 2-4**
**Location of Partial Property Acquisitions and Temporary Construction Easements Map**
**Mount Vernon Avenue Bridge Project**

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It is likely each property would retain value, utility and functionality as a residence and potential development of the vacant property would not be limited; therefore, residential displacement would not occur. Given that partial acquisition does not affect the primary structures of these properties and the absence of full acquisition in general, relocation of residential property would not occur.

Additionally, the widening and improvement of the alleyway under the Locally Preferred/ Replacement Alternative would not only maintain access to these homes, but also the railroad facilities located along West 3rd Street.

*Non-Residential Acquisition and Displacement*. The Locally Preferred/Replacement Alternative would not require full acquisition of non-residential property. Partial acquisition of a non-residential (commercial) Self Car Wash property located at the northwest corner of West 2nd Street and the service road would be necessary to widen the alleyway immediately to the west, between 2nd Street and 3rd Street. Primary structures of this property would not be affected; however, secondary structures consisting of four vehicular vacuum facilities would be affected along with a portion of the parking area. Nevertheless, it is likely that the car wash could remain operable since the vacuum facilities can be relocated further to the east; therefore business displacement would not occur. Additionally, there are four parking spaces associated with the four vacuum facilities. These parking spaces can be replaced alongside the relocated vacuum facilities; therefore no loss in parking spaces would occur. Given that partial acquisition does not affect the primary structure of the property and the absence of full acquisition in general, it is likely that the car wash would retain value, utility and functionality and relocation of non-residential property would not occur.

In accordance with the Uniform Act, compensation for partial acquisition would be provided to eligible recipients. The Uniform Act provides for fair and equitable treatment of persons whose property would be acquired as a result of federally funded projects. The programs and assistance provided under the Uniform Act shall be available to all eligible recipients without discrimination. For partial acquisition, compensation would be provided to eligible recipients for the portion of the property acquired. Additional compensation may be provided for any demonstrated damage to the remainder property. If it is determined that the remainder property would have little or no value or utility (i.e., an uneconomic remnant), then the property owner would have the option of either accepting full purchase of the remnant or keeping it.

Temporary Construction Impacts. An encroachment permit would be required from CPUC and BNSF for construction activities above the rail yard. Temporary construction easements would be acquired to accommodate construction activities along Mount Vernon Avenue near West 5th Street.

These temporary construction easements would not substantially interfere with the temporary use of these properties for the following reasons:

- As shown in Figure 2-4, there are only three built structures in the immediate vicinity of the temporary construction easements towards the north end of the project area.
- For the northernmost structure (parcel 138-181-22), the required easement can be easily accommodated without effecting the structure.
- For the northern structure of El Patio Hotel (parcel 138-181-23), a temporary construction easement would be required which will only include twelve inches of private property to the immediate west of the sidewalk located within public street right-of-way. It should be noted that the distance between the existing structure on private property and the western edge of the sidewalk on public right-of-way is 23 inches; therefore, there will be an additional 11 inches of property between the existing structure and the temporary construction easement. (*This temporary construction easement is required for construction of a short retaining wall and temporary formwork associated with a slight change in roadway elevation of approximately 2 feet at this location.*)
- For the southernmost structure of El Patio Hotel (parcel 138-182-21), a temporary construction easement would be required which will only include a maximum of four feet of private property to the immediate west of the sidewalk located within public street right-of-way. It should be noted that the distance between the existing structure on private property and the western edge of the sidewalk on public right-of-way is 4.72 feet.
- A temporary construction easement is required for construction of a retaining wall and temporary formwork associated with a change in roadway elevation of approximately 9.87 feet at this location. The temporary construction easement would only require the first 4 feet, maximum, beyond the propos19571ed retaining wall within public right-of-way and adjacent to the sidewalk. Only the sidewalk (public street right-of-way) and the additional 4 feet which would be utilized to the east of the structure.

Since the temporary construction easements would not conflict with existing structures, would not interfere with the properties, and would be necessary only during project construction, relocation effects are unlikely.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

- **R-1:** In accordance with the federal Uniform Act, compensation for partial acquisition will be provided to eligible recipients. The Uniform Act provides for fair and equitable

treatment of persons whose property will be acquired as a result of federally funded projects. The programs and assistance provided under the Uniform Act will be available to all eligible recipients without discrimination. For partial acquisition, compensation will be provided to eligible recipients for the portion of the property acquired. Additional compensation may be provided for any demonstrated damage to the remainder property. If it is determined that the remainder property will have little or no value or utility (i.e., an uneconomic remnant), then the property owner will have the option of either accepting full purchase of the remnant or keeping it.

- **R-2:** An encroachment permit application will be submitted to the CPUC and BNSF during PS&E final design.

#### 2.1.3.3 ENVIRONMENTAL JUSTICE

The information contained in this section was primarily taken from the *Community Impact Assessment* (ICF International, 2010b) prepared for the proposed project.

##### REGULATORY SETTING

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For year 2009, this was $22,050, for a family of four, respectively.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's 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 B of this document.

##### AFFECTED ENVIRONMENT

To determine the income and poverty characteristics for the study area, data were obtained from the 2000 U.S. Census at the census-tract level. These data indicate that per capita incomes for the study area population were for the most part lower than in either the County or City of San Bernardino. In two of the three census tracts surrounding the proposed project (Tracts 48 and 49), per capita incomes were about 40 to 50% lower than in the region, at $7,729 and $8,344 per year, respectively. Figure 2-5 identifies census tracks in the vicinity of the Mount Vernon Avenue Bridge Project.

Data on the numbers of persons below the poverty threshold in the study area are similarly indicative of a disadvantaged population. Two of the three census tracts comprising the study area had proportions of persons below the poverty threshold that were greater than the proportions reported for either the County or City of San Bernardino (see Table 2-3: Existing Regional and Local Population Characteristics—Income/Poverty [2000]).

### Table 2-3a. Existing Regional and Local Population Characteristics (2000) (Demographics)

**Age**

| Area | Total Population | Age: Under 18 | % | 65 and Over | % |
|---|---|---|---|---|---|
| County of San Bernardino | 1,709,434 | 552,047 | 32.3% | 146,459 | 8.6% |
| City of San Bernardino | 185,401 | 65,180 | 35.2% | 15,266 | 8.2% |
| City of Colton | 47,662 | 16,655 | 34.9% | 3,053 | 6.4% |
| *Study Area*[1] | 18,065 | 6,899 | 38.2% | 1,566 | 8.7% |
| Census Tract 43 | 8,313 | 2,955 | 35.5% | 1,003 | 12.1% |
| Census Tract 48 | 2,945 | 1,215 | 41.3% | 2,18 | 7.4% |
| Census Tract 49 | 6,807 | 2,729 | 40.1% | 345 | 5.1% |

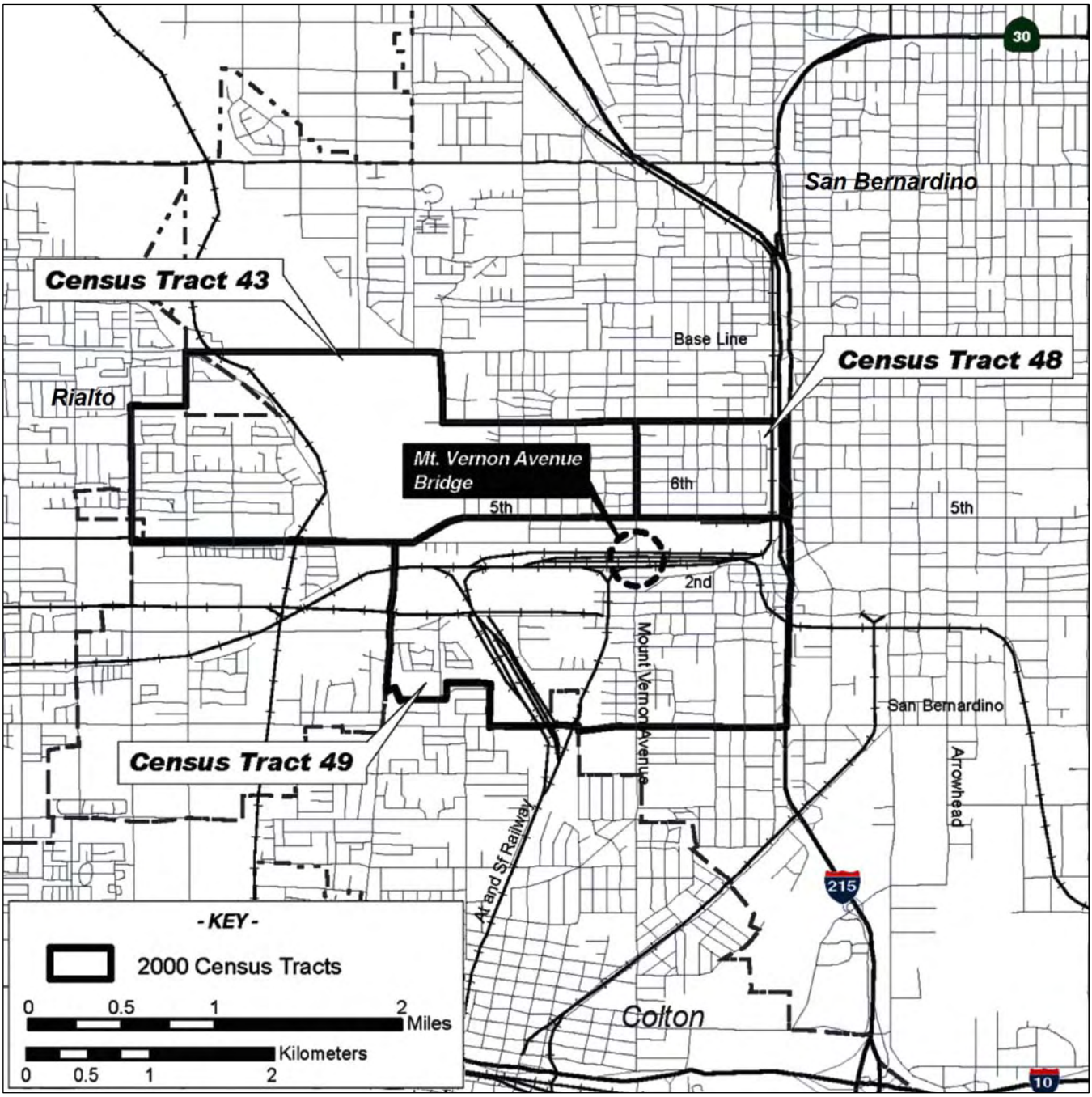
**Race/Ethnicity**

| Area | White | % | Hisp./ Latino | % | Black/ African Amer. | % | Native Amer./ Alaska Native | % | Asian | % | Native Hawaiian /Pacific Islander | % | Two or More Races | % | Other | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County of San Bernardino | 752,222 | 44.0% | 669,387 | 39.2% | 150,201 | 8.8% | 9,804 | 0.6% | 78,154 | 4.6% | 4,387 | 0.3% | 42,240 | 2.5% | 3,039 | 0.2% |
| City of San Bernardino | 53,630 | 28.9% | 88,022 | 47.5% | 29,654 | 16.0% | 1,129 | 0.6% | 7,594 | 4.1% | 582 | 0.3% | 4,502 | 2.4% | 288 | 0.2% |
| City of Colton | 9,911 | 20.8% | 28,934 | 60.7% | 5,031 | 10.6% | 224 | 0.5% | 2,474 | 5.2% | 69 | 0.1% | 950 | 2.0% | 69 | 0.1% |
| *Study Area*[1] | 1,530 | 8.5% | 13,385 | 74.1% | 2,645 | 14.6% | 68 | 0.4% | 147 | 0.8% | 37 | 0.2% | 250 | 1.4% | 3 | 0.0% |
| Census Tract 43 | 793 | 9.5% | 5,203 | 62.6% | 2,038 | 24.5% | 27 | 0.3% | 84 | 1.0% | 24 | 0.3% | 142 | 1.7% | 2 | 0.0% |
| Census Tract 48 | 94 | 3.2% | 2,639 | 89.6% | 168 | 5.7% | 16 | 0.5% | 2 | 0.1% | 0 | 0.0% | 26 | 0.9% | 0 | 0.0% |
| Census Tract 49 | 643 | 9.4% | 5,543 | 81.4% | 439 | 6.4% | 25 | 0.4% | 61 | 0.9% | 13 | 0.%2 | 82 | 1.2% | 1 | 0.0% |

**SOURCE:** U.S. Census Bureau, Census of Population and Housing, Summary File 3 (2000).

**NOTE:** [1]The study area consists of the three census tracts adjacent to the project.

The percentage of minorities for the combined population of the three census tracts in the project study area was 91.5%, which was higher than the minority percentages for both the City (71.1%) and the County (56%) in 2000. The three census tracts consist of a predominantly Hispanic/Latino population (62.6%, 89.6%, and 81.4% in Census Tracts 43, 48, and 49, respectively; the percentage of the Hispanic/Latino population in the three census tracts, combined, was 74.1%), based on 2000 U.S. Census data. Of the minority group populations, the Hispanic/Latino population was the largest group in the study area (74.1%), compared to 47.5% for the City and 39.2% for the County.




**SOURCE**: Census of Population and Housing (U.S. Census Bureau, 2000)

**Figure 2-5**
**Census Tracts**
**Mount Vernon Avenue Bridge Project**

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The population of the project study area is characterized by substantial proportions of both minority and/or low-income persons (i.e., 91.5% minority, 31.1% below federal poverty threshold, and per capita incomes 40 to 50% lower than in the surrounding city and county). Other indicators of a disadvantaged community also appear in the data (e.g., more renter-occupied housing and greater housing density as measured by persons per household). In addition, given the relatively large proportions of minority and/or low-income persons reported in the demographic data for all three census tracts in the project study area, these populations are in readily identifiable groups rather than dispersed in pockets throughout the greater area. These indicators demonstrate that community encompassing the project area satisfies the criteria which necessitate an environmental justice analysis.

## Table 2-3b. Existing Regional and Local Population Characteristics (2000) (Housing)

| Housing Type | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Area** | **Total Units[2]** | **Single Family** | **%** | **Multi Family** | **%** | **Other[3]** | **%** |
| County of San Bernardino | 601,369 | 442,954 | 73.7% | 116,581 | 19.4% | 41,834 | 7.0% |
| City of San Bernardino | 63,414 | 40,007 | 63.1% | 18,935 | 29.9% | 4,472 | 7.1% |
| City of Colton | 15,787 | 9,765 | 61.9% | 5,201 | 32.9% | 821 | 5.2% |
| *Study Area[1]* | 5,310 | 4,121 | 77.6% | 745 | 14.0% | 444 | 8.4% |
| Census Tract 43 | 2,370 | 1,998 | 84.3% | 167 | 7.0% | 205 | 8.6% |
| Census Tract 48 | 919 | 837 | 91.1% | 73 | 7.9% | 9 | 1.0% |
| Census Tract 49 | 2,021 | 1,286 | 63.6% | 505 | 25.0% | 230 | 11.4% |

| Housing Occupancy | | | | | |
|---|---|---|---|---|---|
| **Area** | **Occupied** | **%** | **Vacant** | **%** | **Persons Per Household** |
| County of San Bernardino | 528,594 | 87.9% | 72,775 | 12.1% | 3.2 |
| City of San Bernardino | 56,330 | 88.7% | 7,205 | 11.3% | 3.2 |
| City of Colton | 14,520 | 92.6% | 1,160 | 7.4% | 3.3 |
| *Study Area[1]* | 4,608 | 87.1% | 680 | 12.9% | 3.4 |
| Census Tract 43 | 2,169 | 91.5% | 201 | 8.5% | 3.7 |
| Census Tract 48 | 753 | 83.9% | 144 | 16.1% | 3.9 |
| Census Tract 49 | 1,686 | 83.4% | 335 | 16.6% | 4.0 |

| Housing Tenure | | | | | |
|---|---|---|---|---|---|
| **Area** | **Occupied Units** | **Owner Occupied** | **%** | **Renter Occupied** | **%** |
| County of San Bernardino | 528,594 | 340,933 | 64.5% | 187,661 | 35.5% |
| City of San Bernardino | 56,330 | 29,536 | 52.4% | 26,794 | 47.6% |
| City of Colton | 14,520 | 7,545 | 52.0% | 6,975 | 48.0% |
| *Study Area[1]* | 4,608 | 2,586 | 56.1% | 2,022 | 43.9% |
| Census Tract 43 | 2,169 | 1,508 | 69.5% | 661 | 30.5% |
| Census Tract 48 | 753 | 336 | 44.6% | 417 | 55.4% |
| Census Tract 49 | 1,686 | 742 | 44.0% | 944 | 56.0% |

**SOURCE:** U.S. Census Bureau, Census of Population and Housing, Summary File 3 (2000).

**NOTES:** [1]The study area consists of the three census tracts adjacent to the project.
[2]Total housing units for this data set are from Summary File 3, which uses a population sample. Thus, the total units shown here do not correspond to the total units reported in the Summary File 1 data sets.
[3]"Other" units include mobile homes, recreational vehicles, vans, campers, tents, etc.

## Table 2-3c. Existing Regional and Local Population Characteristics (2000) (Economics)

| Income/Poverty | | | | |
|---|---|---|---|---|
| **Area** | **Total Population** | **Per Capita Income** | **Persons Below Poverty Threshold** | **%[2]** |
| County of San Bernardino | 1,709,434 | $16,856 | 263,412 | 15.8% |
| City of San Bernardino | 185,401 | $12,925 | 49,691 | 27.6% |
| City of Colton | 47,662 | $13,460 | 9,343 | 19.6% |
| *Study Area*[1] | 18,065 | $9,279 | 5,586 | 31.1% |
| Census Tract 43 | 8,313 | $11,765 | 1,933 | 23.5% |
| Census Tract 48 | 2,945 | $7,729 | 1,081 | 36.7% |
| Census Tract 49 | 6,807 | $8,344 | 2,572 | 38.0% |

| Economic Statistics - County | | | | |
|---|---|---|---|---|
| **Business Type** | **Number of Businesses** | **Sales or Receipts ($1,000)** | **Annual Payroll ($1,000)** | **Number of Employees** |
| Wholesale Trade | 2,083 | 21,191,081 | 1,135,951 | 31,605 |
| Retail Trade | 4,439 | 15,969,020 | 1,555,857 | 66,929 |
| Information | 385 | N/A | 368,571 | 8777 |
| Real Estate, Rental, & Leasing | 1,240 | 1,089,434 | 203,114 | 7224 |
| Professional, Scientific, & Technical Services | 1,991 | 1,366,756 | 473,587 | 13,194 |
| Administrative & Support & Waste Management & Remediation Services | 1,415 | 1,857,171 | 853,037 | 38,468 |
| Educational Service | 223 | 140,493 | 48,353 | 2075 |
| Health Care & Social Assistance | 2,993 | 5,654,081 | 2,123,797 | 61,474 |
| Arts, Entertainment, & Recreation | 276 | 658,323 | 126,572 | 8537 |
| Accommodation & Food Service | 2,528 | 1,841,198 | 506,888 | 43,578 |
| Other Services (except Public Administration) | 2,181 | 1,235,150 | 410,592 | 17,352 |

| Economic Statistics - City | | | | |
|---|---|---|---|---|
| **Business Type** | **Number of Businesses** | **Sales or Receipts ($1,000)** | **Annual Payroll ($1,000)** | **Number of Employees** |
| Wholesale Trade | 175 | N/A | N/A | N/A |
| Retail Trade | 589 | 2,483,481 | 226,468 | 8,996 |
| Information | 48 | N/A | 42,410 | 1,028 |
| Real Estate, Rental, & Leasing | 137 | 97,879 | 17,658 | 654 |
| Professional, Scientific, & Technical Services | 271 | 264,255 | 95,731 | 2,158 |
| Administrative & Support & Waste Management & Remediation Services | 144 | 204,590 | 97,358 | 4,680 |
| Educational Service | 30 | 17,629 | 6,530 | 250 |
| Health Care & Social Assistance | 446 | 844,521 | 297,440 | 9,089 |
| Arts, Entertainment, & Recreation | 31 | 33,903 | 9,223 | 778 |
| Accommodation & Food Service | 316 | 258,114 | 72,877 | 6,249 |
| Other Services (except Public Administration) | 255 | 129,142 | 43,265 | 2,143 |

**SOURCE:** U.S. Census Bureau, Census of Population and Housing, Summary File 3 (2000)

**NOTES:** [1] The study area consists of the three census tracts adjacent to the project.
[2] Percentages are based on total number of persons over age 16 for whom poverty status could be determined.

The project area contains higher than average concentrations of low-income and/or minority populations. The following means were utilized to make this determination:

- The US Census median income, housing and ethnic information
- Project site review to help identify low-income or minority populations not readily apparent in the census data; and
- Local newspapers and advertisements which disclose housing costs in the project vicinity.

### *ENVIRONMENTAL CONSEQUENCES*

The environmental justice analysis considers the following factors: (1) the similarity of impacts on minority and/or low-income populations as compared to the general population, (2) the generally equivalent efficacy of proposed minimization measures and project enhancements, and (3) the off-setting benefits of the transportation facility.

#### *Alternative 1, No Build Alternative*

Permanent Impacts. The No Build Alternative would not result in disproportionately high and adverse impacts on low-income or minority populations. Under this alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Both low income/minority local travelers, as well as general population (non-low-income/non-minority) inter-community and inter-regional travelers would all be disrupted by the elimination of the bridge crossing; therefore, these impacts are not disproportionately high and adverse

because (1) the community, in general, would be similarly affected, (2) the effects are not more severe when comparing with non-low-income and non-minority populations and (3) the impacts are similar on minority and/or low-income populations as compared to the general population.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, there would be no disproportionately high temporary or construction-related effects on low-income or minority populations.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Refer to the discussion for Alternative 3.

Temporary Construction Impacts. Refer to the discussion for Alternative 3.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts.

*Adverse Effects to General Population*: Technical studies have been conducted in order to determine whether the proposed project alternatives would have any adverse effects on all segments of the general population, including minority and low-income population groups. The technical studies addressing hazardous waste/materials and noise/vibration indicate that no significant adverse effects are expected as a result of the Retrofit/Rehabilitation Alternative and/or the Replacement Alternative. However, the technical studies addressing hazardous waste/materials and noise/vibration indicate that some potential effects are expected. The technical studies addressing cultural resources indicate that an adverse effect is expected as a result of the Retrofit/Rehabilitation Alternative and/or the Replacement Alternative. The impacts identified in these technical reports and the measures to avoid or reduce them can be summarized as follows:

- Noise and Vibration: Refer to “Temporary Construction Impacts,” below.
- Hazardous Materials: Refer to “Temporary Construction Impacts,” below.
- Cultural Resources: The two build alternatives would either substantially modify (Retrofit/Rehabilitation Alternative) or demolish (Replacement Alternative) the existing Mount Vernon Avenue Bridge, which has been determined to be eligible for listing on the National Register of Historic Places. The loss of this resource this would be considered an adverse effect that could not be fully mitigated.
- Refer to “Temporary Construction Impacts” for a discussion of temporary and short-term elimination of the bridge crossing during project construction.

*Disproportionately High and Adverse Effects to Minority and Low-Income Populations*: Taking into consideration the minimization measures that have been recommended in the technical

studies, the impact avoidance and minimization efforts that have occurred during the project planning and development process, and the potential benefits that would accrue to the community, environmental justice considerations require an assessment of whether the effects of the project on minority and low-income groups could be considered disproportionately high and adverse.

*Efficacy of Minimization Efforts – Unavoidable Adverse Effects*: Of the effects identified thus far in the technical studies, only one (i.e., substantial modification or demolition of the historic bridge) could not be satisfactorily mitigated. All other effects could be avoided or substantially minimized.

*Other Measures to Minimize Adverse Effects*: As part of the project planning and development process that has occurred over a period of almost 10 years, efforts have been taken to avoid or minimize impacts to the surrounding community that could result from a bridge reconstruction project. Most notably, it was the likelihood of potentially severe community impacts (i.e., substantial property acquisitions and displacements) that led to the withdrawal of several alternative alignments from further consideration.

*Project Benefits*: Implementation of the proposed project unquestionably would have offsetting benefits that would accrue to the community. Residents, businesses, and visitors would be afforded a safer and more reliable bridge. A critical link in the local and regional circulation system would be restored and would potentially assist in stimulating social and economic redevelopment projects proposed for the community.

*Potential Disproportionately High and Adverse Effects*: The determination of whether or not the effects of the proposed project are disproportionately high and adverse depends on whether (1) the effects of the project are predominately borne by a minority or low-income population or (2) the effects of the project are appreciably more severe or greater in magnitude to minority or low-income populations compared to the effects on non-minority or non-low-income populations (see *FHWA Western Resource Center Interim Guidance – Addressing Environmental Justice in the EA/EIS* [1999]).

Although the effects of the project would occur within an area having a population that is both minority and low-income, these effects cannot reasonably be considered disproportionately high and adverse under the circumstances. All three census tracts in the project study area are composed of substantial proportions of minority and low-income populations. The proportion of these groups, however, is not determinative of whether there is a disproportionately high and adverse effect.

Instead, it is more appropriate to conclude that, even though these groups could potentially bear a large part of the burden associated with the proposed project, the community in general would be

similarly affected. Refer to "Temporary Construction Impacts," below, for a discussion of short-term construction activities.

The potential effects resulting from the proposed project would not be appreciably more severe or greater in magnitude on minority or low-income populations than they would be on the population as a whole. As noted above, all but one of the potential effects identified in the technical studies could be satisfactorily avoided or minimized through the implementation of minimization measures. Because there has been no evidence to suggest that the efficacy of these measures would differ with respect to different population groups, the net result would be the same for all population groups for these resource areas. The adverse effect that has been identified as unavoidable even after implementation of minimization measures would also not be appreciably more severe or greater in magnitude on minority or low-income populations.

As is detailed more fully below, the City has instituted public involvement and community outreach efforts to ensure that issues of concern or controversy to minority and low-income populations are identified and addressed where practicable as part of the project planning and development process and the environmental process.

*Community Outreach and Public Involvement*: Efforts would continue to be made to ensure meaningful opportunities for public participation during the project planning and development process. This may include, but not necessarily be limited to, additional community meetings, informational mailings, a project web site, and news releases to local media. The community outreach and public involvement programs for the project would seek to actively and effectively engage the affected community and would include mechanisms to reduce cultural, language, and economic barriers to participation.

The proposed project should also comply with applicable federal requirements promulgated in accordance with Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000), which requires that federal programs and activities be accessible to persons with limited English language proficiency.

The proposed project would be developed in accordance with Title VI of the Civil Rights Act of 1964, which provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. In addition, the project would be developed in conformance with related statutes and regulations mandating that no person in the State of California shall, on grounds of race, color, sex, age, national origin, or disabling condition, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by or on the behalf of the California State Department of Transportation.

*Environmental Justice Discussion Points*

Based on the following environmental justice discussion points and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice.

Does the project area contain higher than average concentrations of traditionally under-served groups when compared to the area surrounding the project area or the city or county as a whole? For purposes of environmental justice, under-served groups are considered minority and low-income groups; and minority is further defined as persons belonging to one or more of the following groups: (1) Black (2) Hispanic (3) Asian American (4) American Indian and Alaskan Native or (5) Native Hawaiian or Other Pacific Islander.

Table 2-3a (Existing Regional and Local Population Characteristics – Race/Ethnicity) compares County and City minority groups to project area census tracks. Census tracks within the study area have relatively large proportions of minority persons since the following census track percentages exceed County and City averages of 39% Hispanic/Latino (County), 8.8% Black/African American (County), 47.5% Hispanic/Latino (City):

- Tract 43: 62.6% Hispanic/Latino, 24.5% Black/African American
- Tract 48: 89.6% Hispanic/Latino
- Tract 49: 81.4% Hispanic/Latino

Low-income is defined based on the Department of Health and Human Services poverty guidelines. Table 2-3c (Existing Regional and Local Population Characteristics – Income/Poverty) shows percentages of persons below the poverty threshold and compares County and City averages with project area census track averages. Census tracks within the study area have relatively large proportions of low-income persons since the per capita income of the following census tracks exceed the County and City averages of 15.8% and 27.8%, respectively.

- Tract 43: 23.5% (exceeds County percentage)
- Tract 48: 36.7% (exceeds County and City percentages)
- Tract 49: 38.0% (exceeds County and City percentages)

Median income information also helps to show low-income populations. Table 2-3c also compares County and City per capita income to project area census track per capita income. Census tracks within the study area have relatively large proportions of low-income persons since the following per capita income of the following census tracks are below the County and City averages of $16,856 and $12,926, respectively.

- Tract 43: $11,765 (below County and City averages)
- Tract 48: $7,729 (below County and City averages)
- Tract 49: $8,344 (below County and City averages)

Minority and low-income groups are not dispersed throughout the greater area; thus, the project area contains higher than average concentrations of traditionally under-served groups when compared to the area surrounding the project area or the city or county as a whole.

Does the project area have a history of other projects or actions that may have had disproportionately high or adverse impacts on the local residents?
Table 2-1 shows local development projects in the jurisdiction of the City of San Bernardino. It is possible that a portion of these projects have had impacts on local residents; however, it is anticipated that the majority of these impacts would be temporary and occur during project construction only. A history of disproportionately high or adverse impacts on the local residents is therefore unlikely.

Are the areas in which these populations are located subject to disproportionate impacts?
Although the effects of the project would occur within an area having a population that is both minority and low-income, these effects cannot reasonably be considered disproportionately high and adverse under the circumstances. All three census tracts in the project study area are composed of substantial proportions of minority and low-income populations. The proportion of these groups, however, is not determinative of whether there is a disproportionately high and adverse effect. Instead, it is more appropriate to conclude that, even though these groups could potentially bear a large part of the burden associated with the proposed project, primarily due to their proximity to short-term construction activities, the community in general would be similarly affected. The bridge is an important part of both the local and regional circulation system. Consequently, local motorists and pedestrians from the immediate project area, as well as those traveling to and from the project area from elsewhere, would all be inconvenienced by traffic delays and other disruptions during the project construction period.

This analysis takes into consideration the minimization measures that have been recommended in the technical studies, the impact avoidance and minimization efforts that have occurred during the project planning and development process, and the potential benefits that would accrue to the community.

Will the proposed project increase traffic in low-income and minority neighborhoods? If so, will the increase be greater than in non-minority or non low-income neighborhoods?
The proposed project build alternatives do not include capacity enhancement for the bridge's travelled lanes; therefore, a permanent increase in traffic would not occur. Without implementation of either build alternative, temporary shoring would be removed in accordance with an agreement between the City and BNSF, and the bridge would be closed. The elimination of the bridge crossing would severely disrupt the regional and local circulation system.

Will minority owned businesses that serve a minority or low-income population be impacted by the project?

Minority owned businesses that serve a minority or low-income population will not be impacted by the project. Although a portion of the parking area and part of a vacuum facility would be acquired from a car wash at the northwest corner of Mount Vernon Avenue and West 2nd Street, it is anticipated that the car wash could remain operable even with the loss of parking area and relocation of the vacuum facility.

Will access from minority or low-income neighborhoods to various services or cultural destinations (church, parks, community center) be affected by the proposed project?

Table 2-4 (discussed further in the following Section 2.1.4) provides a list of "Study Area Community Facilities and Services." Without implementation of either build alternative, temporary shoring would be removed in accordance with an agreement between the City and BNSF, and the bridge would be closed. The elimination of the bridge crossing would severely disrupt access to community facilities and services. With implementation of either build alternative, access from minority or low-income neighborhoods to various services or cultural destinations would not be permanently affected by the proposed project.

Will the project require displacement of any minority or low-income residences? If so, are they disproportionate?

The project does not require displacement of any minority or low-income residences.

Will the project result in proportional change of minority or low-income household in the area that will have access to transit services reduced?

Transit services will not be permanently reduced as part of project implementation.

Are the benefits associated with the project equitable for all segments of society?

The purpose of the proposed project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards. All segments of society receive this project benefit equally, either through continued regional circulation, or through continued local circulation and access to community facilities/services for minority and low-income persons within the project area.

Have all groups within the project area been involved in the decision-making or project information process through an effective and thorough public participation effort?

The Public Information Meeting / Open House for the Mount Vernon Avenue Bridge Project was held on Wednesday, July 21, 2004, from 6:00 p.m. to 9:00 p.m., in the Community Room at the historic Santa Fe Depot, 1170 West 3rd Street, San Bernardino, California. The meeting location is adjacent to the existing Mount Vernon Avenue Bridge. Facilities at the meeting location

satisfy the accessibility requirements of the American with Disabilities Act (ADA) for persons with disabilities. Public bus and rail transit are available to and from the meeting location, along with parking facilities for private vehicles and bicycles.

Project team members prepared a bilingual English-Spanish "Notice of a Public Meeting" and "Comment Card" for distribution to the project area community. A mailing list of public agency representatives was compiled in coordination with City staff. For the general public mailing list, 2,249 residential and commercial mailing addresses were identified in an area encompassing about a ½-mile radius around the proposed project site. A commercial direct mail organization printed, collated, posted, and mailed the meeting notices on Tuesday, July 13, 2004. City staff placed notices of the meeting in local newspapers (San Bernardino Sun and La Opinion) for publication on July 18 and 20, 2004. In addition to the mailings and newspaper notices, City staff coordinated with Mayor Judith Valles and City Councilmember Esther Estrada to inform local community members of the meeting. Councilmember Estrada personally contacted numerous persons and businesses in the vicinity of the proposed project site.

*Determination*

Given the results of technical studies concluded thus far, and taking into consideration the following: (1) the similarity of impacts to minority and low-income populations as compared to the general population, (2) the generally equivalent efficacy of proposed minimization measures and project enhancements, and (3) the off-setting benefits of the transportation facility, a disproportionately high and adverse effect on minority and/or low-income population groups would not result from either the Retrofit/Rehabilitation Alternative or the Replacement Alternative.

Temporary Construction Impacts.

*Adverse Effects to General Population*: The technical studies addressing hazardous waste/materials and noise/vibration indicate that no significant adverse effects are expected as a result of the Retrofit/Rehabilitation Alternative and/or the Replacement Alternative. However, the technical studies addressing hazardous waste/materials and noise/vibration indicate that some potential effects are expected. The technical studies addressing cultural resources indicate that an adverse effect is expected as a result of the Retrofit/Rehabilitation Alternative and/or the Replacement Alternative. The impacts identified in these technical reports and the measures to avoid or reduce them can be summarized as follows:

- Noise and Vibration: Construction of either the Retrofit/Rehabilitation Alternative or the Replacement Alternative would generate short-term noise at nearby sensitive receptors from the use of pile drivers. Minimization measures would be available (i.e., use of non-

impact pile drivers and/or temporary sound barriers) to avoid or reduce this temporary construction noise. This effect is not considered a significant adverse effect.

- Hazardous Materials: Soil and groundwater in various portions of the BNSF railroad facility surrounding the project site have been identified as contaminated and have been the subject of remediation efforts. Although most affected areas are outside the immediate project area, standard practices could be employed to ensure that any materials that might be encountered during project construction would be handled and disposed without any residual effect from the proposed project. Due to these minimization measures, this effect is not considered a significant adverse effect.

  The existing bridge contains lead-based paint and may also have asbestos-containing materials. Treatment and disposal measures have been identified that would avoid any effects from exposure of these materials during construction of the proposed project. Due to these minimization measures, this effect is not considered a significant adverse effect.

- Cultural Resources: Refer to "Permanent Impacts," above.

Temporary and short-term elimination of the bridge crossing during project construction, as needed, resulting in traffic delays would severely disrupt the local and regional circulation system. However, since the bridge is an important part of both the local and regional circulation system, local motorists and pedestrians from the immediate project area, as well as those traveling to and from the project area from elsewhere, would all be inconvenienced by traffic delays and other disruptions during the project construction period.

Impacts discussed in this Environmental Assessment are avoided or substantially minimized; however, for all other impacts: (1) the community, in general, would be similarly affected, (2) the effects of the project are not more severe when comparing with non-low-income and non-minority populations and (3) the impacts are similar on minority and/or low-income populations as compared to the general population.

*Disproportionately High and Adverse Effects to Minority and Low-Income Populations*: Taking into consideration the minimization measures that have been recommended in the technical studies, the impact avoidance and minimization efforts that have occurred during the project planning and development process, and the potential benefits that would accrue to the community, environmental justice considerations require an assessment of whether the effects of the project on minority and low-income groups could be considered disproportionately high and adverse.

*Efficacy of Minimization Efforts – Unavoidable Adverse Effects*: Of the effects identified thus far in the technical studies, only one (i.e., substantial modification or demolition of the historic bridge) could not be satisfactorily mitigated. All other effects could be avoided or substantially minimized.

*Other Measures to Minimize Adverse Effects*: As part of the project planning and development process that has occurred over a period of almost 10 years, efforts have been taken to avoid or minimize impacts to the surrounding community that could result from a bridge reconstruction project. Most notably, it was the likelihood of potentially severe community impacts (i.e., substantial property acquisitions and displacements) that led to the withdrawal of several alternative alignments from further consideration.

*Project Benefits*: Implementation of the proposed project unquestionably would have offsetting benefits that would accrue to the community. Residents, businesses, and visitors would be afforded a safer and more reliable bridge. A critical link in the local and regional circulation system would be restored and would potentially assist in stimulating social and economic redevelopment projects proposed for the community.

*Potential Disproportionately High and Adverse Effects*: The determination of whether or not the effects of the proposed project are disproportionately high and adverse depends on whether (1) the effects of the project are predominately borne by a minority or low-income population or (2) the effects of the project are appreciably more severe or greater in magnitude to minority or low-income populations compared to the effects on non-minority or non-low-income populations (see *FHWA Western Resource Center Interim Guidance – Addressing Environmental Justice in the EA/EIS* [1999]).

Although the effects of the project would occur within an area having a population that is both minority and low-income, these effects cannot reasonably be considered disproportionately high and adverse under the circumstances. All three census tracts in the project study area are composed of substantial proportions of minority and low-income populations. The proportion of these groups, however, is not determinative of whether there is a disproportionately high and adverse effect.

Instead, it is more appropriate to conclude that, even though these groups could potentially bear a large part of the burden associated with the proposed project, primarily due to their proximity to short-term construction activities, the community in general would be similarly affected. The bridge is an important part of both the local and regional circulation system. Consequently, local motorists and pedestrians from the immediate project area, as well as those traveling to and from

the project area from elsewhere, would all be inconvenienced by traffic delays and other disruptions during the project construction period.

As is detailed more fully below, the City has instituted public involvement and community outreach efforts to ensure that issues of concern or controversy to minority and low-income populations are identified and addressed where practicable as part of the project planning and development process and the environmental process.

*Community Outreach and Public Involvement*: Efforts would continue to be made to ensure meaningful opportunities for public participation during the project planning and development process. This may include, but not necessarily be limited to, additional community meetings, informational mailings, a project web site, and news releases to local media. The community outreach and public involvement programs for the project would seek to actively and effectively engage the affected community and would include mechanisms to reduce cultural, language, and economic barriers to participation.

The proposed project should also comply with applicable federal requirements promulgated in accordance with Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000), which requires that federal programs and activities be accessible to persons with limited English language proficiency.

The proposed project would be developed in accordance with Title VI of the Civil Rights Act of 1964, which provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. In addition, the project would be developed in conformance with related statutes and regulations mandating that no person in the State of California shall, on grounds of race, color, sex, age, national origin, or disabling condition, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by or on the behalf of the California State Department of Transportation.

#### *Environmental Justice Discussion Points*

Based on the following applicable environmental justice discussion points and analysis, the build alternatives will not cause disproportionately high and adverse temporary effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice.

Will the proposed project increase traffic in low-income and minority neighborhoods? If so, will the increase be greater than in non-minority or non low-income neighborhoods?

During construction of build alternatives, with the recommended temporary circulation improvements identified in the Pedestrian and Vehicular Detour Analysis (Iteris, 2010), all study intersections are projected to operate at satisfactory levels of service (LOS D or better). Additionally, due the Mount Vernon Avenue "Major Arterial" general plan classification, regional traffic is anticipated to utilize Mount Vernon Avenue Bridge, in addition to local traffic. Therefore, the any temporary decrease in intersection LOS would be experienced by the general population and would not be greater in minority or low-income neighborhoods.

Will minority owned businesses that serve a minority or low-income population be impacted by the project?

The proposed project is not anticipated to result in access impacts to businesses during project construction due to the following temporary traffic improvements (Iteris, 2010):

- 5th Street / H Street: Restripe the northbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
- 5th Street / H Street: Change the phasing on the northbound and southbound approaches to split phase.
- 2nd Street / G Street: Restripe the northbound approach to add an additional left-turn lane by narrowing the lanes.
- 2nd Street / G Street: Change the northbound left-turn phasing from permitted + protected to protected.
- 2nd Street / G Street: Restripe the southbound approach as one left-turn lane, one through lane and one exclusive right-turn lane.
- 2nd Street / G Street: Add a southbound right-turn overlap phase.
- Rialto Avenue / G Street: Restripe the eastbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
- Rialto Avenue / G Street: Change the phasing on the eastbound and westbound approaches to split phase.

Will access from minority or low-income neighborhoods to various services or cultural destinations (church, parks, community center) be affected by the proposed project?

The build alternatives involve a construction period (from mid 2012 to mid 2014) during which the bridge will be closed. Since there will be no pedestrian access across the BNSF rail yard at the bridge location during project construction, an alternative, motorized means for pedestrians to travel across the rail yard during that time would be implemented to replace the pedestrian

access that will be eliminated by the closure of the bridge during construction. Free bus passes, provided by the City, for travel on existing Omnitrans routes will provide mobility to area residents affected by the bridge closure.

If large numbers of school children would need to travel from one side of the BNSF rail lines to the other during the bridge closure, then coordination would be required with the San Bernardino City Unified School District (SBCUSD) to ensure the appropriate transportation would be provided. The SBCUSD was contacted to obtain information concerning the attendance areas of the District's schools in the area. No SBCUSD schools have an attendance area that crosses the rail lines in the vicinity of the bridge. Therefore, no additional coordination is required.

<u>Will the project result in proportional change of minority or low-income household in the area that will have access to transit services reduced?</u>
During project construction, enhanced service will be provided through the provision of free bus passes, provided by the City, for travel on existing Omnitrans routes will provide mobility to area residents affected by the bridge closure.

*Determination*

Given the results of technical studies concluded thus far, and taking into consideration the following: (1) the similarity of impacts to minority and low-income populations as compared to the general population, (2) the generally equivalent efficacy of proposed minimization measures and project enhancements, and (3) the off-setting benefits of the transportation facility, a disproportionately high and adverse effect on minority and/or low-income population groups would not result from either the Retrofit/Rehabilitation Alternative or the Replacement Alternative.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Based on the above discussion and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice. No project specific avoidance, minimization, and/or mitigation measures are proposed; however, a standard measure will be applied.

- **EJ-1:** Actively and effectively engage all segments of the affected community with mechanisms to reduce cultural, language, and economic barriers to participation.

For a discussion of *measures* identified for operation effects, refer to the Avoidance, Minimization, and Mitigation Measures discussions within Section 2.1.5 (traffic), Section 2.2.5 (air quality), and Section 2.2.6 (noise).

### 2.1.4 UTILITIES/EMERGENCY SERVICES/PUBLIC SERVICES AND FACILITIES

#### AFFECTED ENVIRONMENT

The information contained in this section was primarily taken from the *Community Impact Assessment* (ICF International, 2010b) prepared for the proposed project.

##### *Utilities*

The San Bernardino Municipal Water Department (SBMWD) provides domestic water for the City and unincorporated areas of San Bernardino County as well as back-up to the City of Loma Linda (City of San Bernardino, 2005). Wastewater collection facilities in the project study area are owned and operated by the City's Public Works and Public Services Department (City of San Bernardino, 2005). Storm drain and flood control facilities in the City are administered by the City's Public Works and Public Services Departments, San Bernardino County Flood Control District, U.S. Army Corps of Engineers, and San Bernardino International Airport and Trade Center. Solid waste collected in the planning area is disposed of at landfills in Colton and Fontana (Mid-Valley Landfill) owned and operated by the County (City of San Bernardino, 2005). The Mid-Valley Landfill is projected to have approximately 40 years of capacity left (City of San Bernardino, 2005).

There are a number of utilities in the project study area that could be affected by the proposed project. Among them are:

- Southern California Edison (SCE) electric line along the west side of the bridge
- 12-inch San Bernardino Municipal Water District (SBMWD) steel water line along the west side of the bridge
- 42-inch storm drain on the east side of the bridge, extending to the BNSF rail yard
- 30-inch corrugated metal pipe (CMP) storm drain in the BNSF rail yard at the following locations (1) near southerly shoofly track 1 and (2) near W. 4$^{th}$ Street ramp to SB Mount Vernon Avenue
- two-inch gas line along the alleyway to the southwest of the bridge
- four-inch gas line along the south side of W. 4$^{th}$ Street
- eight-inch gas line along the south side of W. 4$^{th}$ Street
- two-inch water line along W. 3rd Street, west of the bridge
- eight-inch water line on the north side of W. 3rd Street, east of the bridge

This list has been generated based on the best available information at this time, and in coordination with BNSF. A formal utility search will be completed during PS&E final design for the project to more accurately depict the utilities present within the project area.

***Emergency Services***

The San Bernardino Fire Department (SBFD) operates 12 stations in the City and provides fire protection services, paramedic, and emergency medical technician (EMT) services. American Medical Response (AMR) also provides ambulance transport services. American Medical Response (AMR) provides ambulance transport services to the following area hospitals which encircle the project area at the following proximities:

- 2.2 miles northwest, Community Hospital of San Bernardino
- 4.0 miles northeast, Saint Bernardine Medical Center
- 6.4 miles northeast, Kaiser Permanente
- 6.9 miles southeast, Loma Linda University Medical Center
- 6.9 miles southeast; Loma Linda University Children's Hospital; and
- 7.4 miles southwest; County of San Bernardino Arrowhead Regional Hospital.

There are no hospitals in the immediate vicinity of the bridge which require frequent access by the outside community during bridge closure. However, in order to ensure that the community in the immediate vicinity of the bridge would not experience impeded access to the outer area hospitals, coordination with emergency services personnel to design an access management plan would ensure that hospitals within the area surrounding the project site remain accessible.

SBFD serves a resident population of approximately 200,000 and covers a service area of 59.3 miles. SBFD staffs 12 fire engine companies and two aerial truck companies housed in 12 stations in the City. The total number of emergency operations personnel is 161 divided among three platoons. Fire stations that serve the project area are listed in Table 2-4 (Study Area Community Facilities and Services). SBFD has mutual joint response agreements with the cities of Loma Linda, Colton, Rialto, and Central Valley Fire District (Station #75 in Muscoy), and the U.S. Forest Service (City of San Bernardino, 2005).

Police services are provided by the City of San Bernardino Police Department (SBPD) within the City limits, and the San Bernardino County Sheriff's Department in the unincorporated area. The City is served by a main police station and six community service offices that serve five designated geographical patrol districts. The project study area is served by the Santa Fe Depot Western District Office located at 1204 West Third Street. SBPD operates under a mutual aid agreement with police agencies in the surrounding cities. This allows use of up to 50% of adjacent agency resources upon request and for automatic response within zones of mutual aid. SBPD maintains a ratio of approximately one sworn officer for every 820 residents (City of San Bernardino, 2005). The Sheriff's Department and SBPD provide mutual backup services upon request within both the City and unincorporated areas. The California Highway Patrol in San Bernardino provides traffic patrol on state highways and also on roads within the unincorporated

## Table 2-4. Study Area Community Facilities and Services

| Type | Name | Address | Miles from Project |
|---|---|---|---|
| Fire/EMS | San Bernardino Fire Department, Station #222 | 1201 W 9th St. | 0.71 |
| Police/Sheriff | San Bernardino Police Dept. Western District (Area A) | 1574 W. Baseline St. | 0.66 |
| | Santa Fe Depot (Western District) Office | 1204 West Third Street | 0.01 |
| | San Bernardino Police Dept. Western District (Area A) | 1332 W. 5th St. | 0.66 |
| Hospitals | Community Hospital of San Bernardino | (northwest of project area) | 2.20 |
| | Saint Bernardine Medical Center (Redlands) | 2101 N Waterman Ave. | 4.00 |
| | Kaiser Permanente/Fontana Medical Center | 25828 Redlands Blvd, | 6.40 |
| | Loma Linda University Medical Center (Loma Linda) | 11234 Anderson St. | 6.90 |
| | Loma Linda University Children's Hospital (Loma Linda) | 11175 Campus St. | 6.90 |
| | County of San Bernardino Arrowhead Regional (Colton) | 400 North Pepper Ave. | 7.40 |
| Schools | Lytle Creek Elementary School | 275 S. K St. | 0.80 |
| | Ramona-Alessandro Elementary School | 670 N. Ramona Ave. | 0.93 |
| | Mount Vernon Elementary School | 1271 W. 10th St. | 0.57 |
| | Richardson Prep Hi Middle School | 455 S K St. | 0.45 |
| | Nunez Park | 1717 W. 5th St. | 0.60 |
| Parks | La Plaza City Park | N. Mount Vernon Ave. | 0.66 |
| | Sal Saavedra Field | W. 8th St./N. Roberds Ave. | 0.78 |
| | 9th St. Park | W. 9th St./N. Garnier Ave. | 1.00 |
| | Encanto Park | W. 10th St./N. Garner Ave. | 0.67 |
| | Municipal Baseball Park | S. G St./Rialto Ave. | 1.00 |
| | Lytle Creek Park | S K. St./W. Oak St. | 1.00 |
| | Fifth Street Senior Citizens Center | 600 W. 5th St. | 0.86 |
| Community Centers | San Bernardino Area Chamber of Commerce | 546 W. 6th St. | 0.64 |
| | Downtown Apostolic Church | 766 W. 6th St. | 0.53 |
| Places of Worship | Good Shepherd United Presbyterian Church | 829 N. Mount Vernon Ave. | 0.38 |
| | Guadalupe Center | 1475 W. 7th St. | 0.66 |
| | Holy Tabernacle Church | 1322 W. Belleview St. | 0.66 |
| | Paul Villaseñor Branch Library | 525 N. Mount Vernon Ave. | 0.25 |
| Library | Metrolink San Bernardino Station Park & Ride | 1204 W. 3rd St. | 0.15 |
| Transportation Centers | San Bernardino Greyhound Bus Station | 596 N. G St. | 0.89 |
| | Omnitrans Bus Terminal | 1700 W. 5th St. | 0.62 |
| | Omnitrans Bus Terminal | 1700 W. 5th St. | 0.62 |

**SOURCES:** The Thomas Guide: 2004 San Bernardino County Street Guide and Directory (Thomas Brothers, 2003).
Police Department District Office Maps (City of San Bernardino, 2007a).
San Bernardino Fire Department Facts (City of San Bernardino, 2007b).

areas of the County. The Highway Patrol also provides emergency response backup to SBPD and the County Sheriff upon request. The Highway Patrol office is located within the corporate limits of the City. Police/Sheriff stations that serve the project area are listed in Table 2-4 (Study Area Community Facilities and Services).

#### *Schools*

Educational services within the majority of the planning area are provided by the San Bernardino City Unified School District (SBCUSD). There are four schools within 1 mile of the project study area (Table 2-4). SBCUSD staff has reported that, under normal conditions, approximately 25 SBCUSD bus routes traverse the Mount Vernon Avenue Bridge. The buses travel on these designated routes between three and five times per day, picking up and dropping off students enrolled in three of the four different year-round enrollment tracks. One of the four tracks is always on hiatus. The SBCUSD staff has stated that, with the closure of the bridge in 2004, affected buses were re-routed to Rancho Street. This resulted in slightly longer travel distances and travel times. It is anticipated that this same re-routing would occur during construction of the proposed project, resulting in similar effects on travel times.

The SBCUSD staff has also confirmed that the Mount Vernon Avenue Bridge is not a designated walk route for any of its schools. The district has always regarded the bridge as unsafe and unsuitable as a walk route because of its narrow sidewalks, heavy traffic, and dilapidated condition. For this reason, bus transportation is provided from neighborhoods north and south of the bridge. Future use of the bridge as a school walk route by district students is deemed unlikely.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with

installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

The elimination of the bridge crossing would severely disrupt the local and regional circulation system and the No Build Alternative would likely result in less effective access and circulation for emergency services and to public services/facilities.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on Utilities/Emergency Services/Public Services and Facilities would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. The Retrofit/Rehabilitation Alternative would result in a rehabilitated bridge with the same traffic capacity as the existing bridge; therefore, population growth is unlikely and neither new nor expanded utilities, emergency services, or public services/facilities would be warranted. However, emergency services and access to the public services/facilities would be effected by a subsequent period of disruption which would occur to when the limited service life of the bridge improvements is exceeded and a new bridge would have to be constructed in the relatively near future,

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, the Retrofit/Rehabilitation would not have temporary affects on existing utilities, emergency services or public services/facilities.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. For the Locally Preferred/Replacement Alternative, potential utility conflicts would be clarified by field utility potholing data during PS&E final design and a study of utility relocations would be conducted; therefore, specific information regarding utility relocation is not available at this time. Depending on the level of effects, these facilities would need to be protected, adjusted, modified, or relocated. Should relocation be required, the affected utilities would be relocated in accordance with state law and regulations, and City policies. Based on available data, the following utility modifications are anticipated:

- Southern California Edison (SCE) electric line along the west side of the bridge
  *Relocation required; the line will move further west*

- 12-inch San Bernardino Municipal Water District (SBMWD) steel water line along the west side of the bridge

  *Relocation may be warranted depending on the following factors (1) ability for footing extension to accommodate the water line (determined during PS&E final design) and (2) embedment depth of the water line within the existing structure*
- 30-inch corrugated metal pipe (CMP) storm drain in the BNSF rail yard at the following locations (1) near southerly shoofly track 1 and (2) near W. 4th Street ramp to SB Mount Vernon Avenue

  *Relocation may be warranted; to be determined during PS&E final design*

Modification to the following utilities is not likely:

- 42-inch storm drain on the east side of the bridge, extending to the BNSF rail yard
- two-inch gas line along the alleyway to the southwest of the bridge
- four-inch gas line along the south side of W. 4th Street
- eight-inch gas line along the south side of W. 4th Street
- two-inch water line along W. 3rd Street, west of the bridge
- eight-inch water line on the north side of W. 3rd Street, east of the bridge

Emergency service response times are expected to be at least consistent with current conditions; therefore, the Locally Preferred/Replacement Alternative would not result in long-term effects on emergency services. Additionally, the new bridge would have the same traffic capacity as the existing bridge; therefore, population growth is unlikely and neither new utilities, expanded utilities, emergency services, nor public services/facilities would be warranted.

Temporary Construction Impacts. The Locally Preferred/Replacement Alternative requires removal of the existing bridge prior to construction of the new bridge; therefore removal of utilities attached to the existing bridge would be necessary. Minimization measures are identified to address temporary utility relocation effects and there would be ongoing coordination between the Department, City, affected agencies, and utility companies in order to minimize potential disruption of utility service.

Emergency service response times may be temporarily effected because the bridge may not be available to traffic during specific project construction timeframes; however; coordination with emergency services personnel to prepare a Traffic Management Plan (TMP) and Access Management Plan (AMP) would likely improve response times. Additionally, area hospitals encircle the project area at the following proximities:

- 2.2 miles northwest, Community Hospital of San Bernardino
- 4.0 miles northeast, Saint Bernardine Medical Center
- 6.4 miles northeast, Kaiser Permanente

- 6.9 miles southeast, Loma Linda University Medical Center
- 6.9 miles southeast; Loma Linda University Children's Hospital; and
- 7.4 miles southwest; County of San Bernardino Arrowhead Regional Hospital.

Access to public services/facilities at either end of the bridge would also be effected; however, these effects are temporary, would occur only during construction, and alternate routes would be provided during project construction. Additionally, project staff would consult with local school personnel in order to maintain safe access to schools in the project vicinity during construction. Efforts would also ensure compliance with ADA requirements as further discussed in Section 2.1.5 (traffic).

SBFD staff has indicated that the closure of the bridge in 2004 affected emergency response times. Stations affected by the bridge closure were Station 222 (formerly the primary responder), Station 221, Station 229, and Station 230. The nearest fire station (Station 222) is located 0.72 mile north of the bridge. On average, SBFD maintains a 4- to 6-minute response time within the City. With the bridge closed, fire vehicles must use alternate routes. The area south of the bridge is left somewhat isolated from immediate service from Station 222, thereby increasing response times by an unofficial estimate of 1 to 2 minutes. SBFD has found that an out-of-district unit located further away responds more quickly to the area than a dispatch from Station 222 taking an alternate route around the closed bridge. However, this diverts personnel and equipment away from the out-of-district responding station and its intended service area. Detours and dispatching adjustments with similar temporary effects are anticipated once the bridge is closed again for construction.

According to SBPD staff, police response times and access to areas north and south of the bridge were impaired by the closure of the bridge in 2004. With the bridge open, SBPD maintains an average response time of approximately 1 minute. With the bridge closed, average response times for areas in the vicinity of the bridge are approximately 6 to 8 minutes (unofficial estimate). The beat system (i.e., where specific patrol officers are assigned to certain geographical areas) is affected when an incident requiring immediate backup assistance occurs (e.g., car accident, shooting, etc.). Patrol cars in other beats taking detour routes respond in 6 to 8 minutes, whereas with the bridge open they are able to respond in 1 minute on average. Different detour routes are utilized based on time of day and traffic levels. When the bridge is eventually closed again for construction, detour routes would be implemented. Similar temporary effects on response times are expected to occur during the construction period.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

- **UT-1:** Implement a construction management program that maintains access to and from the project area community through signage, detours, flagmen, etc.
- **UT-2:** Coordinate with emergency services providers to ensure that alternative response routes to and from the project area community are in place during construction of the proposed project.
- **UT-3:** Consult with local school officials to identify safe pedestrian and vehicular routes for students traveling to and from schools in the project area community during construction of the proposed project.
- **UT-4:** The City will coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction.
- **UT-5:** The potential for disruption or obstruction of emergency services access in the project area to occur as a result of construction activities will be avoided with the preparation of a Traffic Management Plan (TMP) and an Access Management Plan (AMP). These plans will be written by the Department's traffic operations staff. The TMP will include a public awareness campaign to ensure that the public is aware of when and where any traffic closures or detours, or utility disruptions, if any, will occur. The AMP will be designed in coordination with emergency services personnel and local school officials to ensure that the communities within the project vicinity will remain accessible during the construction phase.

### 2.1.5 Traffic and Transportation/Pedestrian and Bicycle Facilities

#### REGULATORY SETTING

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

#### AFFECTED ENVIRONMENT

The information contained in this section was primarily taken from the Mount Vernon Avenue Bridge Traffic Conditions Memorandum (Iteris, 2009) and the Pedestrian and Vehicular Detour Analysis (Iteris, 2010). The existing circulation network in San Bernardino has been developed as a grid system in many parts of the City. However, because of natural and human-made barriers such as the railroad, many of the streets do not extend all the way through the City. The Mount Vernon Avenue Bridge carries Mount Vernon Avenue over the BNSF rail yard. The existing bridge has two vehicular travel lanes in each direction and sidewalks on either side. The bridge provides the only crossing of the BNSF rail lines between Rancho Avenue (approximately 1.8 km [1.1 miles] to the west) and Fifth Street (approximately 0.8 km [0.6 mile] to the east).

The City's General Plan Circulation Element designates Mount Vernon Avenue as a Major Arterial. These roadways can accommodate six or eight travel lanes, may have raised medians, and can carry high traffic volumes. These roadways are the primary thoroughfares linking San Bernardino with adjacent cities and the regional highway system (City of San Bernardino, 2005). Policies in the Circulation Element do not specifically address the proposed project. Mount Vernon Avenue is a prime surface street link between I-10 to the south and I- 215 to the north.

Mount Vernon Avenue is classified as a Major Arterial; however, it should be noted that Major Arterials can accommodate six to eight travel lanes. This does not necessarily mean that six to eight travel lines are required. The San Bernardino General Plan does not contain a requirement for Mount Vernon Avenue to be six to eight lanes.

Sidewalks on each side of the existing bridge are 1.1 m (3.5 feet) wide. Concrete barrier railings are located on each side of the bridge, though multiple areas have deteriorated or have been damaged and replaced with steel plates or plywood.

There are no existing bicycle facilities or are located within or adjacent to the project area. However, there is an existing proposal for a Local Multi-Purpose Trail on Mount Vernon Avenue, both on the bridge and the adjacent northern and southern segments of Mount Vernon Avenue (November 2005 City of San Bernardino General Plan, Page 8-13). Currently there is no existing trail that is officially designated on Mount Vernon Avenue Bridge, nor the adjacent northern and southern segments of Mount Vernon Avenue.

## ENVIRONMENTAL CONSEQUENCES

### *Methodology*

A level of service analysis at intersections was conducted according to the *Highway Capacity Manual* 2000 (HCM 2000) Operations Methodology. The analysis provides a.m. and p.m. peak hour traffic conditions at the 22 study intersections between 2004 and 2009. The analysis for existing 2009 a.m. and p.m. peak hour traffic conditions was conducted using Synchro 6 software.

Table 2-5 (Levels of Service for Intersections with Traffic Signals) explains LOS Criteria for signalized intersections. The results of the intersection level of service analysis are summarized in Table 2-9 (Intersection Levels of Service). Detailed level of service calculation worksheets are included in Appendix G.

A detailed inventory of intersection geometrics and control type was conducted in October 2009 at the 22 study intersections. Vehicle turning movement counts were conducted during the a.m. peak period (7:00 a.m. to 9:00 a.m.) and the p.m. peak period (4:00 p.m. to 6:00 p.m.) at the 22 study intersections in October 2009. The hour with the highest total traffic volume at each intersection was taken to be the peak hour for that peak period. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at the following four study intersections:

- 5th Street and Mount Vernon Avenue;
- 3rd Street and H Street;
- 2nd Street and Mount Vernon Avenue; and
- Rialto Avenue and Mount Vernon Avenue.

The traffic counts for these intersections were converted to passenger car equivalent (PCE) volumes using PCE factors of 1.5, 2.0, and 3.0 for 2-axle, 3-axle, and 4-axle trucks, respectively. Truck percentages for the remaining intersections for which classification counts were not collected were developed from the percentages at adjacent intersections.

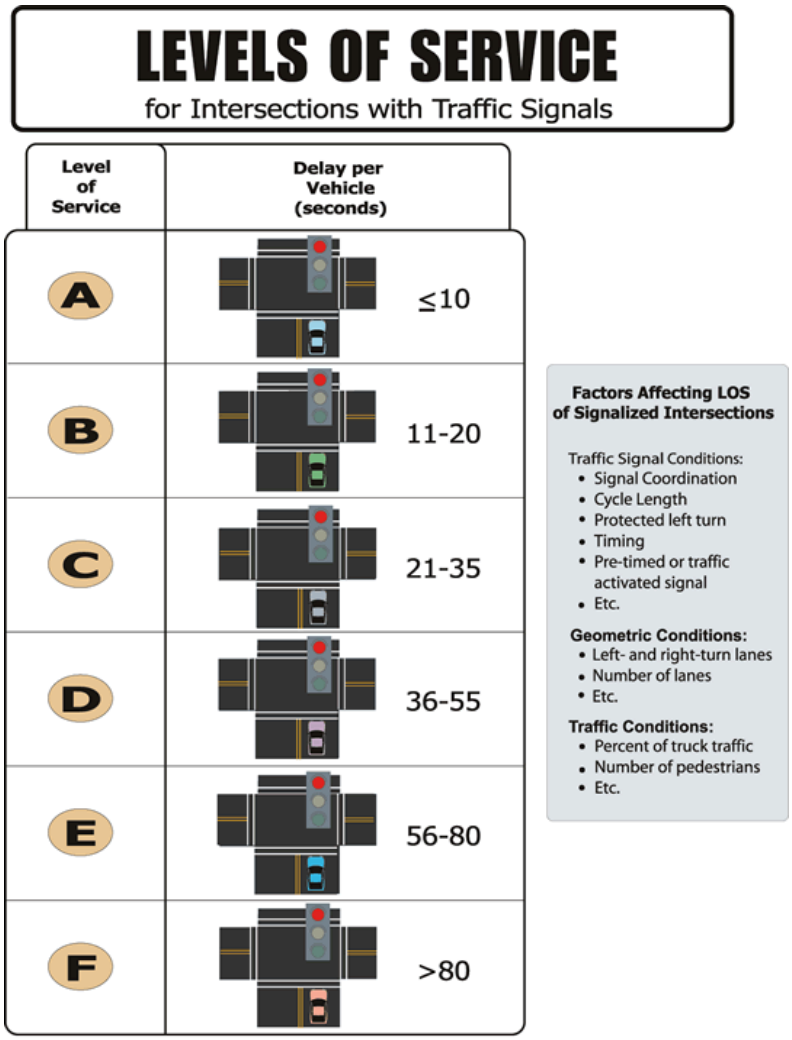
In addition, a 24-hour directional volume count was conducted for the Mount Vernon Avenue Bridge in October 2009. Approximately 14,700 vehicles per day cross the bridge. Table 2-6 (Existing 2009 Daily Traffic Volume / AM and PM Peak Hour Traffic at Mount Vernon Avenue) summarizes the 2009 peak hour and daily traffic volumes.

Forecast year 2035 design hour volume (DHV) and average daily traffic (ADT) for the Mount Vernon Avenue Bridge are also provided. The DHV and ADT were calculated using existing 2009 counts and model data from the base year and horizon year of the Southern California

Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) travel demand model.

To develop year 2035 design hour and daily traffic forecasts, year 2008 peak period and daily link (roadway segment) volumes were obtained from the travel demand model. Year 2035 peak period and daily link volumes were also obtained from the travel demand model. Raw modeled traffic volumes were post-processed using the methodology described below. The change in directional, peak period volumes on each roadway segment was calculated by subtracting year 2008 modeled volumes from year 2035 modeled volumes. Since the model uses a 4-hour p.m. peak period, the peak period growth was factored to determine the growth during the p.m. peak hour. Based on SCAG guidelines, the growth during the p.m. peak period was multiplied by a factor of 0.28.

**Table 2-5.**




Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

**Table 2-6. Existing 2009 Daily Traffic Volume AM and PM Peak Hour Traffic Volume at the Mount Vernon Avenue**

| | Daily Traffic Volume | | | A.M. Peak Hour Volume | | | P.M. Peak Hour Volume | | |
|---|---|---|---|---|---|---|---|---|---|
| **Location** | **NB** | **SB** | **Total** | **NB** | **SB** | **Total** | **NB** | **SB** | **Total** |
| Mount Vernon Avenue Bridge | 7519 | 7158 | 14677 | 494 | 537 | 1031 | 655 | 592 | 1247 |
| **SOURCE:** Mount Vernon Avenue Bridge Traffic Conditions Memorandum (Iteris. 2009). | | | | | | | | | |

The changes in peak hour and daily traffic volumes represent growth in traffic over the 27- year period from 2008 to 2035. Since there are 26 years between the year of the existing counts (2009) and 2035, this growth was multiplied by 26/27 to calculate the growth expected through 2035. This factored growth was then added to the existing (2009) volumes on each roadway segment to develop post-processed year 2035 roadway segment volumes. Table 2-7 and Table 2-8 summarize the year 2035 DHV and ADT calculations. As shown on these tables, year 2009 data were used for existing conditions. The year 2008 model volumes were used in the development of future traffic forecasts. Year 2008 is the base year in the regional travel demand model, meaning that it is the year for which the model was calibrated. This base year is used in calculating the growth expected in the future. The difference between the 2008 calibrated model year and the 2009 existing counts is taken into consideration in the development of the long-term traffic forecasts.

**Table 2-7. Year 2035 DHV Calculation**

| Existing 2009 Volume (PM Peak Hour) | 2035 Model Volume (Peak Period) | Factored Growth (2009 to 2035) | Peak Hour Growth | 2035 DHV |
|---|---|---|---|---|
| 1247 | 6718 | 494 | 139 | 1386 |
| **SOURCE:** Mount Vernon Avenue Bridge Traffic Conditions Memorandum (Iteris. 2009). | | | | |

**Table 2-8. Year 2035 ADT Calculation**

| 2009 Existing ADT | 2035 Model ADT | Factored Growth (2009 to 2035) | 2035 ADT |
|---|---|---|---|
| 14677 | 17104 | 1430 | 16107 |
| **SOURCE:** Mount Vernon Avenue Bridge Traffic Conditions Memorandum (Iteris. 2009). | | | |

***October 2009 Levels of Service***

The data in Table 2-9 (Intersection Levels of Service) indicates that all 22 study intersections are currently operating at satisfactory levels of service.

***Recommended Circulation Improvement***

The Mount Vernon Avenue Bridge Project is not a traffic capacity enhancement project. As indicated by Tables 2-7 and Table 2-8, it is not anticipated that traffic volumes would substantially increase; therefore, the current proposal is considered to be an effective and adequate infrastructure for future traffic circulation at least 20 years into the future.

The City's LOS standard for peak hour operations is LOS D; therefore, only intersections which operate at LOS E or worse are considered deficiencies that require minimization.

**Table 2-9. Intersection Levels of Service (October 2009)**

| Intersection | Control | A.M. Peak Hour | | | P.M. Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | V/C | Delay | LOS | V/C | Delay | LOS |
| 1. Rancho Ave./Foothill Blvd. | TWSA | - | 18.2 | C | - | 18.3 | C |
| 2. Medical Center Dr./5th St. | Signal | 0.30 | 18.1 | A | 0.36 | 9.3 | A |
| 3. Cabrera Ave./5th St. | Signal | 0.23 | 1.8 | A | 0.21 | 2.7 | A |
| 4. Mount Vernon Ave./5th St. | Signal | 0.49 | 10.8 | B | 0.45 | 11.6 | B |
| 5. L St./5th St. | Signal | 0.28 | 2.9 | A | 0.27 | 4.1 | A |
| 6. 4th St./Foothill Blvd.-5th St. | Signal | 0.34 | 3.4 | A | 0.28 | 3.3 | A |
| 7. H St./5th St. | Signal | 0.33 | 13.0 | B | 0.45 | 17.3 | B |
| 8. H St./I-215 On-Ramps - 4th St. | Signal | 0.24 | 4.0 | A | 0.54 | 8.1 | A |
| 9. I-215 SB Off Ramp - I St./3rd St. | Signal | 0.18 | 4.3 | A | 0.16 | 5.4 | A |
| 10. G-St.-H St./3rd St. | Signal | 0.18 | 8.0 | A | 0.22 | 9.0 | A |
| 11. Mount Vernon Ave./2nd St. | Signal | 0.42 | 14.7 | B | 0.54 | 18.7 | B |
| 12. K St./2nd St. | AWSC | 0.20 | 8.5 | A | 0.24 | 9.3 | A |
| 13. I St./2nd St. | Signal | 0.29 | 5.0 | A | 0.23 | 4.6 | A |
| 14. I-215 SB On Ramp/2nd St. | Signal | 0.29 | 3.9 | A | 0.48 | 5.9 | A |
| 15. I-215 NB On Ramp/2nd St. | Signal | 0.52 | 13.1 | B | 0.48 | 13.5 | B |
| 16. G-St./2nd St. | Signal | 0.43 | 14.4 | B | 0.51 | 18.1 | B |
| 17. Rancho Ave./Rialto Ave. | Signal | 0.25 | 6.3 | A | 0.31 | 6.3 | A |
| 18. Santa Fe Way/Rialto Ave. | Signal | 0.21 | 2.8 | A | 0.19 | 2.4 | A |
| 19. Mount Vernon Ave./Rialto Ave. | Signal | 0.39 | 6.0 | A | 0.36 | 5.8 | A |
| 20. K St./Rialto Ave. | Signal | 0.29 | 8.1 | A | 0.39 | 9.3 | A |
| 21. I St./Rialto Ave. | Signal | 0.36 | 5.5 | A | 0.31 | 4.7 | A |
| 22. G St./Rialto Ave. | Signal | 0.30 | 5.6 | A | 0.31 | 5.0 | A |

**SOURCE:** Mount Vernon Avenue Bridge Traffic Conditions Memorandum (Iteris. 2009).

**NOTES:** V/C = Volume/Capacity Ratio
Delay = Average control delay in seconds.
LOS = Level of Service
TWSC = Two-Way Stop Control (At TWSC intersections, worst case approach is reported.)
AWSC = All Way Stop Control

***Alternative 1, No Build Alternative***

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

The elimination of the bridge crossing would severely disrupt the local and regional circulation system; this alternative would result in an effect on traffic, transportation, pedestrian and bicycle facilities in the area surrounding Mount Vernon Avenue Bridge.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects to traffic and transportation or pedestrian and bicycle facilities would occur.

***Alternative 2, Retrofit/Rehabilitation Alternative***

Permanent Impacts. The Retrofit/Rehabilitation Alternative would result in a rehabilitated bridge with the same traffic capacity as the existing bridge; therefore traffic, transportation, pedestrian and bicycle facilities are expected to be at least consistent with current conditions.

While the service road at the southwest end of the bridge would be permanently closed, access to the residential properties and Self Car Wash would be maintained and re-established with the widening and improvement of the alleyway adjacent to the immediate west of these properties. Additionally, the widening and improvement of the alleyway would not only maintain access to these properties, but also maintain access to the BNSF railroad facilities located along West 3rd Street (in lieu of the service road to the east of the properties). The alleyway would be upgraded to “Access Roadway” standards, providing a travelled way of 26 feet (curb-to-curb) consisting of

two un-striped 13-foot wide lanes (beyond 10-foot standard lanes). Residents who live adjacent to the road would be primary users of the road; however, the road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access. An additional two-foot easement beyond both westerly and easterly curbs will provide room for placement of future utilities, and maintenance of the roadway itself; however, this area does not provide room for new parking spaces for of vehicles nor new sidewalks. Although the road will not include formal sidewalks, pedestrian use of this road would not be prohibited.

It is likely that improvements to the alleyway will occur within approximately 64 working days (approximately three months) and will include the following efforts:

- Remove existing facilities (the alley itself, trees, fences, small secondary structures bordering the alley, and vacuums at the self service car wash)
- Grade the new roadway subgrade,
- Place and compact base material, and
- Pave roadway.

Replacement and/or relocation of the removed facilities may extend beyond the 64-day timeframe based on further coordination with property owners. In accordance with the Uniform Relocation Assistance Act (discussed further in Section 2.1.3.2), potential replacement facilities such as fences and secondary structures would be determined during the right-of-way acquisition process in coordination with affected property owners.

This alternative would result in a bridge that would not have a normal useful service life; therefore, a subsequent period of disruption in traffic, transportation, pedestrian and bicycle facilities would occur when the limited service life of the bridge improvements is exceeded and a new bridge would have to be constructed in the relatively near future. The local community facilities and services would be subject to a second period of access and circulation disruption in the relatively near future when a new bridge would have to be constructed.

Temporary Construction Impacts. The Retrofit/Rehabilitation Alternative would result in short-term access disruptions during the construction period. It is likely that improvements to the alleyway will occur within approximately 64 working days (approximately three months) and will include the following efforts:

- Remove existing facilities (the alley itself, trees, fences, small secondary structures bordering the alley, and vacuums at the self service car wash)
- Grade the new roadway subgrade,
- Place and compact base material, and
- Pave roadway.

Replacement and/or relocation of the removed facilities may extend beyond the 64-day timeframe based on further coordination with property owners. In accordance with the Uniform Relocation Assistance Act (discussed further in Section 2.1.3.2), potential replacement facilities such as fences and secondary structures would be determined during the right-of-way acquisition process in coordination with affected property owners.

The bridge would also be closed to both pedestrian and vehicular traffic for a period between mid 2012 and mid 2014 while the bridge is rehabilitated. While bridge closure would be between 2nd Street and 4th Street, the intersections of Mount Vernon Avenue/4th Street and Mount Vernon Avenue/2nd Street would remain open. Temporary/Construction Impacts for the Retrofit/Rehabilitation Alternative are similar to Alternative 3, and are described in further detail in Alterative 3 Temporary/Construction Impacts.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Locally Preferred/Replacement Alternative would result in a new bridge with the same traffic capacity as the existing bridge; therefore traffic, transportation, pedestrian and bicycle facilities are expected to be at least consistent with current conditions. This alternative would not result in permanent barriers to local access.

Existing access points and circulation routes to and from businesses, commercial centers, residential neighborhoods and community centers would be maintained. While the service road at the southwest end of the bridge would be permanently closed, access to the residential properties and Self Car Wash would be maintained and re-established with the widening and improvement of the alleyway adjacent to the immediate west of these properties. While the service road at the southwest end of the bridge would be permanently closed, access to the residential properties and Self Car Wash would be maintained and re-established with the widening and improvement of the alleyway adjacent to the immediate west of these properties. Additionally, the widening and improvement of the alleyway would not only maintain access to these properties, but also maintain access to the BNSF railroad facilities located along West 3rd Street (in lieu of the service road to the east of the properties). The alleyway would be upgraded to “Access Roadway” standards, providing a travelled way of 26 feet (curb-to-curb) consisting of two un-striped 13-foot wide lanes (beyond 10-foot standard lanes). Residents who live adjacent to the road would be primary users of the road; however, the road will be located on right-of-way owned and maintained by the City of San Bernardino; therefore, the road would be open for public access. An additional two-foot easement beyond both westerly and easterly curbs will provide room for placement of future utilities, and maintenance of the roadway itself; however, this area does not provide room for new parking spaces for of vehicles nor new sidewalks. Although the road will not include formal sidewalks, pedestrian use of this road would not be prohibited.

Temporary Construction Impacts. The Locally Preferred/Replacement Alternative would result in short-term access disruptions during the construction period. It is likely that improvements to the alleyway will occur within approximately 64 working days (approximately three months) and will include the following efforts:

- Remove existing facilities (the alley itself, trees, fences, small secondary structures bordering the alley, and vacuums at the self service car wash)
- Grade the new roadway subgrade,
- Place and compact base material, and
- Pave roadway.

Replacement and/or relocation of the removed facilities may extend beyond the 64-day timeframe based on further coordination with property owners. In accordance with the Uniform Relocation Assistance Act (discussed further in Section 2.1.3.2), potential replacement facilities such as fences and secondary structures would be determined during the right-of-way acquisition process in coordination with affected property owners.

The bridge would also be closed to both pedestrian and vehicular traffic for a period between mid 2012 and mid 2014 while the bridge is replaced. While bridge closure would be between 2nd Street and 4th Street, the intersections of Mount Vernon Avenue/4th Street and Mount Vernon Avenue/2nd Street would remain open.

Notification of bridge closure and corresponding vehicle/pedestrian detours would be provided during construction. Specific closure and detour information would be included as part of the Traffic Management Plan (TMP) prepared specifically for the project. The TMP would be written by the City's traffic operations staff or traffic consultant and would include:

- a public awareness campaign to ensure that the public is aware of when and where any traffic closures or detours would occur
- provisions to notify emergency response personnel and local school officials at least two weeks in advance of any planned street closures (including partial and/or full closures) or traffic diversions
- a requirement to maintain access to all businesses and residences during project construction
- additional construction activities would include construction-related traffic changes from trucks and equipment entering and exiting the project construction area. While this would result in traffic and circulation, disruption would be limited to temporary, localized, and site-specific disruptions to traffic, transportation, pedestrian and bicycle facilities

A Pedestrian and Vehicular Detour Analysis was conducted for the project in order to:

- evaluate alternative means to provide pedestrian mobility across the Mount Vernon Avenue Bridge during the period of construction; and
- evaluate alternative vehicular detour plans during the period of construction.

*Pedestrian Detour Analysis*

Sidewalks on each side of the existing bridge are 1.1 m (3.5 feet) wide. Concrete barrier railings are located on each side of the bridge, though multiple areas have deteriorated or have been damaged and replaced with steel plates or plywood.

There are no existing bicycle facilities or trails located within or adjacent to the project area. However, there is an existing proposal for a Local Multi-Purpose Trail on Mount Vernon Avenue, both on the bridge and the adjacent northern and southern segments of Mount Vernon Avenue (November 2005 City of San Bernardino General Plan, Page 8-13). Currently there is no existing trail that is officially designated on Mount Vernon Avenue Bridge, nor the adjacent northern and southern segments of Mount Vernon Avenue; however, due to the possibility for a future trail, the project would accommodate any future bicycle trail.

*Methodology*

Pedestrian and bicyclist counts and interviews were conducted on a Saturday and Sunday in April 2004 and on Monday, May 3, 2004. Interviews were conducted by bilingual English/Spanish speakers from 11:00 a.m. to 3:00 p.m. on Saturday, 8:00 a.m. to noon on Sunday, and 5:00 a.m. to 11:00 p.m. on Monday. Every pedestrian and bicyclist crossing the bridge was counted, with the time and direction of travel recorded. Interviewers attempted to collect information from each pedestrian and cyclist concerning the origin, destination, and purpose of his or her trip.

The pedestrian information has been updated with current school attendance boundary maps provided by the San Bernardino Unified School District and updated cost estimates provided by Omnitrans. The pedestrian and bicycle analysis has not otherwise been updated because the pedestrian survey conducted in 2004 showed that the main reasons for pedestrians using the bridge were to get to shopping or work destinations. The type and location of such destinations has not changed significantly because there has been no substantial change in the amount of development in the area. The redevelopment of the Second Street Shopping Center reflected a modernization rather than a change in type or size of development; the primary tenant in this center, Superior Grocers, replaced the Mercado previously occupying the site, which was similar in terms of goods available and expected shoppers. Thus, no reasonable change in the amount of shoppers using Mount Vernon Avenue would be expected. In addition, no significant new businesses have opened within the areas located on either side of the bridge; therefore, pedestrians walking to places of employment can be reasonably assumed to be consistent since 2004 and, in fact, it might be reasonable to expect this number has decreased due to the current economic conditions. In addition, school boundaries remain unchanged from 2004; therefore, the numbers of school-aged children and their parents would not be reasonably expected to change.

*Analysis and Results*

Tables 2-10, 2-11, and 2-12 summarize the results of the pedestrian and bicyclist interviews on Saturday, Sunday, and Monday, respectively.

## Table 2-10. Trip Purpose by Time of Day (Saturday)

| Time Interval | Direction | | Purpose | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | North | South | Home-Work | Home-Shopping | Home-Metrolink | Home-Other | Metrolink-Other | Other-Other | Work-Other | |
| 11 am to 12 pm | 17 | 9 | 4 | 7 | 1 | 8 | 5 | 1 | 0 | 26 |
| 12 pm to 1 pm | 6 | 7 | 0 | 6 | 0 | 5 | 0 | 1 | 1 | 13 |
| 1 pm to 2 pm | 6 | 6 | 5 | 1 | 1 | 1 | 2 | 2 | 0 | 12 |
| 2 pm to 3 pm | 9 | 3 | 2 | 8 | 1 | 1 | 0 | 0 | 0 | 12 |
| Total<br>Percentage | 35<br>60% | 25<br>40% | 11<br>17% | 22<br>35% | 3<br>5% | 15<br>24% | 7<br>11% | 4<br>6% | 1<br>2% | 63<br>100% |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

## Table 2-11. Trip Purpose by Time of Day (Sunday)

| Time Interval | Direction | | Purpose | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | South | Home-Work | Home-Shopping | Home-Metrolink | Home-Other | Home-School | Shopping-Other | Metrolink-Other | Other-Other | No Response | |
| 8 am to 9 am | 3 | 7 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 10 |
| 9am pm to 10 am | 22 | 10 | 2 | 9 | 10 | 9 | 0 | 1 | 0 | 1 | 0 | 32 |
| 10 am to 11 am | 4 | 4 | 0 | 2 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 8 |
| 11 am to 12 pm | 11 | 3 | 1 | 1 | 1 | 9 | 1 | 0 | 1 | 0 | 0 | 14 |
| Total<br>Percentage | 40<br>63% | 24<br>38% | 4<br>6% | 15<br>23% | 12<br>19% | 25<br>39% | 1<br>2% | 1<br>2% | 2<br>3% | 3<br>5% | 1<br>2% | 64<br>100% |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

## Table 2-12. Trip Purpose by Time of Day (Monday)

| Time Interval | Direction | | Purpose | | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | North | South | Home-Work | Home-Shopping | Home-Metrolink | Home-Other | Home-School | Shopping-Other | Metrolink-Work | Metrolink-Other | Other-Other | Work-Other | No Response | |
| 5 am to 6 am | 1 | 8 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 6 am to 7 am | 3 | 7 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 10 |
| 7 am to 8 am | 8 | 10 | 6 | 0 | 1 | 3 | 5 | 0 | 1 | 0 | 2 | 0 | 0 | 18 |
| 8 am to 9 am | 6 | 4 | 3 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 10 |
| 9 am to 10 am | 9 | 14 | 5 | 8 | 0 | 5 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 23 |
| 10 am to 11 am | 4 | 4 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| 11 am to 12 pm | 4 | 8 | 2 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 12 |
| 12 pm to 1 pm | 5 | 8 | 4 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 13 |
| 1 pm to 2 pm | 9 | 9 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 5 | 0 | 6 | 18 |
| 2 pm to 3 pm | 8 | 6 | 4 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 14 |
| 3 pm to 4 pm | 8 | 7 | 3 | 0 | 4 | 2 | 3 | 0 | 0 | 0 | 2 | 1 | 0 | 15 |
| 4 pm to 5 pm | 10 | 16 | 1 | 3 | 0 | 11 | 5 | 0 | 1 | 0 | 1 | 0 | 4 | 26 |
| 5 pm to 6 pm | 6 | 7 | 3 | 1 | 4 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 13 |
| 6 pm to 7 pm | 6 | 14 | 7 | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 20 |
| 7 pm to 8 pm | 7 | 5 | 1 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 12 |
| 8 pm to 9 pm | 6 | 4 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 10 |
| 9 pm to 10 pm | 3 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 |
| 10 pm to 11 pm | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| Total<br>Percentage | 104<br>43% | 138<br>57% | 59<br>24% | 36<br>15% | 11<br>5% | 39<br>16% | 26<br>11% | 1<br>0% | 2<br>1% | 5<br>2% | 16<br>7% | 3<br>1% | 44<br>18% | 242<br>100% |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

On Saturday, an average of just over 15 pedestrians and cyclists crossed the bridge each hour during the count period. The largest single share of trips was trips between traveler's home and shopping destination. Most shopping trips were to and from the Mercado and surrounding stores just south of the Metrolink station on Third Street.

On Sunday, an average of just over 15 pedestrians and cyclists also crossed the bridge each hour during the court period. The largest single share of trips was trips between the traveler's home and a nonshopping, non-working destination. Most of these trips were to church, although some were social visits to friends or relatives.

On Monday, 242 pedestrians and cyclists crossed the bridge, with the greatest number of trips occurring between 4:00 and 5:00 p.m. The largest number of trips during the day was between traveler's home and place of work, although there was substantial numbers of shopping, church, and social trips throughout the day as well.

Table 2-13 presents some additional information concerning the nature of the pedestrians and cyclist trips across the Mount Vernon Bridge.

The vast majority of pedestrian and cyclist trips were home-based trips (i.e., has as their origin or destination the traveler's home). The area that was the origin or destination of the largest share of trips was the Metrolink Station and the adjacent Mercado, although this area's share of trip was much larger on the weekend than on Monday. Pedestrians accounted for the majority of trips during the count periods.

**Table 2-13. Trip Characteristics by Day of Week**

| Trip Type | Monday | | | Saturday | | | Sunday | | |
|---|---|---|---|---|---|---|---|---|---|
| | Number of Trips | As % of all Trips | As % of Respon ses | Number of Trips | As % of all Trips | As % of Respon ses | Number of Trips | As % of all Trips | As %of Respon ses |
| Home-based trips | 17 | 9 | 4 | 7 | 1 | 8 | 5 | 1 | 0 |
| Trips to/from Mercado/Metrolink Station | 6 | 7 | 0 | 6 | 0 | 5 | 0 | 1 | 1 |
| Trips to/from Bus Stop | 6 | 6 | 5 | 1 | 1 | 1 | 2 | 2 | 0 |
| Bicycle Trips | 9 | 3 | 2 | 8 | 1 | 1 | 0 | 0 | 0 |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

*Alternatives*

During the approximately two years that the bridge will be closed, there will be no pedestrian access across the BNSF rail yard at the bridge location. The shortest alternative pedestrian route is approximately two miles in length. Therefore, it will be necessary to provide alternative, motorized means for pedestrians to travel across the rail yard. Four feasible and potentially cost-

effective alternative means of providing pedestrian and bicyclist mobility are evaluated in this report. These four alternatives are described below:

- Dedicated Shuttle. In this alternative, a dedicated shuttle (most likely a van) would be provided to transport pedestrians along a designed route serving popular origins and destinations on both sides of the bridge.
- Bus Passes for Area Residents. In this alternative, the City of San Bernardino would make arrangements to provide bus passes to residents of the area surrounding the bridge. These passes would be valid for travel on Omnitrans buses that serve the area.
- Free Ridership on Area Bus Routes. In this alternative, arrangements would be made with Omnitrans to allow passengers boarding or alighting in the area surrounding the bridge to travel for free. Passes would not be required.
- Extend Omnitrans Routes 3 and 4. This alternative was considered for implementation in conjunction with Alternative 3. In this alternative, Omnitrans Routes 3 and 4 would be extended from the Fourth Street Transit Mall to serve the Metrolink Station/Mercado are to provide more convenient transit service between the north and south sides of the bridge.

The feasibility of each option was evaluated. Based on the data presented in the detour analysis, implementation of option #2 (free bus passes provided by the City of San Bernardino) would be the most beneficial in providing consistent cost-effective mobility to individuals (including both pedestrians and cyclists) affected by the bridge closure. Should bicyclists opt out of utilizing the option for free bus passes, it is likely that detours similar to what is described in Vehicular Detours, below, would apply.

*Evaluation of Alternatives*

Each of the alternatives was evaluated to assess its feasibility. The following summarizes the results of the evaluation of each alternative.

1. Dedicated Shuttle. A shuttle is most useful if many pedestrian and cyclist trips share common origins and destinations. However, as shown in Table 2-13, the single most common origin/destination was the area near the Metrolink Station and the Mercado, which accounted for only 16 percent of weekday trips. Omnitrans was contacted as the most likely provider of the dedicated shuttle because, as a transit provider, Omnitrans has the necessary equipment and personnel to provide such service. Omnitrans indicated that the cost of providing a shuttle service would be at least $100 per hour. To provide service 18 hours per day would therefore cost approximately $54,000 per month. Based on 242 pedestrians and cyclist who crossed the bridge during the eighteen-hour count period on Monday, the average cost per

trip of providing a shuttle service for that period of the day would be $7.44. Average per-trip costs would be even higher on weekends because of lower ridership.

2. Bus Passes for Area Residents. Under this alternative, the City would provide bus passes to provide mobility for the area residents. As shown in Table 2-13, over 80 percent of pedestrians and bicycle trips across the bridge are made by residents in the area. Therefore, this alternative would serve the large majority of current bridge users. Existing Omnitrans bus routes that serve the area (Routes 1, 3, and 4) run on headways of approximately 15 minutes from before 5:00 a.m. until the end of the evening rush hour, and then approximately 30 minute headways until after 10:00 p.m. Therefore, waiting times for pedestrians and cyclists to use the existing service would be reasonable. Omnitrans buses are fitted with bicycle racks, so that they would also be useable for those traveling by bicycle. A 31-day pass on Omnitrans costs $47 at retail, although it is expected that a lower bulk rate would be negotiated. At the retail rate, if 300 area residents received free bus passes, the monthly cost would be $14,100.
3. Free Ridership on Area Bus Routes. This alternative potentially offered the advantage of serving all travelers to the area, not just local residents. However, this alternative was found to be impractical because of the difficulty of confirming which riders would be alighting in the designated area. Fares are typically collected at the time of boarding, and bus drivers are not able to monitor individual passenger's destinations.
4. Extend Omnitrans Routes 3 and 4. This alternative would offer the benefit of more convenient transit service between the north and south sides of the bridge. Onmitrans was contacted concerning the feasibility of extending these routes. Omnitrans indicated that such an extension would not be feasible because of the tight headways that already exist on these routes. There is simply not time in each bus's schedule to lengthen the route.

*School Trips*

If large numbers of school children would need to travel from one side of the BNSF rail lines to the other during the bridge closure, then coordination would be required with the San Bernardino City Unified School District (SBCUSD) to ensure the appropriate transportation would be provided. The SBCUSD was contacted to obtain information concerning the attendance areas of the District's schools in the area. No SBCUSD schools have an attendance area that crosses the rail lines in the vicinity of the bridge. Therefore, no additional coordination is required.

### *Vehicular Detour Analysis*

#### *Methodology*

*Study Area.* The study area for the analysis of potential impacts from the traffic detour during construction includes the following intersections that will be affected by detoured or diverted traffic:

1. Foothill Boulevard and Rancho Avenue
2. 5th Street and Medical Center Drive
3. 5th Street and Cabrera Avenue
4. 5th Street and Mount Vernon Avenue
5. 5th Street and L Street
6. 5th Street (Foothill Boulevard) and 4th Street
7. 5th Street and H Street
8. 4th Street (I-215 On Ramps) and H Street
9. 3rd Street and I Street
10. 3rd Street and H Street
11. 2nd Street and Mount Vernon Avenue
12. 2nd Street and K Street
13. 2nd Street and I Street
14. 2nd Street and I-215 SB On Ramp
15. 2nd Street and I-215 NB On Ramp
16. 2nd Street and G Street
17. Rialto Avenue and Rancho Avenue
18. Rialto Avenue and Santa Fe Way
19. Rialto Avenue and Mount Vernon Avenue
20. Rialto Avenue and K Street
21. Rialto Avenue and I Street
22. Rialto Avenue and G Street

*Existing Volumes.* A detailed inventory of the intersection geometrics and control type was conducted in October 2009 at the 22 study intersections. Vehicle turning movement counts were conducted during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM) at the 22 study intersections in October 2009. The hour with the highest total traffic volume at each intersection was taken to be the peak hour for that peak period. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at the following four study intersections: 5th Street / Mount Vernon Avenue, 2nd Street / Mount Vernon Avenue, 3rd Street / H Street, Rialto Avenue / Mount Vernon Avenue. It should be noted that heavy trucks are currently restricted from using the Mount Vernon Bridge. Therefore, heavy truck volumes on the bridge are relatively low.

A detailed inventory of the intersection geometrics and control type was conducted in October 2009 at the 22 study intersections. Vehicle turning movement counts were conducted during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM) at the 22 study intersections in October 2009. The hour with the highest total traffic volume at each intersection was taken to be the peak hour for that peak period. Vehicle classification counts (e.g., passenger vehicle, 2-axle truck, 3-axle truck, and 4 or more axle truck), were conducted at the following four study intersections: 5th Street / Mount Vernon Avenue, 2nd Street / Mount Vernon Avenue, 3rd Street / H Street, Rialto Avenue / Mount Vernon Avenue.

The traffic counts for these intersections were converted to passenger car equivalent (PCE) volumes using PCE factors of 1.5, 2.0, and 3.0 for 2-axle, 3-axle, and 4-axle trucks, respectively.

Truck percentages for the remaining intersections for which classification counts were not collected were developed from the percentages at adjacent intersections. In addition, a 24-hour directional volume count was conducted for the Mount Vernon Avenue Bridge in October 2009. Approximately 14,700 vehicles per day cross the bridge. Table 2-14 and Table 2-15 summarize the 2009 peak hour and daily traffic volumes.

### Table 2-14. Existing 2009 AM and PM Peak Hour Traffic Volume

| Location | AM Peak Hour Volume | | | PM Peak Hour Volume | | |
|---|---|---|---|---|---|---|
| | NB | SB | Total | NB | SB | Total |
| Mount Vernon Avenue Bridge | 494 | 537 | 1,031 | 655 | 592 | 1,247 |
| **SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010). | | | | | | |

### Table 2-15. Existing 2009 Daily Traffic Volume

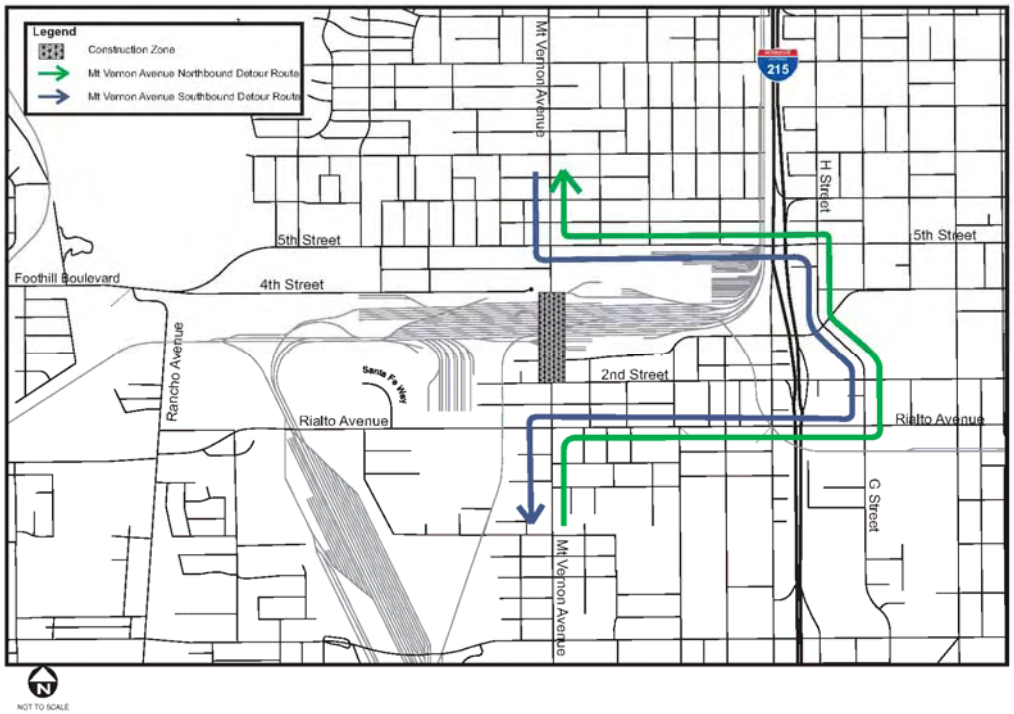
| Location | Daily Traffic Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| Mount Vernon Avenue Bridge | 7519 | 7158 | 14,677 |
| **SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010). | | | |

*Traffic Forecast - Year 2012 Volumes (Background Traffic Volumes).* Construction is scheduled to begin mid 2012 and completed mid 2014. The bridge closure will be closed for the duration of the project construction, since the existing bridge will be used for construction staging to build the new bridge. Because the initial construction will take place in 2012, traffic conditions during that year are analyzed in this report. Traffic impacts are most likely to occur during the initial period of construction, because drivers will adjust their routes and destinations as time goes on, reducing traffic volumes in the project area. Forecast year 2012 without detour traffic volumes were developed by applying a growth factor of 3% to year 2009 volumes (1% per year). Since the truck restrictions on the bridge that are currently in place will remain in effect until the new bridge is opened, year 2012 truck traffic patterns will remain the same as under existing conditions. At the time the traffic counts were collected for this study (October 2009), the I-215 northbound and southbound on-ramps from 4th Street were still open. During the course of the study, the on-ramps were closed to vehicular traffic and detour routes were designated for freeway traffic. Initial observations of the traffic in the area suggested that significant portions of the traffic that had previously used the 4th Street interchange was not following the detour route, but had diverted out of the area completely. To assess the increase in traffic at the 2nd Street interchange due to the detour routes, spot turning movement counts (one half-hour counts during AM peak hour and PM peak hour) were conducted at 2nd Street / I-215 Southbound On-Ramp in April 2010 (included in Appendix B). The increase in volume at this location over pre-detour

volumes was taken as an indication of the amount of traffic actually following the detour route. The projected 2012 without construction traffic volumes were adjusted to reflect the change in traffic patterns based on these spot counts. This adjustment was made by assuming that a similar amount of traffic would continue to follow the freeway detour route in 2012, and increasing the appropriate turning movements along the freeway detour route by that amount.

*Traffic Forecast - Year 2012 Volumes (Detour Condition Traffic Volumes).* Detour condition traffic volumes were developed by manually reassigning turning movement traffic affected by the detour of Mount Vernon Avenue traffic based on the expected detour route. During construction, the northbound and southbound traffic currently using Mount Vernon Avenue will be detoured between Rialto Avenue and 5th Street. The detour routes are depicted in the diagram below. Since the truck restrictions on the bridge that are currently in place will remain in effect until the new bridge is opened, detour conditions truck traffic patterns will remain the same as under existing conditions (i.e., trucks do not use the bridge).

**Diagram of Detour Routes**




**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

Northbound traffic will be rerouted as follows:

- East on Rialto Avenue
- North on G Street/H Street
- West on 5th Street

Southbound traffic will be rerouted as follows:

- East on 5th Street
- South on H Street/G Street
- West on Rialto Avenue

Not all drivers will follow the posted detour. Drivers with local destinations who are familiar with the area may follow other routes. Based on the locations of destinations in the project vicinity, the following assumptions were also made to derive the detour traffic volumes:

- Ten percent of northbound traffic with destinations to the west of Mount Vernon Avenue will not follow the detour route and will instead travel to the west via Rialto Avenue, to the north via Rancho Avenue and continue to the west on Foothill Boulevard.
- Westbound traffic on 2nd Street that currently turns left at the Mount Vernon Avenue and 2nd Street intersection will instead turn left at K Street to reach Rialto Avenue and go west on Rialto Avenue.
- Ten percent of existing traffic turning from Mount Vernon Avenue onto 2nd Street travels to destinations west of I-215, thirty percent travels north on I-215, thirty percent travels south on I-215, and the remaining thirty percent travels east to downtown San Bernardino.

*Intersection Level of Service.* The efficiency of traffic operations at a location can be described in terms of Level of Service (LOS). The level of service concept is a measure of average operating conditions at an intersection during an hour. It is based on vehicle delay and volume-to-capacity (V/C) ratio. Levels range from A to F, with A representing excellent (free-flow) conditions and F representing extreme congestion.

The analysis of traffic operations at intersections was conducted according to the Highway Capacity Manual (HCM 2000) Operations Methodology. The analysis was conducted using Synchro 6 software for signalized and two-way stop controlled intersections and Traffix 7.9 software for all-way stop controlled intersections. In this methodology, level of service (LOS) is defined by the average control delay experienced by vehicles at an intersection, taking into account the effects of intersection characteristics such as lane geometry and signal phasing. Table 2-16 presents the delay associated with each LOS grade, as well as a qualitative description of intersection operations at that grade, for both signalized and unsignalized intersections.

Level of Service Standard. The City of San Bernardino's level of service standard is LOS D. Intersections operating at LOS E or F are considered unsatisfactory.

*Existing Conditions*

A level of service analysis using HCM 2000 methodologies was conducted to evaluate existing AM and PM peak hour traffic conditions at the study intersections. The results of the intersection level of service analysis are summarized in Table 2-17. An examination of the data in Table 2-17 indicates that, under 2009 conditions, all 22 study intersections were operating at LOS C or better. In the 2004 Pedestrian and Vehicular Detour Analysis study, the intersection of Foothill Boulevard and Rancho Avenue was operating at an unsatisfactory level of service due to the closure of the Mount Vernon Avenue Bridge and the resulting redistribution of traffic through Rancho Avenue. Under current conditions, that intersection has returned to a satisfactory LOS.

*Year 2012 Conditions*

This section analyzes traffic and circulation conditions in the study area during the project's construction year (2012), with and without the construction-related traffic diversion.

**Table 2-16. Intersection Level of Service Definitions**

| Level of Service | Description | Intersection Delay (seconds/vehicle) | |
|---|---|---|---|
| | | Signalized | Unsignalized |
| A | Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. | < 10 | < 10 |
| B | 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. | >10 and < 20 | >10 and < 15 |
| C | Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted. | >20 and < 35 | >15 and < 25 |
| D | Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. | >35 and < 55 | >25 and < 35 |
| E | Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes. | >55 and < 80 | >35 and < 50 |
| F | Forced flow. Represents jammed conditions. Backups form locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow. | > 80 | > 50 |

**SOURCES:** Highway Capacity Manual, Special Report 209 (Transportation Research Board, 2000)
Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

## Table 2-17. Existing (2009) Peak Hour Intersection Level of Service

| Intersection | Control | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | V/C | Delay | LOS | V/C | Delay | LOS |
| 1. Foothill Boulevard and Rancho Avenue | TWSC | - | 18.2 | C | - | 18.3 | C |
| 2. 5th Street and Medical Center Drive | Signal | 0.30 | 8.1 | A | 0.36 | 9.3 | A |
| 3. 5th Street and Cabrera Avenue | Signal | 0.23 | 1.8 | A | 0.21 | 2.7 | A |
| 4. 5th Street and Mount Vernon Avenue | Signal | 0.49 | 10.8 | B | 0.45 | 11.6 | B |
| 5. 5th Street and L Street | Signal | 0.28 | 2.9 | A | 0.27 | 4.1 | A |
| 6. 5th Street (Foothill Boulevard) and 4th Street | Signal | 0.34 | 3.4 | A | 0.28 | 3.3 | A |
| 7. 5th Street and H Street | Signal | 0.33 | 13.0 | B | 0.45 | 17.3 | B |
| 8. 4th Street (I-215 On Ramps) and H Street | Signal | 0.24 | 4.0 | A | 0.54 | 8.1 | A |
| 9. 3rd Street and I Street | Signal | 0.18 | 4.3 | A | 0.16 | 5.4 | A |
| 10. 3rd Street and H Street | Signal | 0.18 | 8.0 | A | 0.22 | 9.0 | A |
| 11. 2nd Street and Mount Vernon Avenue | Signal | 0.42 | 14.7 | B | 0.54 | 18.7 | B |
| 12. 2nd Street and K Street | AWSC | 0.20 | 8.5 | A | 0.24 | 9.3 | A |
| 13. 2nd Street and I Street | Signal | 0.29 | 5.0 | A | 0.23 | 4.6 | A |
| 14. 2nd Street and I-215 SB On Ramp | Signal | 0.29 | 3.9 | A | 0.48 | 5.9 | A |
| 15. 2nd Street and I-215 NB On Ramp | Signal | 0.52 | 13.1 | B | 0.48 | 13.5 | B |
| 16. 2nd Street and G Street | Signal | 0.43 | 14.4 | B | 0.51 | 18.1 | B |
| 17. Rialto Avenue and Rancho Avenue | Signal | 0.25 | 6.3 | A | 0.31 | 6.3 | A |
| 18. Rialto Avenue and Santa Fe Way | Signal | 0.21 | 2.8 | A | 0.19 | 2.4 | A |
| 19. Rialto Avenue and Mount Vernon Avenue | Signal | 0.39 | 6.0 | A | 0.36 | 5.8 | A |
| 20. Rialto Avenue and K Street | Signal | 0.29 | 8.1 | A | 0.39 | 9.3 | A |
| 21. Rialto Avenue and I Street | Signal | 0.36 | 5.5 | A | 0.31 | 4.7 | A |
| 22. Rialto Avenue and G Street | Signal | 0.30 | 5.6 | A | 0.31 | 5.0 | A |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

**NOTES:** HCM 2000 Operations Methodology.
V/C = Volume-to-Capacity Ratio
AWSC = All-way Stop Control
LOS = Level of Service
Delay = Average Vehicle Delay (Seconds).
TWSC = Two-way Stop Control
*At TWSC intersections, worst-case approach is reported*

*Year 2012 Without Detour Conditions*

Year 2012 traffic volumes were developed as described in the "Traffic Forecasts" section. Year 2012 without detour conditions include the change in traffic patterns due to the ongoing detour from the closure of the 4th Street ramps. A level of service analysis using HCM 2000 methodologies was conducted to evaluate year 2012 without detour conditions at the study intersections. The results of the intersection level of service analysis are summarized in Table 2-18.

Table 2-18 indicates that all 22 study intersections are expected to operate at LOS C or better during year 2012 without construction conditions.

## Table 2-18. Year 2012 Without Detour Peak Hour Levels of Service

| Intersection | Control | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | V/C | Delay | LOS | V/C | Delay | LOS |
| 1. Foothill Boulevard and Rancho Avenue | TWSC | - | 18.8 | C | - | 19.1 | C |
| 2. 5th Street and Medical Center Drive | Signal | 0.31 | 8.1 | A | 0.38 | 9.4 | A |
| 3. 5th Street and Cabrera Avenue | Signal | 0.24 | 2.1 | A | 0.22 | 2.7 | A |
| 4. 5th Street and Mount Vernon Avenue | Signal | 0.50 | 11.0 | B | 0.47 | 11.8 | B |
| 5. 5th Street and L Street | Signal | 0.28 | 2.9 | A | 0.28 | 4.1 | A |
| 6. 5th Street (Foothill Boulevard) and 4th Street | Signal | 0.35 | 3.4 | A | 0.28 | 3.3 | A |
| 7. 5th Street and H Street | Signal | 0.34 | 13.1 | B | 0.47 | 17.7 | B |
| 8. 4th Street (I-215 On Ramps) and H Street | Signal | 0.24 | 4.3 | A | 0.33 | 5.3 | A |
| 9. 3rd Street and I Street | Signal | 0.23 | 4.9 | A | 0.29 | 5.1 | A |
| 10. 3rd Street and H Street | Signal | 0.37 | 8.4 | A | 0.41 | 9.3 | A |
| 11. 2nd Street and Mount Vernon Avenue | Signal | 0.45 | 15.0 | B | 0.58 | 20.2 | C |
| 12. 2nd Street and K Street | AWSC | 0.20 | 8.5 | A | 0.24 | 9.4 | A |
| 13. 2nd Street and I Street | Signal | 0.35 | 5.4 | A | 0.36 | 5.4 | A |
| 14. 2nd Street and I-215 SB On Ramp | Signal | 0.39 | 5.0 | A | 0.68 | 11.0 | B |
| 15. 2nd Street and I-215 NB On Ramp | Signal | 0.55 | 16.0 | B | 0.64 | 16.7 | B |
| 16. 2nd Street and G Street | Signal | 0.50 | 14.5 | B | 0.74 | 27.2 | C |
| 17. Rialto Avenue and Rancho Avenue | Signal | 0.26 | 6.0 | A | 0.32 | 6.3 | A |
| 18. Rialto Avenue and Santa Fe Way | Signal | 0.22 | 2.8 | A | 0.2 | 2.5 | A |
| 19. Rialto Avenue and Mount Vernon Avenue | Signal | 0.40 | 6.1 | A | 0.37 | 6.0 | A |
| 20. Rialto Avenue and K Street | Signal | 0.30 | 8.2 | A | 0.4 | 9.5 | A |
| 21. Rialto Avenue and I Street | Signal | 0.38 | 5.6 | A | 0.32 | 4.7 | A |
| 22. Rialto Avenue and G Street | Signal | 0.31 | 5.7 | A | 0.32 | 5.0 | A |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

**NOTES:** HCM 2000 Operations Methodology.
V/C = Volume-to-Capacity Ratio
AWSC = All-way Stop Control
LOS = Level of Service
Delay = Average Vehicle Delay (Seconds).
TWSC = Two-way Stop Control
*At TWSC intersections, worst-case approach is reported*

*Year 2012 With Detour Conditions*

Year 2012 with detour conditions include the closure of Mount Vernon Avenue between Kingman Street and 2nd Street, and the implementation of the detour as described above. Year 2012 detour traffic volumes were developed as described in the “Traffic Forecasts” section. A level of service analysis using HCM 2000 methodologies was conducted to evaluate year 2012 detour conditions at the study intersections. The results of the intersection level of service analysis are summarized in Table 2-19.

## Table 2-19. Year 2012 With Detour Peak Hour Levels of Service

| Intersection | Control | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | V/C | Delay | LOS | V/C | Delay | LOS |
| 1. Foothill Boulevard and Rancho Avenue | TWSC | - | 19.5 | C | - | 21.5 | C |
| 2. 5th Street and Medical Center Drive | Signal | 0.31 | 8.1 | A | 0.38 | 9.4 | A |
| 3. 5th Street and Cabrera Avenue | Signal | 0.24 | 2.1 | A | 0.22 | 2.7 | A |
| 4. 5th Street and Mount Vernon Avenue | Signal | 0.74 | 18.9 | B | 0.82 | 23.0 | C |
| 5. 5th Street and L Street | Signal | 0.44 | 2.5 | A | 0.49 | 4.0 | A |
| 6. 5th Street (Foothill Boulevard) and 4th Street | Signal | 0.35 | 3.4 | A | 0.28 | 3.3 | A |
| 7. 5th Street and H Street | Signal | 0.61 | 21.3 | C | **0.99** | **75.9** | **E** |
| 8. 4th Street (I-215 On Ramps) and H Street | Signal | 0.40 | 3.5 | A | 0.53 | 6.8 | A |
| 9. 3rd Street and I Street | Signal | 0.23 | 4.9 | A | 0.29 | 5.1 | A |
| 10. 3rd Street and H Street | Signal | 0.54 | 9.8 | A | 0.60 | 9.4 | A |
| 11. 2nd Street and Mount Vernon Avenue | Closed | - | - | - | - | - | - |
| 12. 2nd Street and K Street | AWSC | 0.29 | 9.5 | A | 0.45 | 11.9 | B |
| 13. 2nd Street and I Street | Signal | 0.38 | 5.7 | A | 0.43 | 6.3 | A |
| 14. 2nd Street and I-215 SB On Ramp | Signal | 0.47 | 5.9 | A | 0.78 | 15.1 | B |
| 15. 2nd Street and I-215 NB On Ramp | Signal | 0.63 | 19.8 | B | 0.71 | 17.2 | B |
| 16. 2nd Street and G Street | Signal | 0.72 | 19.6 | B | **1.12** | **85.2** | **F** |
| 17. Rialto Avenue and Rancho Avenue | Signal | 0.26 | 5.9 | A | 0.33 | 6.2 | A |
| 18. Rialto Avenue and Santa Fe Way | Signal | 0.22 | 2.8 | A | 0.20 | 2.4 | A |
| 19. Rialto Avenue and Mount Vernon Avenue | Signal | 0.77 | 11.7 | B | 0.89 | 22.8 | C |
| 20. Rialto Avenue and K Street | Signal | 0.48 | 10.7 | B | 0.71 | 21.6 | C |
| 21. Rialto Avenue and I Street | Signal | 0.54 | 7.0 | A | 0.52 | 5.5 | A |
| 22. Rialto Avenue and G Street | Signal | 0.80 | 14.4 | B | **1.52** | **97.4** | **F** |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

**NOTES:** HCM 2000 Operations Methodology.
V/C = Volume-to-Capacity Ratio
AWSC = All-way Stop Control
LOS = Level of Service
Delay = Average Vehicle Delay (Seconds).
TWSC = Two-way Stop Control
*At TWSC intersections, worst-case approach is reported*

All study intersections are projected to operate at acceptable levels of service during construction, with the exception of the following:

- 5th Street / H Street
- 2nd Street / G Street
- Rialto Avenue / G Street

*Temporary Intersection Improvements*

During the anticipated period of construction (mid 2012 through mid 2014), the 5th Street / H Street, 2nd Street / G Street, and Rialto Avenue / G Street intersections are projected to operate at unsatisfactory levels of service. The following temporary circulation improvements are recommended to improve operations at these locations:

Location #7. 5th Street / H Street

- Restripe the northbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
- Change the phasing on the northbound and southbound approaches to split phase.

Location #16. 2nd Street / G Street

- Restripe the northbound approach to add an additional left-turn lane by narrowing the lanes.
- Change the northbound left-turn phasing from permitted + protected to protected.
- Restripe the southbound approach as one left-turn lane, one through lane and one exclusive right-turn lane.
- Add a southbound right-turn overlap phase.

Location #22. Rialto Avenue / G Street

- Restripe the eastbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
- Change the phasing on the eastbound and westbound approaches to split phase.

The above temporary improvements should be implemented prior to closure of the existing bridge and remain in place until the new bridge is opened to traffic. They should be removed and the intersections returned to their existing configurations after the new bridge is opened to traffic.

A level of service analysis using HCM 2000 methodologies was conducted to evaluate year 2012 detour conditions with the temporary improvements at the study intersections. The results of the intersection level of service analysis are summarized in Table 2-20.

With the temporary improvements, all study intersections are projected to operate at satisfactory levels of service.

**Table 2-20. Year 2012 Detour with Temporary Improvements Peak Hour Levels of Service**

| Intersection | Control | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | V/C | Delay | LOS | V/C | Delay | LOS |
| 7. 5th Street and H Street | Signal | 0.60 | 21.5 | C | 0.90 | 50.5 | D |
| 16. 2nd Street and G Street | Signal | 0.71 | 19.6 | B | 1.00 | 52.9 | D |
| 22. Rialto Avenue and G Street | Signal | 0.52 | 15.7 | B | 0.67 | 20.1 | C |

**SOURCE:** Pedestrian and Vehicular Detour Analysis (Iteris, 2010).

**NOTES:** HCM 2000 Operations Methodology. LOS = Level of Service
V/C = Volume-to-Capacity Ratio Delay = Average Vehicle Delay (Seconds).

*Summary and Conclusions*

The Mount Vernon Avenue Bridge has been determined to be structurally deficient, and Mount Vernon Avenue will be closed between 2nd Street and Kingman Street while the bridge is being replaced. This report presents the results of the analyses performed to evaluate potential traffic and circulation impacts caused by traffic detour during the reconstruction of the bridge.

*Existing Conditions*. Under existing conditions, all study intersections are operating at satisfactory levels of service (LOS C or better).

*Year 2012 Without Detour Conditions.* Under 2012 without detour conditions, all study intersections are projected to continue operating at satisfactory levels of service (LOS C or better).

*Year 2012 With Detour Conditions.* During year 2012 with detour, all study intersections are projected to operate at satisfactory levels of service, with the exception of the following:

- 5th Street / H Street (PM peak hour)
- 2nd Street / G Street (PM peak hour)
- Rialto Avenue / G Street (PM peak hour)

*Year 2012 With Temporary Improvements.* During year 2012 with detour conditions, with the recommended temporary circulation improvements, all study intersections are projected to operate at satisfactory levels of service (LOS D or better). The temporary improvements should be implemented prior to closure of the existing bridge and remain in place until the new bridge is opened to traffic. They should be removed and the intersections returned to their existing configurations after the new bridge is opened to traffic.

*Transit Detours*

Omnitrans Transit Lines do not utilize Mount Vernon Avenue Bridge. However, Transit Routes 3/4, 14, and 10 are within the project vicinity, but not necessarily within the project area.

Omnitrans Transit Route 3/4 and 14 are near the northern end of the project; however, the intersection of West 4th Street and Mount Vernon Avenue would remain open during project construction. Construction related effects to these lines are unlikely, including the Mount Vernon Avenue/West 5$^{th}$ Street intersection utilized by all of these lines. (*It should be noted that this intersection has previously been reconstructed as part of a separate City Public Works project and is not being constructed as part of this project*.)

Transit Route 1 is adjacent to the southern end of the project and traverses from Mount Vernon Avenue to 2nd Street via Viaduct, 3$^{rd}$, and J Streets. Since the bridge closure would be on Mount

Vernon Avenue between 2nd and 4th Streets, Transit Route 1 may be re-routed to 3rd Street via West King Street, North Giovanola Avenue, and 2nd Street, eliminating a small section of the route along Viaduct Street. To temporarily re-route Transit Route 1, coordination with Omnitrans for input on the TMP would occur.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

- **TR-1:** Notices of the bridge closure, including corresponding vehicle/pedestrian detours, shall be provided and posted at both approaches to the bridge in advance of the scheduled bridge closure. A public awareness campaign and or community outreach/public involvement program will be conducted to ensure that the public is aware of when and where any traffic closures or detours would occur Emergency response personnel and local school officials will be notified at least two weeks in advance of any planned street closures (including partial and/or full closures) or traffic diversions
- **TR-2:** The City of San Bernardino will make arrangements to provide free bus passes to residents of the area surrounding the bridge. These passes would be valid for travel on Omnitrans buses that serve the area. This will provide mobility to area residents affected by the bridge closure since there will be no pedestrian access across the BNSF rail yard during between mid 2012 and mid 2014. The bus passes will provide alternative, motorized means for pedestrians to travel across the rail yard during that time.
- **TR-3:** A Construction Management Program will be developed and implemented to maintain access to and from the project area community through signage, detours, flagmen, etc. Since construction activities would include construction-related traffic changes from trucks and equipment entering and exiting the project construction area.
- **TR-4:** A Traffic Management Plan (TMP) will be developed and implemented. The TMP will include a requirement to maintain access to all businesses and residences during project construction. Temporary improvements should be implemented prior to closure of the existing bridge and remain in place until the new bridge is opened to traffic. The temporary improvements should be removed and the intersections returned to their existing configurations after the new bridge is opened to traffic. Temporary circulation improvements will be included at the following locations to improve operations:

  <u>Location #7. 5th Street / H Street</u>
  - Restripe the northbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
  - Change the phasing on the northbound and southbound approaches to split phase.

  <u>Location #16. 2nd Street / G Street</u>
  - Restripe the northbound approach to add an additional left-turn lane by narrowing the lanes.
  - Change the northbound left-turn phasing from permitted + protected to protected.

- Restripe the southbound approach as one left-turn lane, one through lane and one exclusive right-turn lane.
- Add a southbound right-turn overlap phase.

Location #22. Rialto Avenue / G Street

- Restripe the eastbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.
- Change the phasing on the eastbound and westbound approaches to split phase.

- **TR-5:** Transit Route 1 is adjacent to the southern end of the project and traverses from Mount Vernon Avenue to 2nd Street via Viaduct, 3rd, and J Streets. Since the bridge closure would be on Mount Vernon Avenue between 2nd and 4th Streets, Transit Route 1 may be re-routed to 3rd Street via West King Street, North Giovanola Avenue, and 2nd Street, eliminating a small section of the route along Viaduct Street. To temporarily re-route Transit Route 1, coordination with Omnitrans for input on the TMP would occur.

## 2.1.6 Visual/Aesthetics

### REGULATORY SETTING

#### *National Environmental Policy Act*

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings ([42 USC 4331[b][2]). To further emphasize this point, the Department, as assigned by FHWA, in its implementation of NEPA (23 USC 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

### AFFECTED ENVIRONMENT

A Visual Impact Memorandum (ICF Jones and Stokes, 2009b) was prepared for the proposed project and was used in the preparation of this section.

The FHWA process was used to assess the visual quality at the bridge. This process uses three criteria: vividness, intactness, and unity to determine the visual quality of a view. Vividness relates to the memorability of a view. A view that ranks high for vividness would demonstrate distinct or unique features, which, when combined together, create a view that is striking or memorable. Intactness is the visual integrity of a view. A view that is high in intactness shows a high level of integrity in its natural or human-made landscape. A highly intact view would have few or be free of encroaching elements that serve to reduce the natural composition of the view. Unity is the cohesiveness of a view. This cohesion relates to visual harmony. A view that is high in unity reflects a visual composition that creates a harmonious and cohesive character.

Also affecting visual quality is viewer sensitivity to visual changes and the visual impact on the existing landscape setting. Viewer sensitivity to visual changes can either heighten or reduce the actual visual impact. Some viewers are more sensitive to visual changes, such as viewers in residential areas and special resource areas like parks or historic districts. Their sensitivity is based on familiarity with existing views, their sense of ownership of these views, and the focus of their activity in relationship to those views.

#### *Visual Setting*

The study area is relatively flat and open, with minimal vegetation. Adjacent urban development and the BNSF Railroad Intermodal Facility buildings and tracks have created an urban environment reflecting mostly paved surfaces with minimal open areas supporting landscaping or ruderal vegetation. Ruderal vegetation is defined as vegetation growing in waste places, such as along roadsides or in rubbish. Views from the bridge are dominated by the tracks and buildings associated with the BNSF rail yard. Also dominating the view are the San Bernardino Mountains, but this view is often obscured by smog or haze. From the high point of the bridge, surrounding areas are visible for some distance because of the relatively flat topography and lack of vegetation. The bridge itself is most visible to areas located west of the proposed project site because of its slightly elevated topography, minimal development, and sparse vegetation. Areas located southeast of the proposed project site have the most limited views due to dense residential development, topography, and heavy vegetation. Views of the bridge are relatively unobstructed from the eastern and western ends of the rail yard.

Land uses in the proposed project study area include industrial, commercial, residential, and public facilities. A majority of the study area incorporates the industrial uses surrounding and within the BNSF rail yard. The Metrolink Station, parking facilities, and the historical Atchison, Topeka & Santa Fe Passenger and Freight Depot are located adjacent to the proposed project within the southeast quadrant of the study area. Commercial uses are situated along Mount Vernon Avenue and on 5th Street, north of the rail yard, between Mount Vernon Avenue and I-215. Residential areas are located mainly within the northwest, northeast, and southeast quadrants of the study area with a small pocket of residential uses located within the southwest quadrant. Public facilities near the study area include Lytle Creek Wash and Channel and Nunez Park, which are located west of the proposed project site, and Plaza Park, which is adjacent to Mount Vernon Avenue and north of the proposed project site.

A small area located immediately outside of the southeast quadrant of the study area, supports native and nonnative shrubs and trees. This remnant riparian community is located adjacent to a surface drainage channel. The channel, located underneath the rail yard, surfaces south of the

Metrolink parking lot where it continues to flow southeast until it connects with the stormwater system.

#### *Important Visual Resources*

Important visual resources are land uses or structures for which the quality of the visual environment is particularly important to the use and enjoyment of that property. In the project study area, important visual resources include parks and historic properties.

La Plaza Park. Located on Mount Vernon Avenue between Victoria Street and 7th Street, this neighborhood park supports open turf, a children's play area, and a covered stage. The park is well maintained and provides a tree-shaded refuge for local residents. From within the park itself, the Mount Vernon Avenue Bridge is not visible due to surrounding commercial development and mature vegetation. From the outer edges of the park along Mount Vernon Avenue, the bridge is just visible in the distance as it rises over the BNSF rail yard to connect with 2nd Street to the south.

Nunez Park. Approximately 0.8 km (0.5 mile) in length, this park provides enough room for sports activities and field play. Located adjacent to the Lytle Creek Wash between 4th and 5th Streets, this park has limited views of the Mount Vernon Avenue Bridge. Large tree masses and urban development limit views of the bridge from within the park. The BNSF smokestack is periodically visible through the vegetation and surrounding development.

Mount Vernon Avenue Bridge. Spanning the BNSF rail yard between 4th Street to the north and 2nd Street to the south, the Mount Vernon Avenue Bridge represents an important link in the area's transportation history. The City's General Plan Circulation Element designates Mount Vernon Avenue as a Major Arterial which links San Bernardino with adjacent cities and the regional highway system (City of San Bernardino, 2005). The bridge functioned as an important link to SR 66 and was a vital part of the World War II transportation system. Approximately 310 m (1,016 feet) in length and 15 m (49 feet) in width, the bridge remained an important link in the state highway system until the completion of nearby freeways. The bridge still maintains an important role in providing grade-separated access over the BNSF rail yard. Very little alteration has occurred to the original design and construction of the bridge, giving it a high level of integrity in its original character and setting. As discussed in Section 2.1.7 (Cultural Resources), the bridge is eligible for listing in the National Register of Historic Places (NRHP) under Criterion A at the state level of significance and under Criterion C at the local level of significance.

Atchison, Topeka & Santa Fe Passenger and Freight Depot. This Moorish-Mission-style building, located on 3rd Street east of Mount Vernon Avenue on parcels adjacent to the Mount Vernon

Avenue Bridge, represents the largest of the Mission Revival railroad stations built in California. The depot, with its unique architectural styling of arches, domes, and towers, is presently a California Point of Historical Interest (#SBR-053), and is listed in the NRHP under criterion C at the state level of significance. The depot is currently being used as a rail station for Amtrak passenger service (lobby and baggage room) and as offices for the San Bernardino Association of Governments (SANBAG). Remaining portions of the station remain unoccupied. The depot maintains much of the historical materials and features from its original design. Plans to rehabilitate and adaptively reuse the depot have been approved and restoration of the depot was completed in 2004. The depot is located adjacent to the Mount Vernon Avenue Bridge.

BNSF Smokestack. Rising approximately 56 m (189 feet) into the air, this unique landmark is visible for several kilometers (miles). The smokestack, located adjacent to the BNSF rail yard east of Mount Vernon Avenue, represents the City's railroad history and provides a visual focal point for the rail yard and train station. The smokestack is well maintained and in good condition.

Palm Trees and Open Space. Located between the Atchison, Topeka & Santa Fe Passenger and Freight Depot and the Mount Vernon Avenue Bridge, this moderately maintained area provides some visual interest as a result of the height of the palm trees that line the drainage channel. This open space area is unimproved, supporting mainly weedy grasses and palms, and is currently unused. An open drainage channel, which crosses the area, supports most of the trees and shrubs within the open space. This area was once believed to be the location of the Garner's Grove picnic site, a site once used as a picnic spot for the 1850s train station and therefore considered locally historic by City of San Bernardino Historical and Pioneer Society; however, it was later discovered that the historic picnic site was actually located in a different area, outside of the immediate project area and further to the east.

#### *Existing Views*

Because it is not feasible to study every available view of the project site, key viewpoints are selected that represent the range of views available within the study area. These key viewpoints reflect views that various viewer groups within the area would have of and from the completed project. These viewpoints are further discussed in this subsection.

Viewpoint 1 (Mount Vernon Avenue Bridge). This viewpoint is located on the northbound side of the bridge from approximately its center point (refer to Figure 2-6). The view is from the pedestrian walkway looking south towards 2nd Street. This viewpoint represents a typical view from the bridge. The pedestrian view is primarily represented by this viewpoint, but the view is similar to those experienced by motorists traveling across the bridge.

The primary components of this view are the roadway associated with the Mount Vernon Avenue Bridge, the railroad tracks and parking area associated with the BNSF rail yard, and the palm trees lining the drainage channel towards the southeastern end of the project site. Also visible within this view are the large trees and utilities within the surrounding residential areas. Left of this viewpoint is the historic Atchison, Topeka & Santa Fe Passenger and Freight Depot.

This viewpoint is rated moderately high for intactness because of the limited number of encroaching elements. The relatively homogenous nature of the view gives it a moderate unity rating. The utilitarian nature of the view and lack of distinct visual elements gives this view a moderately low vividness rating. The overall visual quality for this viewpoint is moderate.

Viewpoint 2 (Kingman Street). This viewpoint is located west of Mount Vernon Avenue on Kingman Street (refer to Figure 2-7). The view is looking southeast towards the bridge. This viewpoint represents the residents' views and is a typical view of the bridge.

Taken from a residential area located northwest of the study area, this viewpoint incorporates views of the adjacent vacant lot, the residential street, BNSF smokestack (located off-camera to the left of this view), palms and other trees, telephone poles, loading cranes, and the bridge. The vacant lot, roadway, and taller features, such as the palm trees and telephone poles, dominate this view. The bridge itself blends into surrounding cranes and distant structures.

Vividness and unity are both rated as moderately low for this viewpoint because of the lack of any strong visual elements and the diversity of these elements. The lack of encroaching elements gives this viewpoint an intactness rating of high. The overall visual quality rating for this viewpoint is moderate.

Viewpoint 3 (Metrolink Station, Atchison, Topeka & Santa Fe Passenger and Freight Depot). This viewpoint is located on the pedestrian walk near the southwest corner of the Atchison, Topeka & Santa Fe Passenger and Freight Depot at the end of the wall separating the parking area from the train tracks (refer to Figure 2-8). The view is looking northwest across the tracks towards the Mount Vernon Avenue Bridge. The view from the depot shows the Mount Vernon Avenue Bridge in the distance. The features of the bridge are difficult to distinguish at this distance. This viewpoint represents the views of transit users. This view is typical of what commuters, travelers, and railway personnel would experience.

This viewpoint incorporates the distinct transit station setting with its historical character and themed pedestrian structures and lighting. These visual elements give this viewpoint a high unity rating and a moderately high vividness rating. The number of encroaching elements gives

this viewpoint a moderate intactness rating. The overall visual quality for this viewpoint is moderately high.

Viewpoint 4 (Mount Vernon Avenue). This viewpoint is located on Mount Vernon Avenue at Spruce Street (refer to Figure 2-9). The view is looking south towards the Mount Vernon Avenue Bridge. This viewpoint represents the view of commercial users. This is a typical view of the approach to the Mount Vernon Avenue Bridge.

This viewpoint incorporates a variety of uses and structural types as well as vacant properties. The lack of unifying elements, distinct visual features, and the diversity of visual elements give this viewpoint moderately low vividness and unity ratings. With minimum encroachments, this viewpoint is rated as moderately high for intactness. The overall visual quality for this viewpoint is moderately low.

Scenic Highways. Two roadways within the City have been nominated for official Scenic Highway status. The portions of SR 30 south of SR 330, located approximately 33 km (6.42 miles) from the project site, and SR-330, located approximately 11.78 km (7.32 miles) from the project site, are designated as Eligible Scenic Highways. The provisions of the California Scenic Highways program apply to these designated sections of the roadways in the City (City of San Bernardino, 2005).

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are

**Figure 2-6.** Viewpoint 1 - Mount Vernon Avenue Bridge

**Figure 2-7.** Viewpoint 2 - Kingman Street

**SOURCE**: Visual Impact Memorandum (ICF Jones & Stokes, 2009b)

**Figure 2-6 and Figure 2-7**
**Viewpoint 1 and Viewpoint 2**
**Mount Vernon Avenue Bridge Project**

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**Figure 2-8.** Viewpoint 3
Metrolink, Atchison, Topeka & Santa Fe Passenger and Freight Depot

**Figure 2-9.** Viewpoint 4 – Mount Vernon Avenue

**SOURCE**: Visual Impact Memorandum (ICF Jones & Stokes, 2009b)

**Figure 2-8 and Figure 2-9**
**Viewpoint 3 and Viewpoint 4**
**Mount Vernon Avenue Bridge Project**

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anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on Viewpoints 1, 2, 3, or 4 and the visual setting/ aesthetic conditions would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on the existing visual setting or aesthetic conditions would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under Retrofit/Rehabilitation Alternative, the visual elements of the bridge would be affected because the materials used to bring the bridge up to current seismic standards would differ from historic materials. Bridge height, lane widths, and sidewalk configurations would not change. This alternative would include complete deck replacement, girder strengthening, removal of lead paint, repainting, installation of new railings and roadway lighting, replacement or retrofit/rehabilitation of expansion joints, and the addition of crash walls around the bridge priers.

The visual effects on the Atchison, Topeka, & Santa Fe Passenger and Freight Depot would be minor because the change would not be visually apparent from that distance. The retrofit/rehabilitation of the bridge may also conflict with the previous mitigation for the Mount Vernon Avenue Corridor that requires development adjacent to a place, structure, or object of historic significance to be designed so that permitted uses and architectural design would protect the visual setting of the historic site (Mount Vernon Corridor Redevelopment Project Final Program EIR Mitigation Measure H4d). Visual simulations of Mount Vernon Avenue Bridge are provided as Figure 2-10 (a-c).

Temporary Construction Impacts. During the construction period, the Retrofit/Rehabilitation Alternative would result in short-term visual impacts associated with the permanent changes described in Alternative 2 Permanent Impacts.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Under the Locally Preferred/Replacement Alternative, possible visible changes associated with a new structure would include the increase in elevation and width. Replacement sidewalks would differ from the existing sidewalk configurations as they would be designed to meet ADA standards and Caltrans' Design Information Bulletin (DIB) 82. In

addition, vegetation could be removed to accommodate the increased width of the new bridge. The proposed structure would have a different architectural character than the current bridge; however, the City has made a commitment to make any replacement structure compatible with the existing historic property. In addition, the City has committed that the new bridge would make reference to the massing, scale, materials, and design of the existing bridge. These changes and their effects are discussed for viewpoints, important visual resources, and applicable visual policies.

*Viewpoint 1 – Mount Vernon Avenue Bridge*. The increased height of the new structures would present expanded views of surrounding areas from this viewpoint. The existing barrier railing, sidewalk, and traffic lanes would be replaced with similar treatments but with wider sidewalk and traffic lanes. Some vegetation visible to the right of this viewpoint would be removed. Physical changes associated with the new bridge structures would allow vehicular and pedestrian users, the main viewer group within this viewpoint, to focus less on safety issues and more on the surrounding environment and views. These physical changes would not substantially improve vividness, intactness, or unity within this viewpoint. With a moderate visual quality change and a low to moderate viewer sensitivity, the overall visual quality change would be moderate and would not represent an effect.

*Viewpoint 2 – Kingman Street*. Changes within this viewpoint include a bridge structure with a slightly higher profile and the removal of palm trees located directly adjacent to the existing bridge. These changes would not represent a substantial change in the visual quality of this viewpoint. The bridge is located in the background and some distance from the residential neighborhood; therefore, changes to specific structural details or elevation would represent a relatively minor change in visual quality. Removal of some palm trees would be noticeable but would represent a small portion of the existing vegetation within this viewpoint. These physical changes would have a minimal effect on the viewpoint's vividness, intactness, and unity. A low visual quality change combined with a high level of sensitivity from the residential viewer group would equal a visual quality change of moderate and would not represent an effect.

*Viewpoint 3 – Transit Station*. Changes in the character and height of the existing structure would be most visible from this viewpoint. Changes that would be visible include an increase in height and mass over the existing structure. The main visual quality change could be the physical appearance of the bridge. The existing bridge represents the city's historical character and portrays a distinct architectural quality that blends with the surrounding environment. The proposed structures would not represent a substantially different architectural character. The architectural detailing and mass of the proposed structures would be fairly visible from this viewpoint and would represent a minor change from the existing character of the structure. The

**Alternative 3, Locally Preferred / Replacement Alternative**
**Photo Simulation 1**

Before: Looking north at the bridge from 2nd Street

After

**SOURCE**: Visual Impact Memorandum Site Visit/Simulation (ICF Jones & Stokes, 2009b)

**Figure 2-10a**
**Alternative 3 Photo Simulation 1**
**Mount Vernon Avenue Bridge Project**

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**Alternative 3, Locally Preferred / Replacement Alternative**
**Photo Simulation 2**

Before: looking west from the depot to the bridge

After

**SOURCE**: Visual Impact Memorandum Site Visit / Simulations (ICF Jones & Stokes, 2009b)

**Figure 2-10b**
**Alternative 3 Photo Simulation 2**
**Mount Vernon Avenue Bridge Project**

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**Alternative 3, Locally Preferred / Replacement Alternative**
**Photo Simulation 3**

Before: Looking southeast from 4th Street and Mount Vernon Ave

After

**SOURCE**: Visual Impact Memorandum Site Visit / Simulations (ICF Jones & Stokes, 2009b)

**Figure 2-10c**
**Alternative 3 Photo Simulation 3**
**Mount Vernon Avenue Bridge Project**

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physical changes would represent a minor level of visual quality change for vividness and unity. Combined with a minor level of sensitivity to visual change from the transit viewers, the overall visual quality change would be minor and would not represent an effect.

*Viewpoint 4 – Mount Vernon Avenue*. The density of surrounding development limits views of the existing bridge from within this viewpoint. Changes that would be visible include an increase in the bridge height and approach grade of the Mount Vernon Avenue. Physical changes within this viewpoint would have a moderate to low effect on vividness, intactness, and unity. Combined with a moderate to high level of viewer sensitivity associated with the commercial viewer group, the overall visual quality change would be moderate and would not represent a visual effect.

*Important Visual Resources*. Views of the existing bridge from recreational resources within the proposed project area are limited by distance, vegetation, and urban development. Visual changes associated with the proposed project would not have an effect on these resources because of their limited exposure to the visible changes.

Of the seven visual resources in the project study area, one would be removed as a result of implementation of the Locally Preferred/Replacement Alternative: the Mount Vernon Avenue Bridge. Removal of this resource, which is eligible for listing in the NRHP, could modify the historical character of the project study area. Although the bridge would be replaced, the new structure would be compatible with the existing adjacent historic property (the Depot) and would approximate the massing, scale, materials, and design of the existing bridge in order to minimize the indirect effect.

Project effects on the remaining visual resources would be similar. The bridge is visible from the Atchison, Topeka & Santa Fe Depot and the BNSF smokestack. These resources are located in close proximity to the bridge and would be affected by the changes proposed under the Build Alternatives. The architectural character and size of the new structures would be similar to the existing bridge and would not represent an effect on the views from these resources by presenting an aesthetic element that is out of character with the existing visual environment. The Atchison, Topeka & Santa Fe Depot, located approximately 305 meters (1,000 feet) from the bridge, would be less affected by new construction or replacement of the bridge than the other identified visual resources. The new bridge would be compatible with the depot, and would be similar in mass, scale, materials, and design to the existing bridge.

*Views from the Proposed Project*. FHWA analysis also requires the consideration of the views from a proposed project. See discussion under Viewpoint 1 – Mount Vernon Avenue Bridge.

*Scenic Highways and Motorists*. The project site is not located adjacent to, or in close proximity to, a designated scenic highway. Approval of this project would not result in any damage to scenic resources in a state scenic highway.

*Compatibility with Visual Policies*. The project is generally consistent with the City's General Plan Policies. The General Plan addresses aesthetics and visual quality issues through the adoption of goals and policies. Goals and policies that address these issues, and may be of relevance to the proposed project, are found in the Land Use Element, Community Design Element, and Circulation Element and are:

- Policy 2.3.7 - Improvements shall be made to transportation corridors that promote physical connectivity and reflect consistently high aesthetic values.
- Policy 2.5.4 - Require that all new structures achieve a high level of architectural design and provide a careful attention to detail.
- Policy 5.2.1 - Establish and implement a comprehensive citywide streetscape and landscape program for previously identified corridors and include the following right-of-way improvements:
    a. street trees
    b. street lighting
    c. streetscape elements (sidewalk/crosswalk paving, street furniture)
    d. public signage
- Policy 5.3.6 - Provide for streetscape improvements, landscape and/or signage that uniquely identify architecturally or historically significant residential neighborhoods.
- Policy 6.1.1 - Maintain and rehabilitate all components of the circulation system, including roadways, sidewalks, bicycle facilities and pedestrian facilities.

The project would provide improvements to the transportation infrastructure in order to promote physical connectivity, and would reflect high aesthetic values and architectural style (Policy 2.3-7 and 2.5-4). The project would provide for streetscape improvements that would uniquely identify the architecturally or historically significant residential neighborhoods (Policy 5.3.6) since the replacement bridge would be constructed to be compatible with the existing historic resources. The project would also maintain and rehabilitate roadways, sidewalks, and pedestrian facilities within the study area (Policy 6.1.1). The replacement bridge would not conflict with previous mitigation for the Mount Vernon Avenue Corridor that requires development adjacent to a place, structure, or object of historic significance to be designed so that permitted uses and architectural design would protect the visual setting of the historic site (Mount Vernon Corridor Redevelopment Project Final Program EIR Mitigation Measure H4d).

Temporary Construction Impacts. During the construction period, the Locally Preferred/ Replacement Alternative would result in short-term visual impacts associated with the permanent changes described in Alternative 3 Permanent Impacts.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Since Mount Vernon Avenue Bridge is a historic resource that is eligible for the National Register of Historic Places; visual impact minimization measures must be in compliance with Section 106 of the National Historic Preservation Act which requires preservation of the historic character of the bridge and discourages introduction of visual elements that diminish the integrity of the bridge's significant historic features.

Visual minimization measures for project impacts addressed in the key view assessments and summarized in the previous section will consist of adhering to the following design requirements in cooperation with the SHPO and City of San Bernardino, particularly measures CR-6 and CR-7 (see Section 2.1.7, Cultural Resources; Avoidance, Minimization and/or Mitigation Measures). All visual minimization measures will be designed and implemented with the concurrence of the SHPO and City of San Bernardino.

As part of minimization measure N-1 (see Section 2.2.6, Noise; Avoidance, Minimization and/or Mitigation Measures), retaining walls will be landscaped, potentially with creeping fig, to attenuate any secondary noise reflection along both sides of the north bridge approach between Kingman Avenue and West 4th Street which accommodate an approximate 9.87 and 1.43 foot change in roadway elevation.

No avoidance, minimization, and/or mitigation measures are proposed, as construction-related visual effects are anticipated.

### 2.1.7 Cultural Resources

#### REGULATORY SETTING

"Cultural resources" as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include the National Historic Preservation Act of 1966, as amended, (NHPA), which sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic

Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 327), effective July 1, 2007.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix A for specific information regarding Section 4(f).

### AFFECTED ENVIRONMENT

#### *Completed Cultural Resources Studies*

The following cultural resources studies were completed and used in the determination of the potential effects of the proposed project:

- Archaeological Survey Report (Jones & Stokes, 2007a)
- Historic Property Survey Report (HPSR) (John W. Snyder, Preservation Services, 2001) and 1st Supplemental HPSR (Jones & Stokes, 2007b) with Finding of Effect (Jones & Stokes, 2007c)

#### Methodology

The Area of Potential Effect (APE) for Cultural Resources was signed by the Caltrans District 8 Environmental Branch Chief on August 8, 2000, and by the FHWA Transportation Engineer on December 23, 2000. Based on this APE, a Historic Property Survey Report (HPSR) was prepared in August 2001 by John W. Snyder, Preservation Services. The HPSR was submitted in August 2001 and received SHPO concurrence on March 1, 2002.

Subsequently, the project limits were changed to accommodate design modifications, requiring additional Section 106 studies. Jessica Feldman, Architectural Historian with Jones & Stokes, conducted an onsite survey of the bridge on January 15th, 2004, and returned for a second survey on April 20th, 2004. Additionally, a supplemental records and literature search was requested from the San Bernardino Archaeological Information Center at the San Bernardino Museum in San Bernardino by Ms. Feldman on April 14, 2004. The revised APE was set to include the proposed width of the rehabilitated or replacement bridge, including the maximum right-of-way for the proposed project.

In addition, Stacy Schneyder Case, an archaeologist with Jones & Stokes also conducted a field visit on April 20, 2004. Because the area around the project APE is an urban, highly built residential and commercial area and has historically been associated with railroad activities, the surveyors inspected only those portions of the APE where ground surface was exposed.

The APE Map is included in the 2007 1st Supplemental HPSR. Based on this APE map, no cultural resources were identified during the archeological survey. Other sources of data that were consulted include the following:

- The National Register of Historic Places web site (www.cr.nps.gov/nr)
- State Office of Historic Preservation Historic Properties Inventory
- California Historical Landmarks (State of California, 1996)
- California Points of Historical Interest (State of California, 1992)
- Caltrans Historic Bridge Inventory (Caltrans, March 5, 1987)
- Historic Highway Bridges of California (Caltrans, 1990)
- San Bernardino County Museum, Photograph Archives
- City of San Bernardino, Public Library (Feldheym Branch), California Room

A revised APE for the project was established in consultation with Christie Hammond, Caltrans PQS, and Fawne Yamashiro, Local Assistance Engineer, on April 26, 2004. The APE includes all areas subject to temporary or permanent changes in access (ingress and egress). Additional parcels that were identified as visually associated with the bridge were included within the revised APE.

One vacant parcel was included in the APE after having been identified by the project engineers as the proposed site for staging and construction: a parcel on the north side of 3rd Street to the west of the Mount Vernon Avenue Bridge. The APE was extended south on Mount Vernon Avenue to King Street to accommodate proposed re-striping of the street. The original APE boundary line at the intersection of Second Street and Bridge Boulevard was also revised.

A 1st supplemental HPSR (2007) was prepared to address the design modifications and additional areas that were not included in the HPSR (2001). No additional cultural resources were identified. Based on the findings in the HPSR (2001) and 1st Supplemental HPSR (2007), a Finding of Effect (FOE) was prepared to address the effects of the project on two (2) historic properties. The SHPO concurred on the findings of the FOE in September 18, 2007. A Memorandum of Agreement was drafted to address the direct and indirect adverse effects to the historic properties within the APE. (See Appendix F)

Native American coordination began with the 2001 HPSR. Subsequently, a letter was sent on April 28, 2004, to the Native American Heritage Commission (NAHC) requesting a review of the *Sacred Lands Inventory*. A reply was received on May 10, 2004, indicating no resources present in the immediate project area. The NAHC provided a list of Native American individuals and organizations that might have knowledge of cultural resources in the project area. Letters were sent to Ali Kashani, Environmental Coordinator, San Manuel Band of Mission Indians; Bernadette Brierty, Cultural Resources Coordinator, San Manuel Band of Mission Indians; Geri Farr, Tribal Administrator, San Manuel Band of Mission Indians; Mr. Marquez, Chairperson, San Manuel Band of Mission Indians; and John Valenzuela, Chairperson, San Fernando Band of Mission Indians. A response was received from Ann Brierty, GIS Coordinator for the San Manuel Band of Mission Indians, on September 17, 2004. Ms. Brierty indicated that the San Manuel Band is unaware of any culturally sensitive areas in the project area and requests that the San Manuel Band continues to receive future updates or information on the project.

#### *Cultural Resources within the APE*

The following properties were previously listed or determined eligible:

- Mount Vernon Avenue Bridge (Bridge No. 54C-0066)
- Atchison, Topeka & Santa Fe Passenger and Freight Depot
- 240 North Mount Vernon Avenue[1]

The results of the record search indicate that there are no known prehistorical archeological sites recorded within 0.5 mile of the Project APE. The records search indicated that within 0.5 mile of the project area there were three historic archaeological sites, four pending historic archaeological sites, two historic structures, and three or more possible historic structures.

No historic districts, historic landscapes, or properties of traditional cultural value were identified within or immediately adjacent to the APE.

#### *Significance of Cultural Resources*

Mount Vernon Avenue Bridge. The Mount Vernon Avenue Bridge was an important element of historic SR 66 during the Great Depression and was heralded at its time of construction (originally in 1907 and in its current configuration in 1933–34) as the western gateway to San Bernardino. Furthermore, it served a vital strategic role in the nation's transportation system during World War II as a part of SR 66, which was the primary highway link into Los Angeles and the southern California ports. The bridge allowed the railway traffic to flow uninterrupted

[1] The residence at 240 North Mount Vernon Avenue was demolished between September and October 2003. The demolition was addressed in the 2007 Supplemental HPSR.

below, which was vital to the transportation of war supplies. The bridge is eligible for listing in the NRHP under Criterion A, at the state level, for its association with historic Route 66, and under Criterion C, as a representative example of the Modern style and for its innovative and rare use of materials (specifically steel from a previous bridge at the same location). The period of significance was established as 1934, the year the bridge was constructed. Structures formally determined eligible for the NRHP are automatically listed on the California Register of Historic Resources (CRHR).

Atchison, Topeka & Santa Fe Passenger and Freight Depot. The Atchison, Topeka & Santa Fe Passenger and Freight Depot is located at 1170 West 3rd Street, approximately 310 meters (1,020 feet) east of the Mount Vernon Avenue Bridge. It was constructed between 1918 and 1921. The Moorish-Mission-style structure represents the largest of the Mission Revival railroad stations built in California. The Atchison, Topeka & Santa Fe Passenger and Freight Depot has undergone an extensive rehabilitation and restoration as part of the Santa Fe Depot Historic Restoration Project. The lobby and baggage room of the depot is currently being used as a rail station for Amtrak passenger service and following the completion of the restoration/ rehabilitation project, the depot now also houses office and administration facilities of SANBAG. The building retains much of the historical materials and features from its original design. The depot, with its unique architectural styling of arches, domes, and towers, is a California Point of Historical Interest (#SBR – 053), and was listed in the NRHP under Criterion C on February 2, 2001, as an outstanding example of Mission Revival style architecture with the period of significance (between 1918 and 1921).

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring

is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on cultural resources would not occur. Under the No Build Alternative, no modifications to existing structures or lands would occur; therefore, no effects on historical or archaeological cultural resources would result.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on cultural resources would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. This alternative would widen the bridge by 20 feet (curb-to-curb), seismically retrofit the structure, and correct other deficiencies. The Retrofit/Rehabilitation Alternative would not cause physical destruction or damage to the Mount Vernon Avenue Bridge, nor would this alternative cause physical destruction or damage to this historic property. Some of the design elements and proposed actions associated with the retrofit/rehabilitation of the bridge would result in adverse effects on some of the bridge's character-defining features and would not be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Under this alternative, the Mount Vernon Avenue Bridge would be seismically retrofitted and rehabilitated in place. The proposed design components in this alterative would result in a finding of Adverse Effect. Based on the Finding of Effect study that was prepared for the project, it was concluded that Retrofit/Rehabilitation Alternative would have no effect on the Santa Fe Depot and would have an adverse effect on the Mount Vernon Avenue Bridge.

Temporary Construction Impacts. Although no archaeological resources or human remains are anticipated to be encountered during construction of the proposed project, unknown buried resources could exist. Measures are provided at the end of this subsection to address these resources if they are discovered.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Locally Preferred/Replacement alternative would demolish the historic property, which would constitute an adverse effect; however, the effect from this alternative could be alleviated to a greater extent than the effect of the Retrofit/Rehabilitation Alternative (see Alternative 2, Retrofit/ Rehabilitation Alternative impact discussion). Based on the

proposed construction methods and the application of the Criteria of Adverse Effect, the Department has determined that there are historic properties that would be affected pursuant to Section 106 PA Stipulation IX.B, and that the project would have an adverse effect on the Mount Vernon Avenue Bridge.

This alternative would require the complete demolition and removal of the Mount Vernon Avenue Bridge, which would constitute an adverse effect. The Finding of Effect report prepared for the project has demonstrated that the existing bridge cannot be retrofitted and rehabilitated without altering the historic character of the bridge, and the proposed alterative would significantly damage the integrity of this historic property. Furthermore, the proposed Locally Preferred/Replacement Alternative would demolish the historic property, which would also constitute an adverse effect, but the effect would be substantially more adverse than the retrofit/rehabilitation alternative (see the previous Alternative 2, Retrofit/Rehabilitation Alternative impact discussion). Based on the Finding of Effect report that was prepared for the proposed project, it was concluded that the Locally Preferred/Replacement Alternative would have no adverse effect on the Depot under Criterion 2(i) and would have an adverse effect on the bridge under Criteria 2(i), 2(ii), and 2(v). Based on the proposed construction alternatives and the application of the criteria of adverse effect, the Department has determined that there are historic properties that would be affected pursuant to Section 106 PA Stipulation IX.B, and that the undertaking would have an adverse effect on the Mount Vernon Avenue Bridge.

The Department, as assigned by FHWA, requested concurrence from SHPO in this finding of an Adverse Effect pursuant to the Section 106 Programmatic Agreement (PA), Stipulation XC, and has consulted with SHPO regarding the resolution of adverse effects, pursuant to Section 106 PA, Stipulation XI and 36 CFR 800.6(a), and 800.6(b)(1). SHPO concurred on the finding of adverse effect on September 18, 2007.

The proposed project would “use” a Section 4(f) historic resource. Refer to Appendix A, Programmatic Section 4(f) Evaluation for a discussion of potential effects. As an alternative to preparing a full individual Section 4(f) evaluation, a programmatic evaluation may be utilized. Programmatic Section 4(f) evaluations streamline the documentation and approval process and amount of interagency coordination that is required for an individual Section 4(f) evaluation. Draft and final evaluations do not need to be prepared and FHWA legal sufficiency review is not required. Interagency coordination is required only with the official(s) with jurisdiction and not with DOI, USDA, or HUD. There are currently four approved Nationwide Programmatic Section 4(f) Evaluations generally for (1) Historic Bridge Projects (2) Projects with minor involvements of Section 4(f) land (3) Projects with minor involvements of historic sites and (4) Bikeway/Walkway Projects. The Mount Vernon Avenue Bridge Project qualifies for the Historic

Bridge Nationwide Programmatic Section 4(f) Evaluation which is applied to projects which meet the following criteria:

1. Bridge replacement or rehabilitation using Federal funds.
2. Bridge is not a National Historic Landmark.
3. Project requires the use of a bridge which is on, or is eligible for, listing on the National Register of Historic Places.
4. Facts of the project are detailed in the evaluation's Alternatives, Findings, and Mitigation discussion.
5. There is a Section 106 agreement with the State Historic Preservation Officer (SHPO) (and/or the Advisory Council on Historic Preservation, as needed)

The historic bridges covered by this Programmatic Section 4(f) Evaluation are historic, yet also part of either a Federal-aid highway system or a state or local highway system. The programmatic evaluation can be used because, even though historic bridges are on or eligible for inclusion on the National Register of Historic Places, the bridges must perform as an integral part of a modern transportation system.

The programmatic evaluation acknowledges that the project will impair the historic integrity of the bridge either by rehabilitation or replacement/demolition. If the project meets the certain conditions as outlined in requirements for this programmatic evaluation, it will satisfy the requirements of Section 4(f) and confirm there is (1) no feasible and prudent alternative and (2) that the project includes all possible planning to minimize harm. Caltrans intends to approve a programmatic section 4(f) evaluation prior to approval of the FONSI. Caltrans' anticipates that SHPO will be providing us their approval on the MOA after circulation of this environmental document to complete the Section 106 process and following that Caltrans will prepare and approve the programmatic section 4(f) evaluation.

Temporary Construction Impacts. Although no archaeological resources or human remains are anticipated to be encountered, during construction of the proposed project, unknown buried resources could exist. Measures are outlined at the end of this subsection to address these resources if they are discovered.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following minimization measures were identified in the Draft Memorandum of Agreement (MOA) which will be submitted to SHPO, pursuant to Section 106 PA Stipulation XI, 36 CFR 800.6(a) and 800.6(b)(1). This MOA will be finalized and submitted to SHPO after public review of the EA and proposed measures, as listed in this subsection. A copy of the approved MOA will be inserted in the Final IS/EA.

- **CR-1:** Prior to the start of any work that could adversely affect any characteristics that qualify the Mount Vernon Avenue Bridge as an historic property, the Department shall ensure that the recordation measures specified in Section A of the MOA are completed.

- **CR-2:** The City shall take a large-format (4" by 5" or larger negative size) photographs showing the Mount Vernon Avenue Bridge in context as well as details of its historic engineering features. Photographs shall be processed for archival permanence in accordance with the Historic American Engineering Record (HAER) photographic specifications. Views of the Mount Vernon Avenue Bridge shall include: (1) Contextual views showing the bridge in its setting; (2) Elevation views; (3) Views of the bridge's approaches and abutments; and (4) Detail views of significant engineering and design elements.

- **CR-3:** The City shall make a reasonable and good faith effort to locate historic construction drawings for the Mount Vernon Avenue Bridge. If these drawings are located, the City shall photographically reproduce plans, elevations and selected details form these drawings in accordance with HAER photographic specifications. If they are legible in this format, reduced size 8 ½" by 11") copies of the construction drawings may be included as pages of the report cited in subsection A.3. of the MOA rather than photographed and included as photographic documentation. The City shall promptly notify the Department if historic construction drawings for Bridge #54C-0066 cannot be located. In that event, the requirements of this paragraph shall not apply.

- **CR-4**: A written historical and descriptive report for the Mount Vernon Avenue Bridge will be completed. This report will provide a physical description of the bridge, discuss its construction and its significance under applicable National Register criteria, and address the historical context for its construction following the format and instructions in the September 1993 National Parks Service (NPS) HAER Guidelines for Preparing Written Historical and Descriptive Data guidelines for written documentation.

- **CR-5**: Upon completion, copies of the documentation prescribed in subsection A.3 of the MOA shall be retained by the Department, District 8, and offered to the California Room of the City's Feldhym Library.

- **CR-6**: The Department shall ensure that the City constructs the replacement bridge in accordance with a design developed in consultation with the SHPO and submitted to the SHPO for comments, to minimize the indirect visual impact (profile, scale, color, and material) of the replacement bridge on the setting of the adjacent National Register listed historic property, the Atchison, Topeka and Santa Fe Passenger and Freight Depot (Santa Fe Depot). The proposed bridge replacement design is depicted in Attachment B of the MOA

and simulations for the replacement are included in Attachment C of the MOA. In addition, existing photographs of the Mount Vernon Avenue Bridge are located in Attachment D of the MOA.

- **CR-7:** The Department in consultation with the SHPO, shall ensure that the replacement bridge will be designed to included architectural details (bridge railing, lighting, concrete abutments, stairways) in order to convey the character-defining elements of the original historic structure and to be visually compatible with the adjacent Santa Fe Depot.

- **CR-8:** The Department shall ensure that the City replace any landscape elements (fan palm trees – *Washingtonia robusta*), which are 50 years or older and contribute to the historic setting of the bridge, which were removed as a result of the bridge replacement project. Appropriate replacement trees should be planted in those planned landscaped areas northwest and southeast of the bridge alignment.

Additionally, the project proposes other aesthetic measures to ensure that the proposed replacement bridge is consistent in architecture, scale, and size to the existing bridge and surroundings, to the extent feasible.

The following minimization measures are standard requirements which are required by the Department for all projects:

- **Standard CR-A:** If cultural materials 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.

- **Standard CR-B:** If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

## 2.2 Physical Environment

### 2.2.1 Water Quality and Stormwater Runoff

#### REGULATORY SETTING

***Federal Requirements: Clean Water Act***

In 1972, the Federal Water Pollution Control Act was amended, making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977, and was renamed the Clean Water Act (CWA). The CWA, as amended in 1987, directed that storm water discharges are point source discharges. The 1987 CWA amendment established a framework for regulating municipal and industrial storm water discharges under the NDPES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act.
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) establishes addresses storm water and non-storm water discharges.
- 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 (ACOE).

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

***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 (liquid, solid, or otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives) required by the CWA, and regulating discharges to ensure that the objectives are met. 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 state listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires establishing Total Maximum Daily Loads (TMDLs). TMDLs establish allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

#### *State Water Resources Control Board and Regional Water Quality Control Boards*

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

- Municipal Separate Storm Sewer System Program. The U.S. EPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water.

  As part of the NPDES program, U.S. EPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for storm water discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

- Construction Activity Permitting. Construction General Permit (Order No. 2009-009-DWQ, adopted on September 2, 2009, became effective on July 1, 2010. The permit will regulate storm water discharges from construction sites that result in a DSA of 1 acre or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation

results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 – 3. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP).

During the construction phase, compliance with the permit 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 storm water pollution.

#### AFFECTED ENVIRONMENT

The project site is located within the Santa Ana River watershed, in the Inland Santa Ana Basin. The RWQCB, Santa Ana Region (Region 8) is responsible for regulating the watercourse in the Santa Ana River watershed. The RWQCB regulates surface water and groundwater quality through the adoption of water quality plans and standards and issuance of wastewater permits.

The Santa Ana River, which flows from northeast to southwest, is located approximately 5.3 km (3.3 miles) south of the project site. Lytle Creek, located approximately 0.6 km (0.4 mile) to the southwest of the project site, flows southeast into the Santa Ana River. A surface drainage channel located immediately outside of the northwest portion of the project area flows to the southeast and connects with the City stormwater system. This channel is located underground through the rail yard and surfaces south of the Metrolink parking lot.

There are no sole-source aquifers in San Bernardino County.

The City of San Bernardino is under the jurisdiction of the Santa Ana Regional Water Quality Control Board. The City is subject to NPDES permit requirements. To ensure compliance with Section 402, if there is an increase of impervious surface of more than 5,000 square feet, a determination is made that the project would require the development of a Water Quality Management Plan (WQMP) that includes post-construction Best Management Practices. The WQMP is not a Stormwater Pollution Prevention Plan (SWPPP). A WQMP focuses on post-construction water quality protection through the use of site design, source control, and treatment control BMPs, whereas a SWPPP only covers the constructional phase of a project. The

SWPPP, which identifies construction activities that may cause discharges of pollutants or waste into waters of the United States or waters of the State, as well as measures to control these pollutants, is prepared by the construction contractor and is subject to the City's and Department's review and approval.

Groundwater Plume. Due to historic releases at the BNSF rail yard, a groundwater plume affected with chlorinated solvents is located in the vicinity of the project area. An aerial photograph depicting the approximate location of groundwater contamination plumes is presented as Figure 2-11. This figure shows the most recent detail of the extent of plume found in the records reviewed at the RWQCB. The plume is approximately 1,000 feet east of the bridge; however, solvent contaminated soil is reportedly not present underneath the bridge. The plume is in the immediate vicinity of the eastern portion of the proposed shoofly track area.

According to information obtained from the State Water Resources Control Board's (SWRCB) GeoTracker website, regional groundwater flow beneath the site is inferred to the southeast, toward the Santa Ana River. The extent of groundwater contamination is currently under investigation under the oversight of the RWQCB. Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[2]

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded.

[2] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, adverse effects on water quality would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on water quality would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts. No construction-related effects on water quality would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. The Retrofit/Rehabilitation Alternative is not expected to substantially affect the quantity or quality of surface water in the study area. Bridge retrofit/rehabilitation would result in a bridge that is wider than the existing structure. This would result in a slight increase in impervious surfaces, thereby contributing to an increase in the amount of onsite runoff. BMPs would be implemented in compliance with the NPDES permit requirements to minimize the potential for project effects on water quality, including the violation of any water quality standards or waste discharge requirements.

The Retrofit/Rehabilitation Alternative would not alter the existing drainage patterns beyond a potentially slight increase in surface runoff. Drainage improvements would be designed in consultation with the appropriate agencies and would not substantially alter the existing conditions.

Temporary Construction Impacts. Refer to discussion under Alternative 3, Temporary Construction Impacts.

***Alternative 3, Locally Preferred/Replacement Alternative***

Permanent Impacts. The Locally Preferred/Replacement Alternative is not expected to substantially affect the quantity or quality of surface water in the study area. The new replacement bridge would be wider than the existing structure. This would result in a slight increase in impervious surfaces, thereby contributing to an increase in the amount of onsite runoff. BMPs would be implemented in compliance with the NPDES permit requirements to minimize the potential for project effects on water quality, including the violation of any water quality standards or waste discharge requirements.

The Locally Preferred/Replacement Alternative would not alter the existing drainage patterns beyond a potentially slight increase in surface runoff. Drainage improvements would be designed in consultation with the appropriate agencies and would not substantially alter the existing conditions.

The water table elevation affects structure foundation design. During PS&E final design, the geotechnical consultant would make foundation recommendations based on structure loads, soil properties, and the range of groundwater elevations that might be experienced at the project site throughout the life of the structure. The geotechnical stability of the bridge would not be a function of the time of year of construction. The wider footprint of the new bridge would not lead to any uncertainty in its geotechnical stability.

Groundwater elevation affects structure foundation design. Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[3] Abutment foundations would be founded on piles and based on the pier type selected for the new bridge, drilling activities would be limited to approximately 100 feet. Nevertheless, groundwater could be negatively affected by the foundation construction for the proposed project.

*Exposure to Contaminated Groundwater*. There is a potential for encountering groundwater contamination during the planned construction of the bridge due to pile driving near the plume and under Mount Vernon Avenue Bridge. Exposure to potential contaminated soils and groundwater during construction activities could result in substantial health effects. Measures

[3] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

are identified to avoid exposure to potentially contaminated groundwater, thereby minimizing risk of effects.

While the plume is in the immediate area of the shoofly tracks, these tracks are only used to replace existing tracks during pending bridge construction activities. Activities to place the shoofly tracks are not likely to encounter groundwater. Regardless of the depth of groundwater, it is unlikely that the plume will extend underneath Mount Vernon Avenue Bridge because the plume is reported to be migrating to the southeast from its current location. Nevertheless, groundwater could be negatively affected by the foundation construction for the proposed project.

Temporary Construction Impacts.

*Release of Hazardous Materials*. The release of hazardous materials could occur as a result of spills from vehicles using the bridge; however, the project is not anticipated to increase the potential for vehicles carrying hazardous materials to travel in the project area or increase the potential for accidents to occur in the project area. Furthermore, the transportation and cleanup of hazardous materials is strictly regulated by the EPA, the state and federal Occupational Health and Safety Administrations (OSHA), and a number of other federal, state, and local agencies. Therefore, effects are not anticipated.

*Surface Water Runoff*. During project construction, surface water runoff from the project site could increase pollution to local surface waters. Substantial earthwork would be required for the proposed bridge. In addition, excavation would be required for support columns, foundations, and other improvements. Exposed soils associated with grading and excavating activities could increase the potential for erosion and increased sediment loadings on nearby surface waters. In addition, surface water runoff could also result in the discharge of construction-related pollutants—such as petroleum, solvents, and cement—into local surface waters. Given the required implementation of BMPs, potential effects on surface water runoff would be minimized. Recommended measures to ensure avoidance of the release of sediment or other construction-related pollutants that could affect water quality are provided.

The proposed project will be regulated under city of San Bernardino MS4 / NPDES Permit accordance with the CWA and will require the preparation of a Stormwater Data Report (SWDR). A SWPPP, which will identify BMPs to mitigate water quality effects on receiving waters resulting from surface water runoff from the project site, will be required as part of the General Permit from the SWRCB. Short-term construction effects associated with soil erosion and discharge of other construction-related pollutants into surface waters can be avoided or minimized through the implementation of BMPs for erosion control in compliance with the NPDES permit requirements and the SWDR. Erosion control measures will include slope

stabilization, the use of berms to direct runoff away from exposed soils and slopes, and proper grading techniques. Implementation of these measures will minimize potential effects.

*Substantial Erosion or Siltation On Site or Off Site as a Result of Substantial Alteration to the Existing Drainage Pattern.* Potential project effects associated with alterations to the existing drainage pattern could occur as a result of construction activities. The Locally Preferred/Replacement Alternative would require grading of the immediate project area, which could result in the erosion of disturbed earth by wind and/or water.

*Exposure to Contaminated Groundwater.* Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[4] Based on the pier type selected for the new bridge under this alternative, drilling activities would be limited to approximately 100 feet; nevertheless, groundwater could be negatively affected by the proposed project.

There is a possibility that groundwater would be impacted and that the groundwater may be contaminated. Exposure to potentially contaminated groundwater during construction activities could result in substantial health effects. Measures are identified to avoid exposure to potentially contaminated soils and groundwater, thereby minimizing risk of effects. During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted. If groundwater would be impacted, then it would be tested to determine if it's contaminated.

Additional analyses would be performed to more accurately establish depth to groundwater at the proposed project site. During the PS&E final design phase of the project, a study of seasonal variation of groundwater depths would be prepared that would include a search of historic records of groundwater depths in the area. If it is determined that drilling activities associated with the proposed project would affect existing groundwater, minimization measures would be developed and implemented to minimize project effects on groundwater.

The water table elevation affects both the methods of construction. Intermediate piers would be founded on larger diameter pile shafts with steel casings. The steel casings would be driven into the ground and would be partially cleaned out: the soil inside the hollow steel casings would be removed to a specified depth. Pile shafts may extend below the groundwater elevation. In the

[4] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

case that some groundwater enters the steel casings, the groundwater inside the steel casings would be removed either by being displaced by the concrete that would be placed to form the pile foundation, or by pumping the water out after first sealing the end of the casing against further water intrusion.

*Substantial Erosion or Siltation On Site or Off Site as a Result of Substantial Alteration to the Existing Drainage Pattern.* The proposed project would not alter the existing drainage patterns beyond a potentially slight increase in surface runoff. Drainage improvements would be designed in consultation with the appropriate agencies and would not substantially alter the existing conditions.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

The proposed project is not anticipated to result in effects on water quality.

- **WQ-1:** During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted. If groundwater would be impacted, then it would be tested to determine if it's contaminated.
- **WQ-2:** The project will have an addition of more than 5,000 square feet of impervious surface; therefore, in accordance with RWQCB Order Number R8-2002-0012, NPDES Permit No. CAS618036, a Water Quality Management Plan (WQMP) will be necessary to establish post construction Best Management Practices (BMP's).
- **WQ-3:** A SWPPP, which will identify water quality BMPs, will be required to address short-term construction effects associated with soil erosion and discharge of other construction-related pollutants.

### 2.2.2 Geology/Soils/Seismicity/Topography

#### 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."

#### AFFECTED ENVIRONMENT

##### *Topography*

The proposed project site is located in the City of San Bernardino along Mount Vernon Avenue, between 2nd Street and 5th Street. The site's elevation is approximately 330 meters (1,100 feet). The area's general elevation ranges from a maximum of 1,200 meters (4,000 feet) at a point just inside the northernmost corporate boundary at Bailey Canyon to a minimum of approximately

293 meters (960 feet) at the point where the Santa Ana River passes beneath the Interstate 10 (I-10)/I-215 interchange, south of the project site. The majority of the City lies in the Santa Ana River Valley immediately at the base of the San Bernardino Mountains. The San Bernardino Mountains are a part of the Transverse Range of southern California. Most of the City gently slopes from north-northeast to south-southwest. Steep foothills form a corridor along the northeastern perimeter of the City, roughly parallel to the San Andreas Fault. These foothills define the most abrupt change in topography within the City. The project area itself is generally flat without topographic relief.

Drainages originating in mountain canyons have carved channels along their course en route to the valley's main drainage, the Santa Ana River. These drainages, when not completely channelized, result in changes in topography that vary in degree. In particular, Lytle Creek and the Santa Ana River form wide, braided channels with extensive bank systems. The banks and channel bottoms display discernible differences in topography.

#### *Geology or Seismic Hazards*

Seismic Hazards Mapping Act of 1990. The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sec. 2690–2699.6) is intended to avoid or reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction,[5] and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Earthquake Fault Zoning Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

The seismic setting for the proposed site is similar to most of the surrounding region. The project site is located in the highly seismic southern California region within the influence of several fault systems that are considered to be active or potentially active. An active fault is

[5] *Liquefaction* is a phenomenon in which the strength and stiffness of a soil are reduced by earthquake shaking or other rapidly applied loading. Liquefaction and related types of ground failure are of greatest concern in areas where well-sorted sandy unconsolidated sediments are present in the subsurface and the water table is comparatively shallow.

defined by the state of California as a "sufficiently active and well-defined fault that has exhibited surface displacement within Holocene time (about 11,000 years)." A potentially active fault, which shows movement within Pleistocene time (11,000 to 1.6 million years ago), is one capable of producing potentially damaging seismic shaking. Blind faults, without surface expression, are capable of generating an earthquake or other potentially active seismic sources may exist that are not currently identified (Kleinfelder, 1999).

Alquist-Priolo Earthquake Fault Zoning Act**.** California's Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Sec. 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (referred to as *earthquake fault zones*). It defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. It also encourages and regulates seismic retrofits of some types of structures.

San Bernardino is located between several active fault zones, including the San Andreas Fault, the San Jacinto Fault, the Glen Helen Fault, and the Loma Linda Fault. Each of these faults is classified as Alquist-Priolo Special Study Zones under the Alquist-Priolo Earthquake Fault Zoning Act (City of San Bernardino, 2005). The San Andreas Fault's main line passes 5 miles to the northeast of the proposed project site. This fault is capable of a maximum credible earthquake with a magnitude of 8.0 on the Richter scale,[6] which could result in a peak acceleration of 0.9 g (g represents a unit of measurement of the acceleration) for soils in the project site. The San Jacinto fault, which is located approximately 1.2 km (0.75 mile) west of the project, is capable of an earthquake of magnitude 7.5 on the Richter scale (Kleinfelder, 1999). Faults identified to be active or potentially active are not known to be present within the project footprint. The buried inferred trace of the Loma Linda Fault is located approximately 0.5 km (0.3 mile) northeast of the site (Fife et al. 1976). This buried fault acts locally as a groundwater barrier and trends parallel to the San Jacinto fault, connecting with the Glen Helen fault to the northwest. The site is not located in a State of California-designated earthquake fault zone for ground rupture (Hart and Bryant 1997). The site is located within a seismic risk zone as designated by both the City and County for the Loma Linda fault (City of San Bernardino, 1989).

[6] The Richter scale is used to measure the magnitude of earthquakes, as determined by seismograph measurements of the height of ground oscillations during an earthquake. Because the scale is based on a logarithm, every whole-number step in the scale represents about 31 times more energy than the amount represented by the preceding whole number value. The Richter scale has no upper limit; the largest known earthquakes have magnitudes in the 8.8 to 8.9 range (USGS, 2000).

The site is also located in an area currently designated as Moderately High to Moderate for liquefaction susceptibility (City of San Bernardino, 2005). Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[7] Based on soil boring data collected in September 1997, the saturated onsite soils consist of either dense to very dense sand or stiff to very stiff sandy silt. The relative density of the sandy soil is high enough to be resistant to liquefaction and the silty soil layer has sufficient fines and high enough Standard Penetration Test (SPT) blowcounts to resist widespread liquefaction; therefore, liquefaction potential is not considered to be a design issue (Earth Mechanics, Inc., 2009 update).

Groundwater elevations varied from elevation 1,019 feet to elevation 1,037 feet in the borings drilled in September 1997. Since the ground surface elevation is approximately 1,082 feet at this site, the groundwater depth varied from 45 feet to 63 feet at the time of the investigation. Historical high groundwater elevations would be used for PS&E final design. Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[8]

#### *Soils*

The proposed project site is located on an alluvial fan consisting of Tujunga loamy sand, a part of the Tujunga Series. Runoff is slow to very slow. The hazard of water erosion is slight, but the soil would blow away if left unprotected. Available water capacity is 10 to 13 centimeters (4 to 5 inches) (U.S. Geological Survey [USGS]) 2000). The site is also located within an area of potential ground subsidence (City of San Bernardino, 2005).

#### *Mineral Resources*

Surface Mining and Reclamation Act of 1975. The principal piece of legislation addressing mineral resources in California is the Surface Mining and Reclamation Act of 1975 (Public Resources

[7] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

[8] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

Code Sec. 2710–2719), which was enacted in response to land use conflicts between urban growth and essential mineral production. The stated purpose of this act is to provide a comprehensive surface mining and reclamation policy that would encourage the production and conservation of mineral resources while ensuring that environmental effects of mining are prevented or minimized, that mined lands are reclaimed and residual hazards to public health and safety are eliminated, and that consideration is given to recreation, watershed, wildlife, aesthetics, and other related values. The Surface Mining and Reclamation Act of 1975 provides for the evaluation of an area's mineral resources using a system of mineral resource zone classifications that reflect the known or inferred presence and significance of a given mineral resource.

The project site is not within a designated Mineral Resources Zone (City of San Bernardino, 2005).

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on geology/soils/seismicity/topography would not occur. However, the No Build Alternative does not assume that the existing bridge would undergo seismic retrofitting. This alternative was studied by the City in 1996 and later discontinued in favor of constructing a new bridge. The most recent bridge sufficiency rating for the existing

bridge determined the existing structure to be both functionally and structurally obsolete; therefore, the bridge would be susceptible to potential structural collapse as a result of seismic activity.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on geology/soils/seismicity/topography would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, the seismic retrofit would improve the structure's ability to resist seismic forces by strengthening almost all existing bents through the use of cross-braces and retrofitting 14 bent footings by adding concrete overlays and additional pilings. The superstructure girders would be tied together at the expansion joints by rod restrainers. The bridge would be rehabilitated by providing repair measures to the extensive cracking and chipping throughout the bridge deck and concrete substructure.

Because the project site is near known active faults, strong ground motion could occur in the vicinity of the project site in the event of a substantial earthquake. An earthquake of magnitude 7.5 that could generate a peak bedrock acceleration of approximately 0.7g could occur at the San Jacinto Fault zone, which is located within 1.2 km (0.75 mile).

The project area is subject to strong ground shaking associated with earthquakes on the San Andreas, the San Jacinto, the Glen Helen, and the Loma Linda fault systems. The bridge design would be required to meet the standard construction practices for the Department and City of San Bernardino transportation projects, which require compliance with the latest seismic standards. Measures are identified to minimize the potential for effects involving seismically induced strong ground shaking.

The most up-to-date Acceleration Response Spectra curves for soil profile D ($M = 7.5 \pm 0.25$) in the California Department of Transportation Seismic Design Criteria would be used for the proposed bridge design.

The proposed project site is located on an alluvial fan consisting of Tujunga loamy sand, a part of the Tujunga Series. Runoff is slow to very slow. The hazard of water erosion is slight, but the soil would blow away if left unprotected. Development of the bridge would cause groundbreaking during construction. As a result, soil could be exposed to rain and wind, potentially causing accelerated erosion and deposition from the project site. Siltation could be an issue for this project because there is a surface drainage channel located in the northwest portion of the project area. The drainage channel flows to the southeast and connects with the city

stormwater system. Federal and state jurisdictions require that an approved SWPPP be prepared for projects that involve greater than 1 acre of disturbance. A SWPPP specifies BMPs that would prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters. Earthwork in the project area would be performed in accordance with the most current edition of the California Department of Transportation Standard Specifications and/or the requirements of applicable government agencies.

Temporary Construction Impacts. The Retrofit/Rehabilitation Alternative would utilize a small quantity of borrow and fill (consisting mostly of structural backfill), which is commercially available. Because the quantities being used would be small, a disposal site has not been identified. The existing Metrolink parking lot would be used for staging and storage after a parking structure is constructed to replace the existing parking lot. The use of borrow/fill and staging/storage sites would not result in construction-related effects.

Earthwork in the project area would be performed in accordance with the latest edition of the California Department of Transportation Standard Specifications and/or the requirements of applicable government agencies

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Because the project site is near known active faults, strong ground motion could occur in the vicinity of the project site in the event of a substantial earthquake. An earthquake of magnitude 7.5 that could generate a peak bedrock acceleration of approximately 0.7g could occur at the San Jacinto Fault zone, which is located within 1.2 km (0.75 mile).

The project area is subject to strong ground shaking associated with earthquakes on the San Andreas, the San Jacinto, the Glen Helen, and the Loma Linda fault systems. The bridge design would be required to meet the standard construction practices for the Department and City of San Bernardino transportation projects, which require compliance with the latest seismic standards. Measures are identified to minimize the potential for effects involving seismically induced strong ground shaking.

The most up-to-date Acceleration Response Spectra curves for soil profile D (M = 7.5± 0.25) in the California Department of Transportation Seismic Design Criteria would be used for the proposed bridge design.

The proposed project site is located on an alluvial fan consisting of Tujunga loamy sand, a part of the Tujunga Series. Runoff is slow to very slow. The hazard of water erosion is slight, but the soil would blow away if left unprotected. Development of the bridge would cause

groundbreaking during construction. As a result, soil could be exposed to rain and wind, potentially causing accelerated erosion and deposition from the project site. Siltation could be an issue for this project because there is a surface drainage channel located in the northwest portion of the project area. The drainage channel flows to the southeast and connects with the city stormwater system. Federal and state jurisdictions require that an approved SWPPP be prepared for projects that involve greater than 1 acre of disturbance. A SWPPP specifies BMPs that would prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters. Earthwork in the project area would be performed in accordance with the most current edition of the California Department of Transportation Standard Specifications and/or the requirements of applicable government agencies.

Temporary Construction Impacts. The Locally Preferred/Replacement Alternative would utilize a small quantity of borrow and fill (consisting mostly of structural backfill), which is commercially available. Because the quantities being used would be small, a disposal site has not been identified. The existing Metrolink parking lot would be used for staging and storage after a parking structure is constructed to replace the existing parking lot. The use of borrow/fill and staging/storage sites would not result in construction-related effects.

Earthwork in the project area would be performed in accordance with the latest edition of the California Department of Transportation Standard Specifications and/or the requirements of applicable government agencies

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

To ensure that, during construction, potential effects involving geology, soils, seismicity, and topography are minimized to an acceptable level, the following avoidance, minimization and/or mitigation measures will be implemented.

- **GEO-1:** Detailed earthwork recommendations will be provided in the design geotechnical report, and these recommendations will be incorporated into the project specifications.
- **GEO-2:** The depth of the groundwater table below the site, and the potential for liquefaction, will be further evaluated during the PS&E final design phase.
- **GEO-3:** Erosion control measures will also include the use of berms to direct runoff away from exposed soils and slopes, and proper grading techniques will be utilized.
- **GEO-4:** For fill slopes, surface water runoff shall be directed to suitable outlets to reduce the likelihood of surficial erosion of the slopes.
- **GEO-5:** Slopes shall be planted with vegetation as soon as feasible after the completion of grading to reduce the amount of erosion on the slope face.

- **GEO-6:** A 3-m (10-foot) buffer, using fencing or flags, will be established around the drainage channel. Appropriate erosion or runoff controls will be implemented to prevent siltation effects on the nearby wetlands.
- **GEO-7:** Due to its proximity to the San Andreas Fault, the bridge would be seismically designed to consider a maximum credible earthquake of magnitude of 8.0 on the Richter scale.

### 2.2.3 Paleontology

#### REGULATORY SETTING

Paleontology is the study of life in past geologic time based on 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 USC 431-433], Federal-Aid Highway Act of 1956 [23 USC 305]).

#### AFFECTED ENVIRONMENT

A paleontological literature and records review was conducted at the Division of Geological Sciences at the San Bernardino County Museum on September 5, 2007 (Scott 2007) and a Paleontological Identification Report / Paleontological Evaluation Report was prepared (ICF Jones & Stokes, 2009a). A review of geological mapping of the study area revealed that the site has low potential to contain significant fossils in the Holocene sediments; however, Pleistocene or older alluvium may be present at depth. If present, this alluvium would have high paleontological sensitivity. The record search of the Regional Paleontology Locality Inventory revealed that one previously recorded paleontological resource is located within 0.5 mile to the south of the project site.

#### ENVIRONMENTAL CONSEQUENCES

***Alternative 1, No Build***

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with

installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on paleontological resources would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on paleontological resources would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Refer to the discussion for Alternative 3.

Temporary Construction Impacts. Refer to the discussion for Alternative 3.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. If excavation is restricted to depths of approximately 4.6 meters (15 feet) below the existing ground surface, then older Pleistocene sediments are not expected to be encountered. At these depths, no program to mitigate effects on paleontological resources is recommended.

Temporary Construction Impacts. If excavation is restricted to depths of no more than 4.6 m (15 feet) below the existing ground surface, then older Pleistocene sediments are not expected to be encountered. At these depths, no program to mitigate effects on paleontological resources is recommended.

Subsurface disturbance beyond 15 feet is limited to driving cast-in-place-steel-shell (CISS) type piles. Paleontological monitoring for this construction activity is not feasible since this activity will not generate original ground that can be monitored for paleontological resources. Actual excavation exceeding 4.6 m (15 feet) below the existing ground surface would not occur as part of this project therefore a program to mitigate effects on paleontological resources is not recommended.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed, effects are unlikely.

### 2.2.4 Hazardous Waste/Materials

#### REGULATORY SETTING

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

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

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

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

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.

#### AFFECTED ENVIRONMENT

The analysis presented in this section is based on the following studies:

- *Mount Vernon Avenue Bridge Replacement Project Initial Site Assessment* prepared by Ninyo & Moore (August 2005, updated January 2010, approved February 2010)

- *Asbestos and Lead-Based Paint Survey for the Mount Avenue Bridge Project* prepared by Ninyo & Moore (August 2005, updated January 2010, approved February 2010)

#### *Historical Records Review*

Based on a review of historical records, discussions with regulatory officials, and site observations, the current Mount Vernon Avenue Bridge appears to have occupied the site since approximately 1934. The proposed shoofly track area has been part of an active railway for approximately 100 years. Based on review of the directories, adjacent properties appear to have been used for residential, commercial, and restaurant purposes. In addition, a former gasoline station was shown on the northwest corner of Mount Vernon Avenue and 2nd Street (208 Mount Vernon) in the 1943 through 1955 directories. There was no indication of the other former gasoline station noted at 5th Street and Mount Vernon Avenue on the aerial photographs.

#### *Environmental Database Search*

Computerized, environmental information database searches were performed by Environmental FirstSearch (FirstSearch) on April 19, 2004 (Mount Vernon Avenue Bridge) and August 12, 2004 (shoofly track area) and updated on for the complete project area on July 20, 2010. The FirstSearch reports included searches of federal, state, and local databases. The following paragraphs describe the databases that contain noted properties of environmental concern, and include a discussion of the regulatory status of the facilities and potential environmental impact to the site. Groundwater is expected to flow in a southeasterly direction in the vicinity of the site.

#### *Spills – 1990: Distance Searched – 0.5 mile*

The RWQCB maintains reports of sites that have records of spills, leaks, investigations, and cleanups. The proposed shoofly track area was not listed on this database. One facility, a BNSF property (engine house at 1500 West Rialto) appears on the list (engine house case). According to the FirstSearch report, a release of total petroleum hydrocarbons and solvents has impacted soil and groundwater. The status was listed as “remedial action.”

Ninyo & Moore interviewed Mr. Maneck Chichgar of the RWQCB about the engine house case. Mr. Chichgar indicated that this case site was approximately 610 meters (2,000 feet) west of Mount Vernon Avenue and approximately 610 meters (2,000 feet) south of the proposed shoofly track area. Contaminated soil was excavated from six excavation areas adjacent and south of the former UPRR Engine House located at 1500 West Rialto.

#### *State Sites (Calsites, CORTESE): Distance Searched – 0.5 mile*

The State Sites database includes the Calsites database and CORTESE database. The Calsites database is maintained by the Cal-EPA, Department of Toxic Substances Control (DTSC). This database contains information on Annual Workplan Sites, and both known and potentially contaminated properties. Neither the site nor properties within a 0.5-mile radius were listed on this database.

The July 2010 FirstSearch Report revealed that the ATSF rail yard case (depot case site) at 1170 3rd Street was listed on the Cortese database (case number 083601230T). According to Mr. Chichgar of the RWQCB, this case was near the depot building located approximately 457 meters (1,500 feet) east of Mount Vernon Avenue and 488 meters (1,600 feet) south of the proposed shoofly track area (depot case). Mr. Chichgar indicated that the depot case was a spills, leaks, investigations, and cleanup (SLIC) case and was mistakenly identified as a LUST case.

On August 16, 2004, Ninyo & Moore interviewed Mr. Ben McIntosh of the DTSC regarding the depot case. According to Mr. McIntosh, the depot case was removed from the DTSC's portion (Cal-Sites) of the Cortese list in 1996. The depot case site is not listed on the active Cortese cases presented on the DTSC website.

#### *Leaking Underground Storage Tank (LUST) Lists: Distance Searched – 0.5 mile*

Databases of the LUST information system are maintained by SWRCB and RWQCB, Santa Ana Region. The bridge was not listed on this database. Three properties within 0.8 km (0.5 mile) of the bridge were listed on this database. The first facility, Conoco (Kayo oil/Econo) at 1169 2nd Street is approximately 0.37 km (0.23 mile) to the east of and cross-gradient from the bridge. According to the FirstSearch report, this facility experienced an unauthorized chlorinated hydrocarbon release which impacted groundwater. The status was listed as "case closed."

The second facility, Merit Oil Company at 1405 Rialto Avenue, is approximately 0.43 km (0.27 mile) southwest from the bridge. According to the FirstSearch report, this facility experienced an unauthorized gasoline release which impacted soil only. The status was listed as "case closed." Based on the regulatory status, directions, and distances from the site, these two facilities are not considered environmental concerns to the site.

The third facility is the depot case site. According to the FirstSearch report, a solvent release has affected groundwater. The status was listed as "pollution characterization." This case is actually a SLIC case and was mistakenly categorized as a LUST case.

The proposed shoofly track area was not specifically listed. Fourteen properties within 0.8 km (0.5 mile) of the proposed shoofly track area were listed on this database. Six of the 14 cases were closed cases. Six (including Kayo Oil and Merit Oil Company properties) of the remaining eight cases were more than 0.4 km (0.25 mile) from the proposed shoofly track area. Based on the regulatory status or the distance from the proposed shoofly track area, there is a low likelihood that these properties have a negative environmental effect on the proposed shoofly track area.

Pollution characterization is currently underway at the remaining two properties (depot case site and Inco Service Station at 796 5th Street). According to the FirstSearch report, a solvent release in 1989 had affected the groundwater at the depot case site. The Inco service station (Inco) is approximately 274 m (900 feet) northeast of the proposed shoofly track area. This was a "soil only" case (gasoline release). Based on the information contained in the FirstSearch report and the case type, there is a low likelihood that the depot case site and Inco properties have a negative environmental effect on the site.

#### *Solid Waste Landfill Sites (SWLF): Distance Searched – 0.5 mile*

The SWLF database lists open and closed solid waste disposal facilities and transfer stations. The Mount Vernon Avenue Bridge and the proposed shoofly area were not listed on this database. Three properties located within a 0.8-km (0.5-mile) radius from the Mount Vernon Avenue or the proposed shoofly track area were listed on this database. According to the FirstSearch report, the facilities are either tire dealers or waste tire storage facilities. No violations were listed with the three facilities. Based upon the regulatory status and locations, these three facilities are not considered environmental concerns to the site.

#### *Environmental Regulatory Agency Inquiries*

Ninyo & Moore requested regulatory agency records pertaining to the bridge from San Bernardino County Environmental Health Services (EHS), South Coast Air Quality Management District (SCAQMD), and RWQCB. According to representatives of EHS and SCAQMD, records cannot be searched for sites without an assigned street address; therefore, they were unable to search for records.

Ninyo & Moore interviewed RWQCB's representatives regarding environmental conditions under the bridge and at the proposed shoofly track area.

Groundwater Plume. Due to historic releases at the BNSF rail yard, a groundwater plume affected with chlorinated solvents is located in the vicinity of the project area. An aerial photograph depicting the approximate location of groundwater contamination plumes is

presented as Figure 2-11. This figure shows the most recent detail of the extent of plume found in the records reviewed at the RWQCB. The plume is approximately 1,000 feet east of the bridge; however, solvent contaminated soil is reportedly not present underneath the bridge. Soil underlying the bridge within the BNSF yard was reported to have been impacted with petroleum hydrocarbons and metals from historical railway operations. Soil beneath the bridge was excavated and/or remediated in place and a regulatory closure of the case was granted by the RWQCB on March 3, 2004. The plume is in the immediate vicinity of the eastern portion of the proposed shoofly track area; however, solvent contaminated soil in this area has been remediated and the RWQCB issued a case closure letter on September 9, 2008. Ninyo & Moore also interviewed Mr. Mick Hardin of BNSF regarding current and past uses of the proposed shoofly areas and the extent and nature of releases at and near the proposed shoofly area. Mr. Hardin indicated that the proposed shoofly area was used as a driveway for maintenance vehicles after the roundhouse and diesel and car shops were removed in the early 1990s. Prior historical features include former brine ponds, a roundhouse, and former diesel and car shops north of the proposed shoofly track area. The source of brine is not known.

Mr. Hardin indicated that hydrocarbon contaminated soil near the railroad tracks was excavated, backfilled and capped (bridge case). The source of this contamination was random spills and leaks which occurred over several years in this area. The cap reportedly consisted of 48.3 centimeters (19 inches) of base material topped with 15.2 centimeters (6 inches) of new asphalt (total 63.5 centimeters or 25 inches). The capped area extended to the southern half of the proposed shoofly track area.

Beyond soil contamination, the extent of groundwater contamination is currently under investigation under the oversight of the RWQCB. Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[9]

According to information obtained from the State Water Resources Control Board's (SWRCB) GeoTracker website, regional groundwater flow beneath the site is inferred to the southeast, toward the Santa Ana River. Regardless of the depth of groundwater, it is unlikely that the plume will extend underneath Mount Vernon Avenue Bridge because the plume is reported to be

[9] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

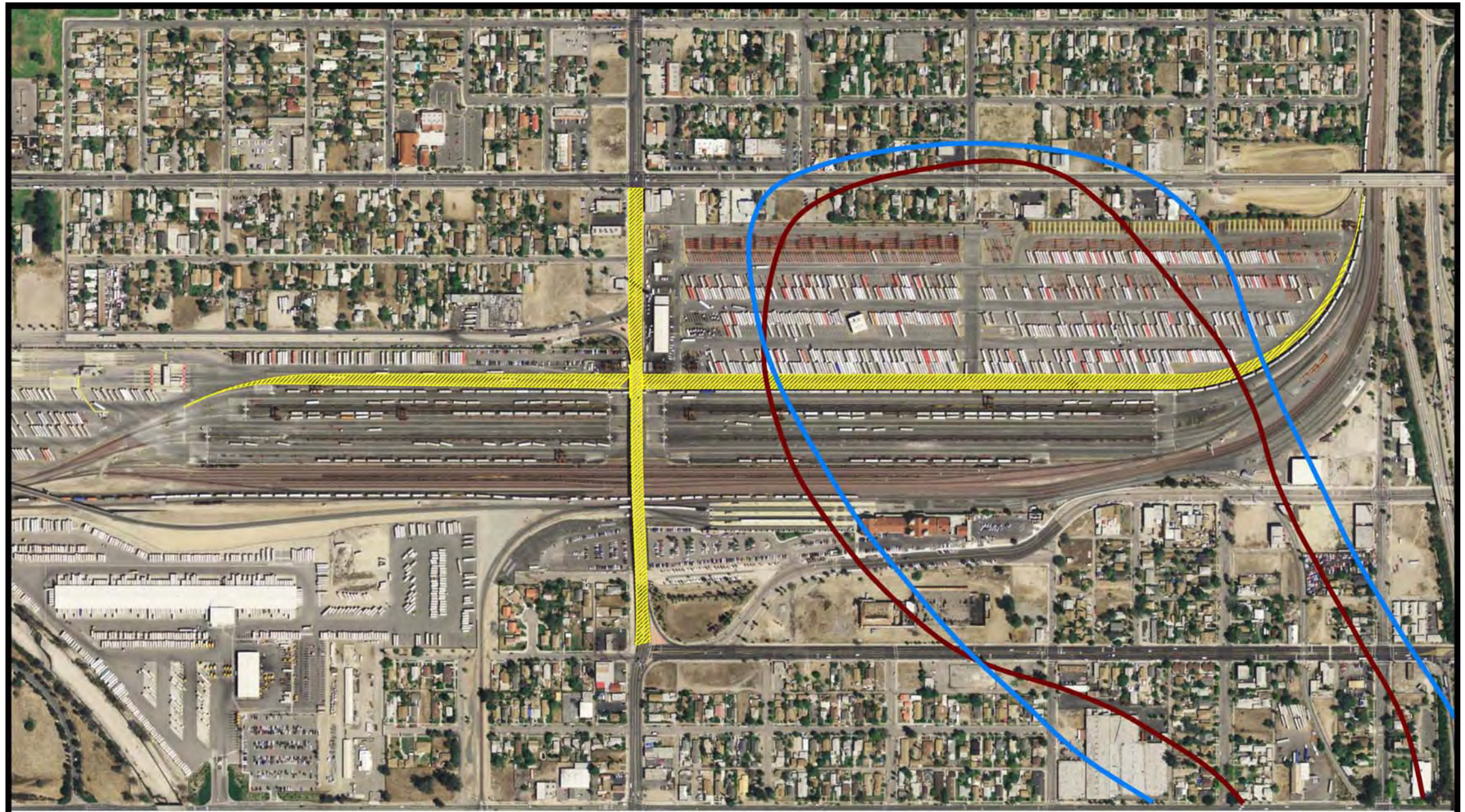
migrating to the southeast from its current location. While the plume is in the immediate area of the shoofly tracks, these tracks are only used to replace existing tracks during pending bridge construction activities. Activities to place the shoofly tracks are not likely to encounter groundwater.

#### *Limitations of the Evaluation*

The information in this subsection is based on the Initial Site Assessment (ISA) prepared by Ninyo & Moore on October 14, 2009. The opinions and recommendations presented in the ISA are based upon the results of a site reconnaissance and a review of available background information. The evaluation did not include subsurface exploration, soil or water sampling, or chemical analysis. Further assessment of possible environmental impacts from past on-site activities and activities on surrounding facilities may be accomplished by a more comprehensive assessment, which would likely include excavation or on-site soil borings, soil sampling and analysis, and installation of groundwater monitoring wells. The opinions presented in the ISA apply to site conditions existing at the time of the study, and cannot be taken to apply to site changes or conditions of which the evaluators were not aware and/or have not had the opportunity to evaluate. Opinions and judgments are based on the evaluator's understanding and interpretation of current regulatory standards, and should not be construed as legal opinions. In the event conditions change from those described in the study, the evaluator reserves the right to review such conditions and to modify, as appropriate, the assessments and conclusions provided in their report.

The opinions and recommendations presented in the ISA are based upon the results of a site reconnaissance and a review of available background information. The evaluation did not include subsurface exploration, soil or water sampling, or chemical analysis. Further assessment of possible environmental impacts from past on-site activities and activities on surrounding facilities may be accomplished by a more comprehensive assessment, which would likely include excavation or on-site soil borings, soil sampling and analysis, and installation of groundwater monitoring wells. The opinions presented in the ISA apply to site conditions existing at the time of the study, and cannot be taken to apply to site changes or conditions of which the evaluators were not aware and/or have not had the opportunity to evaluate. Opinions and judgments are based on the evaluator's understanding and interpretation of current regulatory standards, should not be construed as legal opinions. In the event conditions change from those described in the study, the evaluator reserves the right to review such conditions and to modify, as appropriate, the assessments and conclusions provided in their report.

For ACMs and LBP, the evaluator's opinions and recommendations regarding environmental conditions, as presented in this report, are based on limited sampling and chemical analysis.



AERIAL FROM GOOGLE EARTH, 2009.

**LEGEND**

APPROXIMATE SITE BOUNDARY

APPROXIMATE LIMITS OF TETRACHLOROETHYLENE CONTAMINATION

APPROXIMATE LIMITS OF TRICHLOROETHYLENE CONTAMINATION

N

APPROXIMATE SCALE IN FEET

0 600 1200

NOTE ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

DATE

10/09

**GROUNDWATER CONTAMINATION PLUME**

MOUNT VERNON AVENUE BRIDGE AND
PROPOSED SHOOFLY TRACK AREA
SAN BERNARDINO, CALIFORNIA

**SOURCE**: Initial Site Assessment (Ninyo & Moore, 2010a)

**Figure 2-11**
**Groundwater Contamination Plume**
**Mount Vernon Avenue Bridge Project**

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Further assessment of potential environmental impacts may be accomplished by a more comprehensive assessment. The samples collected and used for testing, and the observations made, are believed to be representative of the area(s) evaluated. However, if additional suspect ACMs are encountered during demolition activities, these materials should be sampled by qualified personnel, and analyzed for content prior to further disturbance. In addition, please note that quantities of ACMs are approximate. These numbers should be confirmed prior to removal or repair activities. The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Variations in site conditions may exist and conditions not observed or described in this report may be encountered during subsequent activities. Please also note that this study did not include an evaluation of geotechnical conditions or potential geologic hazards. The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of specific chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory which is certified by the State of California to conduct such tests. The evaluator has no involvement in, or control over, such testing and analysis. The evaluator, therefore, disclaims responsibility for any inaccuracy in such laboratory results. The conclusions, recommendations and opinions are based on an analysis of the observed site conditions. It should be understood that the conditions of a site can change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which the evaluator has no control.

#### *Site Reconnaissance*

Historical research, document review, and site assessment activities were conducted between July 6 and August 7, 2009. In general, the following items were noted:

Mount Vernon Avenue Bridge

- The bridge is situated above an active BNSF Railway - former Atchison, Topeka and Santa Fe Railway (ATSF) yard since its construction in approximately 1934.
- Soil underlying the bridge within the BNSF yard has been impacted with petroleum hydro-carbons and metals from historical railway operations. Impacted soil underlying a portion of the northern end of the bridge was excavated. Regulatory closure for impacted soil was granted on May 2003.
- Residual herbicides suspected to be used along the railroad tracks may be present in soil be-neath the bridge.

- The bridge is approximately 1,000 feet west of a chlorinated solvent plume in groundwater which has resulted from historic releases at the BNSF rail yard. The groundwater and extent of contamination is currently under investigation under the oversight of the Regional Water Quality Control Board (RWQCB).
- Two former gasoline stations appear to have been located within the immediate vicinity of the bridge: one on the northwest corner of 5th Street and Mount Vernon Avenue and the other on the southwest corner of 2nd Street and Mount Vernon Avenue.

Proposed Shoofly Track Area

- The proposed shoofly track area is in the northern portion of the BNSF railroad yard. This portion of the site extends through most of the length of the railroad yard from the approximate western end of the railroad yard to the intersection of 5th Street and I Street (northeastern corner of the railroad yard).
- The proposed shoofly track area west of the bridge contained railroad tracks leading into the train roundhouse since the railroad yard was developed in the early 1900s.
- The proposed shoofly area east of the bridge was occupied by a roundhouse and diesel and car shops (maintenance) extended onto the proposed shoofly track area east of Mount Vernon Avenue. The roundhouse and the diesel and car shops were removed in the early 1990s.
- A vapor extraction system/vapor treatment system (VES/VTS) was installed to remediate solvent contaminated soil in the immediate vicinity of the former diesel shops in the pro-posed shoofly track area. A no further action (NFA) was issued and for solvent contaminated soil by the RWQCB and a closure letter was issued for the BNSF property on September 9, 2008. The groundwater and extent of contamination is currently under investigation under the oversight of the RWQCB.
- A fueling area, wash pad and an oil/water separator system are adjacent and north of the pro-posed shoofly track area and west of the bridge. The fueling area contains a 6,000-gallon diesel above ground storage tank (AST), a 2,000-gallon gasoline AST, two 240-gallon diesel ASTs, two 240-gallon unleaded fuel ASTs, Seventeen 55-gallon drums of used filters and motor oil, two 240-gallon ASTs with motor oil and one 240 gallon AST with used motor oil, and a small shed with four 55 gallon drums containing new and used motor oil. Surface staining was observed around the stored petroleum products.
- The wastewater/oil-and-water separator system located on BNSF property north of the pro-posed shoofly area and west of the Mount Vernon Avenue Bridge consists of a below grade oil/water separator and an oil recovery AST. Wash water from the wash pads drains into the below grade oil/water separator. The recovered oil is pumped back to an oil recovery AST.
- Soil on BNSF property in the vicinity of the proposed shoofly track area has been impacted with petroleum hydrocarbons and metals from historical railway operations. Impacted soil, west of the bridge, was excavated between October 1988 and May 2003. Regulatory closure of the impacted soil was granted on May 12, 2003.
- Based on the historic use as a rail yard and the common use of herbicides on railroad tracks, residual herbicides may be present in soil beneath the asphalt along the proposed shoofly track area.

- The eastern portion of the proposed shoofly track area is in the immediate vicinity of a chlorin-ated solvent plume in groundwater which has resulted from historic releases at the BNSF/ATSF property. The extent of the groundwater contamination is currently under investigation under the oversight of the RWQCB.

#### *Asbestos Survey and Lead-Based Paint Survey*

On April 26, 2004, Ninyo & Moore personnel conducted an asbestos survey, and Barr & Clark was contracted to conduct a lead-based paint (LBP) survey of the site. The purpose of the survey was to evaluate the subject site for the presence of asbestos-containing materials (ACMs) and LBP. The objective of the survey was to gain information regarding site conditions to assist in the possible demolition and/or renovation activities associated with the bridge. Approximately 30.5 meters (100 feet) of pipe insulation, assumed to be asbestos-containing, was located on the east side of the bridge. This material was inaccessible and could not be sampled. The presence of ACMs does not necessarily mean that the health of the occupants is endangered. If these materials are in good condition and have not been disturbed or deteriorated, exposures are expected to be negligible; however, when ACM deteriorates, or is disturbed or is in damaged condition, such as during demolition operations, asbestos fibers may be released creating a potential health hazard for building occupants, maintenance personnel, and contractors.

Based on the analytical results of samples collected during the LBP survey, the following painted surfaces contained concentrations of lead greater than 0.7 milligrams per square centimeters ($mg/cm^2$):

- metal beams and columns under the bridge,
- concrete foundations (yellow) on the north side of bridge, under support columns,
- concrete foundations (red) on the south side of the bridge under support columns,
- yellow stripes on asphalt and concrete pavement in the middle of Mount Vernon Avenue,
- red curbs along the northwest and northeast sides of Mount Vernon Avenue, and
- yellow curbs on the north and south center islands.

The California Department of Health Services (DHS) stipulates that materials containing an amount equal to or in excess of 1.0 $mg/cm^2$, or more than half of 1% (0.5%) by weight, constitute a LBP.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary

shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects from hazardous waste/materials would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects from hazardous waste/materials would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, permanent impacts are unlikely to occur due to measures which address the impacts discussed in the following "Temporary Construction Impacts" subsection.

Temporary Construction Impacts. As part of the Retrofit/Rehabilitation Alternative, new footings would be excavated and new piles drilled. Widening and retrofitting the existing structure would involve improvements to the substructure to meet seismic standards. Anticipated additional work would include complete deck replacement, girder strengthening, removal of lead paint, repainting, installation of new railings and roadway lighting, replacement or retrofit/rehabilitation of expansion joints, and the addition of crash walls around the bridge piers. Effects would be similar to those described under Alternative 3.

***Alternative 3, Locally Preferred/Replacement Alternative***

Permanent Impacts. Under the Locally Preferred/Replacement Alternative, permanent impacts are unlikely to occur due to measures which address the impacts discussed in the following "Temporary Construction Impacts" subsection.

Temporary Construction Impacts.

*Release of Hazardous Materials*. The release of hazardous materials could occur as a result of spills from vehicles using the bridge; however, the project is not anticipated to increase the potential for vehicles carrying hazardous materials to travel in the project area or increase the potential for accidents to occur in the project area. Furthermore, the transportation and cleanup of hazardous materials is strictly regulated by the EPA, the state and federal OSHA, and a number of other federal, state, and local agencies. Therefore, effects are not anticipated.

*Exposure to Contaminated Soils and Groundwater*. The potential for encountering soil and groundwater contamination during the planned construction of the bridge and the potential for encountering soil contaminated with chemicals of concern (COCs) during construction of shoofly tracks in the BNSF rail yard is high due to pile driving near the plume and under Mount Vernon Avenue Bridge. Exposure to potential contaminated soils and groundwater during construction activities could result in substantial health effects. Measures are identified to avoid exposure to potentially contaminated soils and groundwater, thereby minimizing risk of effects. While the plume is in the immediate area of the shoofly tracks, these tracks are only used to replace existing tracks during pending bridge construction activities. Activities to place the shoofly tracks are not likely to encounter groundwater. Regardless of the depth of groundwater, it is unlikely that the plume will extend underneath Mount Vernon Avenue Bridge because the plume is reported to be migrating to the southeast from its current location. Nevertheless, groundwater could be negatively affected by the foundation construction for the proposed project.

*Exposure to Asbestos-Containing Materials and Lead-Based Paint*. Asbestos-containing materials (ACMs) and lead-based paint (LBP) are suspected to be present on site. Exposure to these substances during demolition activities could result in substantial health effects. Measures are identified to avoid exposure to these substances thereby minimizing risk of effects.

*Exposure to Herbicide Contaminated Soils*. The BNSF right-of-way has been present since at least the early 1900s. Herbicides were typically used along railroad rights-of-way to control weeds. Herbicides may be present in soil in the vicinity of the BNSF right-of-way. Exposure to potential herbicide-containing soils during construction activities could result in substantial health effects. Measures are identified to avoid exposure to potentially contaminated soils, thereby minimizing risk of effects.

### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Should access rights be granted by the applicable property owners, all testing for hazardous waste will be done during the PS&E final design phase of the project in order to limit disturbance to property to one occasion, as requested by BNSF. To ensure potential effects involving hazardous materials/waste during construction are avoided or reduced, the following avoidance, minimization and/or mitigation measures will be implemented.

- **HAZ-1:** Work on BNSF property requires the completion and submittal of fees for an environmental access permit submitted to the Permit Department of BNSF.
- **HAZ-2:** Due to the possibility that contaminated groundwater may be encountered, a Geotechnical Report will be prepared determine if groundwater will be impacted. If groundwater will be impacted, then it will be tested to determine if it's contaminated.
- **HAZ-3:** If contaminated groundwater is encountered, a contaminated groundwater contingency plan should be implemented and should include procedures for segregation, sampling, and chemical analysis. Contaminated groundwater must be disposed of in accordance with dewatering requirements per the National Pollutant Discharge Elimination System (NPDES) process. In the event that disposal requirements are not required as part of the NPDES process, contaminated groundwater will be profiled for disposal and will be transported with appropriate hazardous or non-hazardous waste manifests by a state-certified hazardous material hauler to a state-certified disposal or recycling facility licensed to accept and treat the type of waste indicated by the profiling process.
- **HAZ-4:** If demolition construction activities will impact soil beneath the two former gasoline stations, soil samples should be collected and analyzed for petroleum hydrocarbons and VOCs during the PS&E final design phase.
- **HAZ-5:** For work in the immediate vicinity of Mount Vernon Avenue Bridge, soil (and groundwater if encountered) beneath the bridge within the proposed demolition and construction zones should be sampled and analyzed for chemicals of concern (COCs) including petroleum hydrocarbons, metals, volatile organic compounds (VOCs), polychlori-nated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and chlorinated herbicides. Testing should be done during the PS&E final design phase to reduce the impact on BNSF operations. The testing should be done in one mobilization as requested by BNSF.
- **HAZ-6:** For work in the immediate vicinity of the shoofly track area, soil (and groundwater if encountered) beneath the proposed shoofly track area should be sampled and analyzed for petroleum hydrocarbons, metals, VOCs, PCBs, SVOCs, and chlorinated herbicides. All testing should be done during the PS&E final design phase to reduce the

impact on BNSF operations. The testing should be done in one mobilization as requested by BNSF.

- **HAZ-7:** A soil monitoring plan should be prepared prior to construction and should be implemented during all phases of construction. Disturbed soils should be monitored for visual evidence of contamination (e.g., staining or discoloration). If visual evidence of contamination is observed, the soil should be monitored for the presence of Volatile Organic Compounds (VOCs) using appropriate field instruments such as organic vapor measurement with photoionization detectors (PIDs) or flame ionization detectors (FIDs).
- **HAZ-8:** If the monitoring procedures indicate the possible presence of contaminated soil, a contaminated soil contingency plan should be implemented and should include procedures for segregation, sampling, and chemical analysis of soil. Contaminated soil will be profiled for disposal and will be transported with appropriate hazardous or non-hazardous waste manifests by a state-certified hazardous material hauler to a state-certified disposal or recycling facility licensed to accept and treat the type of waste indicated by the profiling process. The contaminated soil contingency plan should be developed and in place during all construction activities.
- **HAZ-9:** A hazardous materials contingency plan should be prepared to address the potential for discovery of unidentified USTs, septic systems, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction. This contingency plan should address UST decommissioning, field screening and materials testing methods, mitigation and contaminant management requirements, and health and safety requirements.
- **HAZ-10:** The identified ACMs will not be disturbed. Prior to renovation or demolition work that will disturb identified ACMs, a licensed Cal/OSHA-Certified Asbestos Consultant and abatement removal contractor should remove the ACMs. A Notification will be sent to South Coast Air Quality Management District (SCAQMD) 10 working days prior to any ACM removal or demolition activities as per Rule 1403. In addition the Notification will include applicable fees as per Rule 301.
- **HAZ-11:** The identified LBPs will not be disturbed. Any LBPs in a non-intact condition will be abated and the component properly encapsulated. Prior to demolition work that will disturb identified LBPs, a licensed lead abatement removal contractor will remove the LBPs.
- **HAZ-12:** Applicable laws and regulations will be followed, including those provisions requiring notification to building occupants, renovation contractors, and workers of the presence of asbestos and LBP.
- **HAZ-13:** Per Caltrans requirements, projects involving the removal of yellow traffic striping, thermoplastic paint, will be performed in accordance with Caltrans Department

Standard Special Provision (SSP) XE 14-001.

- **HAZ-14:** The OSHA regulations for construction found in Title 29 CFR part 1926 include occupational exposure to lead under the standard number 1926.62. Additional requirements are found in the California standard 8 CCR Section 1532.1. Any employer covered by these standards is obligated to initially determine if any employee may be exposed to lead at or above the action level (29 CFR 1926.62(d)(1)(i) and 8 CCR 1532.1(d)). Additionally, the employer is obligated to prepare a project specific Lead Compliance Plan (LCP) in accordance with 29 CFR 1926.62 (e)(2). It is recommended that a LCP be developed and implemented for construction related activities associated with this project site.

*Cost*. The presence of COCs and herbicides is pending soil sampling that would occur prior to project construction. Therefore, currently the extent of any COCs and herbicides is unknown, if any is present, and an exact cost for minimizing and avoiding these hazards cannot be provided. Additionally, a licensed Cal/OSHA-Certified Asbestos Consultant and abatement removal contractor should remove the ACMs, and fees for this contractor cannot be established until a contract has been executed. Similarly, a licensed lead abatement removal contractor would remove the LBPs, and fees for this contractor cannot be established until a contract has been executed. Despite these factors, however, the build alternatives can be roughly estimated to have a $300,000 cost for cleanup of contaminated soils.

### 2.2.5 Air Quality

#### REGULATORY SETTING

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws 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). 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 (NO2), ozone (O3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO2).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), and particulate

matter (PM). California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as SCAG for the County of San Bernardino and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter. A region is a "nonattainment" area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in "nonattainment" areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

### AFFECTED ENVIRONMENT

#### *Topography and Climate*

The project site is located in the South Coast Air Basin (SCAB). The distinctive climate of the SCAB is determined by its terrain, which includes a coastal plain with connecting broad valleys and low hills, and by its geographic location, bounded by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climate pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds (warm west winds blowing from east of Los Angeles).

Many of the same factors that make living in southern California so desirable also contribute to the worst smog problem in the nation. Gentle ocean breezes carry pollutants into the inland

valleys, where they are trapped by the surrounding mountains. Thermal inversions act like a lid over the SCAB. Bright sunshine and warm temperatures cause some pollutants to react with each other, forming even more pollution.

According to the Western Region Climate Center, the average mean January temperature in the City is 52.8 degrees Fahrenheit, while in August the average mean temperature increases to 78.7 degrees Fahrenheit. The average high temperature during July is 96.6 and August is 96.5 degrees, ideal temperatures for ozone formation.

The City averages 3.45 inches of precipitation in February, its peak month. The City averages 16.07 inches of rain per year, with virtually no rain during the summer months of June, July, and August.

#### *Air Quality*

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the State of California and the federal government have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 2-21 (California and National Ambient Air Quality Standards) shows the state and federal standards for a variety of pollutants.

#### *Air Quality Management Planning*

The South Coast Air Quality Management District (SCAQMD) and SCAG are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SCAB. The most recent comprehensive plan is the 2007 AQMP, which was adopted by the SCAQMD Governing Board on June 1, 2007. The Final 2007 Air Quality Management Plan (AQMP) is designed to meet both state and federal Clear Air Act planning requirements for all areas under AQMD jurisdiction, including the South Coast Air Basin (Los Angeles County, Orange County, San Bernardino County and Riverside County) and the Riverside County portion of the Salton Sea Air Basin (including the Coachella Valley). This AQMP focuses on ozone and PM2.5. The AQMP also incorporates significant new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling related to carbon monoxide (CO), ozone, particulate matter (PM10/PM2.5), and nitrogen dioxide (NO2). The AQMP provides local guidance for the SIP, which provides the framework by which air quality basins would achieve attainment of the state and federal ambient air quality standards.

Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as non-attainment areas. Severity classifications for O3 non-attainment include and range in magnitude from marginal, moderate, serious, severe, and

extreme cases. The attainment status for the SCAB is included in Table 2-22 (Selected Criteria Pollutants: Attainment Status for the South Coast Air Basin).

**Table 2-21. California and National Ambient Air Quality Standards**

| Pollutant | Averaging Time | CAAQS[a] | NAAQS[b] |
|---|---|---|---|
| Ozone ($O_3$) | 1 hour | 0.09 ppm[c] | — |
| | 8 hour | 0.070 ppm | 0.075 ppm |
| Carbon Monoxide (CO) | 1 hour | 20 ppm | 35 ppm |
| | 8 hour | 9.0 ppm | 9 ppm |
| Nitrogen Dioxide ($NO_2$) | 1 hour | 0.18 ppm | NA |
| | Annual | 0.030 ppm | 0.053 ppm |
| Sulfur Dioxide ($SO_2$) | 1 hour | 0.25 ppm | — |
| | 24 hour | 0.04 ppm | 0.14 ppm |
| | Annual | — | 0.030 ppm |
| Inhalable Particulate Matter (PM10) | 24 hour | 50 µg/m$^3$[c] | 150 µg/m$^3$ |
| | Annual | 20 µg/m$^3$ | — |
| Fine Particulate Matter (PM2.5) | 24 hour | — | 35 µg/m$^3$ |
| | Annual | 12 µg/m$^3$ | 15.0 µg/m$^3$ |
| Sulfates | 24 hour | 25 µg/m$^3$ | — |
| Lead (Pb) | 30 day | 1.5 µg/m$^3$ | — |
| | Calendar quarter | — | 1.5 µg/m$^3$ |
| | Rolling 3-month average | — | 0.15 µg/m$^3$ |
| Hydrogen Sulfide | 1 hour | 0.03 ppm | — |
| Vinyl Chloride | 24 hour | 0.01 ppm | — |

**SOURCE:** California Air Resources Board, November 17, 2008.

**NOTES:** [a] The CAAQS for $O_3$, CO, $SO_2$ (1-hour and 24-hour), $NO_2$, $PM_{10}$, and $PM_{2.5}$ are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.
[b] The NAAQS, other than $O_3$ and those based on annual averages are not to be exceeded more than once a year. The $O_3$ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.
[c] ppm = parts per million by volume; µg/m$^3$ = micrograms per cubic meter.

The State of California has designated the SCAB as being in extreme non-attainment for ozone and in non-attainment for PM10, PM2.5, and CO. The EPA has designated South Coast Air Basin as being in extreme non-attainment for ozone and in serious non-attainment for PM10 and CO (see Table 2-22).

**Table 2-22. Selected Criteria Pollutants: Attainment Status for the South Coast Air Basin**

| Pollutants | Status | |
|---|---|---|
| | **Federal** | **State** |
| Ozone | ~~1-hour: Extreme Non-Attainment~~<br>8-hour: Severe-17 Non-Attainment | 1-hour: Non-Attainment<br>Not yet rated for 8-hour standard |
| Particulate Matter (PM10) | Serious Non-Attainment | Non-Attainment |
| Particulate Matter (PM2.5) | Non-Attainment | Non-Attainment |
| CO | Serious Non-Attainment | Attainment |

**SOURCE:** California Air Resources Board, November 17, 2008.

The SCAB is also designated as attainment of the CAAQS for SO2, lead, and sulfates. Areas that are extreme non-attainment of the ozone standard must meet attainment by November 15, 2010. Areas considered as serious non-attainment of the $PM_{10}$ standards must reach attainment by December 31, 2006, or as expeditiously as possible (City of San Bernardino, 2005).

The City is located within the central portion of Source Receptor Area (SRA) 34 (Central San Bernardino Valley). The SCAQMD air quality monitoring station in SRA34 is located in the City on 4th street. Data from this station are summarized in Table 2-23.

### Table 2-23. Ambient Air Quality Monitoring Summary

| | Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations | | | | |
|---|---|---|---|---|---|
| **Pollutant/Standard** | **2004** | **2005** | **2006** | **2007** | **2008** |
| Ozone | | | | | |
| State 1-Hour ≥ 0.09 ppm | 55 | 54 | 57 | 48 | 62 |
| State 8-Hour ≥ 0.07 ppm | 79 | 72 | 72 | 72 | 87 |
| Federal 1-Hour > 0.12 ppm | 9 | 9 | 11 | 8 | 11 |
| Federal 8-Hour > 0.075 ppm | 56 | 56 | 56 | 51 | 62 |
| Max, 1-Hour Concentration (ppm) | 0.157 | 0.163 | 0.154 | 0.153 | 0.157 |
| Max 8-Hour Concentration (ppm) | 0.129 | 0.130 | 0.127 | 0.122 | 0.122 |
| Carbon Monoxide | | | | | |
| State 8-Hour >9.0 ppm | 0 | 0 | 0 | 0 | 0 |
| Federal 8-Hour ≥ 9 ppm | 0 | 0 | 0 | 0 | 0 |
| Max 8-Hour Conc. (ppm) | 3.24 | 2.45 | 2.19 | 2.27 | 1.65 |
| Nitrogen Dioxide | | | | | |
| State 1-Hour ≥ 0.18 ppm | 0 | 0 | 0 | 0 | 0 |
| Max, 1-Hour Concentration (ppm) | 0.118 | 0.098 | 0.088 | 0.083 | 0.091 |
| Coarse Particulate ($PM_{10}$) | | | | | |
| State 24-Hour > 50 $\mu g/m^3$ | 25 | 20 | 22 | 26 | 17 |
| Federal 24-Hour > 150 $\mu g/m^3$ | 0 | 0 | 0 | 1 | 0 |
| Max. 24-Hour Conc. ($\mu g/m^3$) | 118.0 | 72.0 | 92.0 | 219.0 | 76.0 |
| Fine Particulates ($PM_{2.5}$) | | | | | |
| Federal 24-Hour > 35 $\mu g/m^3$ | 16 | 3 | 9 | 11 | 1 |
| Max. 24-Hour Conc. ($\mu g/m^3$) | 93.4 | 106.2 | 55.0 | 72.1 | 43.5 |

**SOURCE:** South Coast Air Quality Management District. San Bernardino 4th Street Monitoring Station

**NOTES:** ppm: parts per million;
$\mu g/m_3$: micrograms per cubic meter

The data show recurring violations of both the state and federal ozone standards. The data also indicate that the area regularly exceeds the state PM10 standards. Additionally, PM2.5 has exceeded the federal standard since this pollutant has been monitored. Neither the CO nor NO2 standard have been violated in the last 5 years at this station (City of San Bernardino, 2005).

#### *Other South Coast Air Quality Basin Pollutants*

Based on the General Location Guide for Ultramafic Rock in California (Department of Conservation 2000), there is no naturally occurring asbestos located near or within the project site.

### ENVIRONMENTAL CONSEQUENCES

The proposed project is fully funded and is in the 2008 Regional Transportation Plan which was found to conform by the Southern California Association of Governments (SCAG) on May 8, 2008, and FHWA and FTA adopted the air quality conformity finding on June 5, 2008. The project is also included in SCAG's financially constrained 2008 Regional Transportation Improvement Program, Volume III, page 211, as project ID SBD031157. The 2008 Regional Transportation Improvement Program was found to conform by FHWA and FTA on November 17, 2008. The design concept and scope of the proposed project is consistent with the project description in the 2008 RTP, the 2008 RTIP and the assumptions in the SCAG regional emissions analysis.

A regional conformity analysis covering the Ventura County Air Pollution Control District, the San Bernardino Valley and Searles Valley portions of the Mojave Desert Air Basin, the Antelope and Victor Valley portions of the Western Mojave Desert Air Basin, the Salton Sea Air Basin, and the South Coast Air Basin, for ozone, PM2.5, and PM10 was carried out that includes this project, and all reasonably foreseeable and financially constrained regionally significant projects for at least 20 years from the date that the analysis was started. The analysis used the latest planning assumptions, and the most recent emission models and appropriate analysis methods, as determined by Interagency Consultation on May 8, 2008. Based on this analysis, the region will be in conformity with the SIP, including this project, based on the emission budget and Transportation Control Measure conformity test and analysis procedures, as described in 40 CFR 93.109(l). The design concept and scope of the proposed project is consistent with the project design concept and scope used in the regional conformity analysis. Timely Implementation evaluation reviewed by Interagency Consultation on February 1, 2008.

Projects of specific types listed in 40 CFR 93.126 (Table 2) are exempt from the requirement to determine air quality conformity and may proceed toward implementation in the absence of a

conforming transportation plan and RTIP. Per 40 CFR 93.126, the Mount Vernon Avenue Bridge Project falls in the following exempt project type:

- Safety; reconstructing bridges (no additional travel lanes).

Due to exemption per 40 CFR 93.126, the Mount Vernon Avenue Bridge Project is automatically exempt from regional conformity requirements as outline in 40 CFR 93.127. Although this project is already listed in the RTIP, conformity analysis and separate listing of the project in neither the RTP nor RTIP is necessary. Furthermore, the project will not interfere with timely implementation of Transportation Control Measures identified in the applicable SIP and regional conformity analysis.

For projects exempt under 40 CFR 93.126, no analysis or discussion of Mobile Source Air Toxics (MSAT) is necessary. Furthermore, the purpose of the Mount Vernon Avenue Bridge Project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards by replacing (or rehabilitating) the existing bridge, resulting a future bridge with same number of travelled lanes. This project will 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 no-build alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with

installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on air quality would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on air quality would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Refer to the discussion for Alternative 3.

Temporary Construction Impacts. Refer to the discussion for Alternative 3.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. The Mount Vernon Avenue Bridge Replacement project is falls under one of the project types listed under Table 2 of 40 CFR 93.126 (reconstruct bridges with no additional travelled lanes), and would therefore be exempt from the requirement to determine conformity. The project would not increase capacity; therefore, it would not permanently affect the traffic in the area and would not cause any effects on the air quality of the area.

Temporary Construction Impacts.
*Temporary Increases in ROG, NOX, and PM10 Construction-Related Emissions during Grading and Construction Activities*. Implementation of the project would result in the construction of a bridge. Typically, there are four activities associated with road construction: (1) grubbing/land clearing/demolition, (2) grading/excavation, (3) drainage/utilities/sub-grade, and (4) paving. The road construction model was used to estimate construction-related reactive organic gases (ROG), NOX, and PM10 emissions; the results are shown in Table 2-24 (New Road Construction Emission Estimates (pounds/day)). Emissions from construction activity are not anticipated to exceed the SCAQMD construction thresholds for criteria pollutants. This effect is considered to be not adverse without minimization measures. In addition, the project proponent would be required to comply with SCAQMD Rule 403 to reduce fugitive dust during construction.

*Diesel Health Risk.* SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue because of the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. In addition, PM10 from diesel emissions would be relatively low and well below the SCAQMD's daily threshold of 150 pounds per day and quarterly threshold of 6.75 tons per quarter. Consequently, the estimation of diesel risks associated with construction activities is considered not to be adverse.

**Table 2-24. New Road Construction Emission Estimates (lbs/day)**

| Construction Phase | ROG | NOX | PM10 |
|---|---|---|---|
| Grubbing/Land Clearing | 8 | 42 | 5 |
| Grading/Excavation | 12 | 83 | 6 |
| Drainage/Utilities/Sub-Grade | 9 | 48 | 5 |
| Paving | 3 | 23 | 1 |
| Maximum Phase Emissions | | | |
| Total | 12 | 83 | 6 |
| SCAQMD Thresholds | 75 | 100 | 150 |
| **SOURCE:** Road Construction Model Version 5.1 | | | |

*Disturbance of Asbestos Containing Materials.* Approximately 100 linear feet (LF) of pipe insulation, assumed to be asbestos containing, located on the east side of the bridge. This material is currently inaccessible and cannot be sampled.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

- **AQ-1:** Prior to renovation or demolition work that will disturb identified ACMs, a licensed Cal/OSHA-Certified Asbestos Consultant and abatement removal contractor should remove the ACMs. A Notification will be sent to South Coast Air Quality Management District (SCAQMD) 10 working days prior to any ACM removal or demolition activities as per Rule 1403. In addition the Notification will include applicable fees as per Rule 301.
- **AQ-2:** *Implementation of Construction Minimization Measures to Reduce Fugitive Dust Emissions*. Even though the project's emissions will not exceed the SCAQMD's significance thresholds for construction, as required by the SCAQMD's Fugitive Dust Rule 403, the project proponent must implement the applicable PM10-reducing construction practices shown in Table 2-25 during construction of the proposed project.

## Table 2-25. List of Best Available Control Measures from SCAQMD Fugitive Dust Rule 403

| | |
|---|---|
| **Backfilling** | |
| *Control Measure* | • Stabilize backfill material when not actively handling; and<br>• Stabilize backfill material during handling; and<br>• Stabilize soil at completion of activity. |
| *Guidance* | • Mix backfill soil with water prior to moving.<br>• Dedicate water truck or high capacity hose to backfilling equipment.<br>• Empty loader bucked slowly so that no dust plumes are generated.<br>• Minimize drop height from loader bucket. |
| **Clearing and Grading** | |
| *Control Measure* | • Maintain stability of soil through prewatering of site prior to clearing/grubbing; and<br>• Stabilize soil during clearing and grubbing activities; and<br>• Stabilize soil immediately after clearing and grubbing activities. |
| *Guidance* | • Maintain live perennial vegetation where possible.<br>• Apply water in sufficient quantity to prevent generation of dust plumes. |
| **Clearing forms** | |
| *Control Measure* | • Use water spray to clear forms; or<br>• Use sweeping and water spray to clear forms; and<br>• Use vacuum system to clear forms. |
| *Guidance* | • Use of high-pressure air to clear forms may cause exceedance of Rule requirements. |
| **Crushing** | |
| *Control Measure* | • Stabilize surface soils prior to operation of support equipment; and<br>• Stabilize material after crushing. |
| *Guidance* | • Follow permit conditions for crushing equipment.<br>• Prewater material prior to loading into crusher.<br>• Monitor crusher emissions opacity.<br>• Apply water to crushed material to prevent dust plumes. |
| **Cut and fill** | |
| *Control Measure* | • Prewater soils prior to cut and fill activities; and<br>• Stabilize soils during and after cut and fill activities. |
| *Guidance* | • For large sites, prewater with sprinklers or water trucks and allow time for penetration.<br>• Use water trucks/pulls to water solids to depth of cut prior to subsequent cuts. |
| **Demolition-mechanical/manual** | |
| *Control Measure* | • Stabilize wind erodible surfaces to reduce dust; and<br>• Stabilize surface soils where support equipment and vehicles will operate; and<br>• Stabilize loose soil and demolition debris; and<br>• Comply with SCAQMD Rule 1403. |
| *Guidance* | • Apply water in sufficient quantities to prevent the generation of visible dust plumes. |

| | |
|---|---|
| **Disturbed soils** | |
| *Control Measure* | • Stabilize disturbed soil throughout the construction site; and<br>• Stabilize disturbed soil between structures. |
| *Guidance* | • Limit vehicular traffic and disturbances on soils where possible.<br>• If interior block walls are planned, install as early as possible.<br>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes. |
| **Earth-moving activities** | |
| *Control Measure* | • Preapply water to depth of proposed cuts; and<br>• Reapply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and<br>• Stabilize solids once earth-moving activities are complete. |
| *Guidance* | • Grade each project phase separately, timed to coincide with construction phase.<br>• Upwind fencing can prevent material movement on site.<br>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes. |
| **Importing/exporting of bulk materials** | |
| *Control Measure* | • Stabilize material while loading to reduce fugitive dust emissions; and<br>• Maintain at least 6 inches of freeboard on haul vehicles; and<br>• Stabilize material while transporting to reduce fugitive dust emissions; and<br>• Stabilize material while unloading to reduce fugitive dust emissions; and<br>• Comply with Vehicle Code Section 23114. |
| *Guidance* | • Use tarps or suitable enclosures on haul trucks.<br>• Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage.<br>• Comply with track out prevention/mitigation requirements.<br>• Provide water while loading and unloading to reduce visible dust plumes. |
| **Landscaping** | |
| *Control Measure* | • Stabilize soils, materials, slopes. |
| *Guidance* | • Apply water to materials to stabilize.<br>• Maintain materials in a crusted condition.<br>• Maintain effective cover over materials.<br>• Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes.<br>• Hydroseed prior to rainy season. |
| **Road Shoulder Maintenance** | |
| *Control Measure* | • Apply water to unpaved shoulders prior to clearing; and<br>• Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. |
| *Guidance* | • Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs.<br>• Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs. |

| | |
|---|---|
| **Screening** | |
| *Control Measure* | • Prewater material prior to screening; and<br>• Limit fugitive dust emissions to opacity and plume length standards; and<br>• Stabilize material immediately after screening. |
| *Guidance* | • Dedicate water truck or high capacity hose to screening operation.<br>• Drop material through the screen slowly and minimize drop height.<br>• Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point. |
| **Staging areas** | |
| *Control Measure* | • Stabilize staging areas during use; and<br>• Stabilize staging area soils at project completion. |
| *Guidance* | • Limit size of staging area.<br>• Limit vehicle speeds to 15 miles per hour.<br>• Limit number and size of staging area entrances/exits. |
| **Stockpiles/Bulk Material/Handling** | |
| *Control Measure* | • Stabilize stockpiled materials.<br>• Stockpiles within 100 yards of offsite occupied buildings must not be greater than 8 feet in height, or must have a road bladed to the top to allow water truck access, or must have an operational water irrigation system that is capable of complete stockpile coverage |
| *Guidance* | • Add or remove material from the downwind portion of the storage pile.<br>• Maintain storage piles to avoid steep sides or faces. |
| **Traffic areas for construction activities** | |
| *Control Measure* | • Stabilize all off-road traffic and parking areas; and<br>• Stabilize all haul routes; and<br>• Direct construction traffic over established haul routes. |
| *Guidance* | • Apply gravel/paving to all haul routes as soon as possible to all future roadway areas.<br>• Barriers can be used to ensure vehicles are only used on established parking areas/haul routes. |
| **Trenching** | |
| *Control Measure* | • Stabilize surface soils where trencher or excavator and support equipment will operate; and<br>• Stabilize solids at the completion of trenching activities. |
| *Guidance* | • Prewatering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pretrench to 18 inches, then soak soils via the pretrench and resume trenching.<br>• Washing mud and soils from equipment at the conclusion of trenching activities can prevent crushing and drying of soil on equipment. |
| **Truck loading** | |
| *Control Measure* | • Prewater material prior to loading; and<br>• Ensure that freeboard exceeds 6 inches (CVC 23114). |
| *Guidance* | • Empty loader bucket such that no visible dust plumes are created.<br>• Ensure that the loader bucket is close to the truck to minimize drop height when loading. |

| | |
|---|---|
| **Turf Overseeding** | |
| *Control Measure* | • Apply sufficient water immediately prior to conducing turf vacuuming activities to meet opacity and plume length standards; and<br>• Cover haul vehicles prior to exiting the site. |
| *Guidance* | • Haul waste material immediately off site. |
| **Unpaved roads/parking lots** | |
| *Control Measure* | • Stabilize soils to meet the applicable performance standards; and<br>• Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. |
| *Guidance* | • Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements |
| **Vacant Land** | |
| *Control Measure* | • In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures |
| *Guidance* | • N/A |
| **SOURCE:** Fugitive Dust Rule 403. South Coast Air Quality Management District. | |

### 2.2.6 Noise

#### REGULATORY SETTING

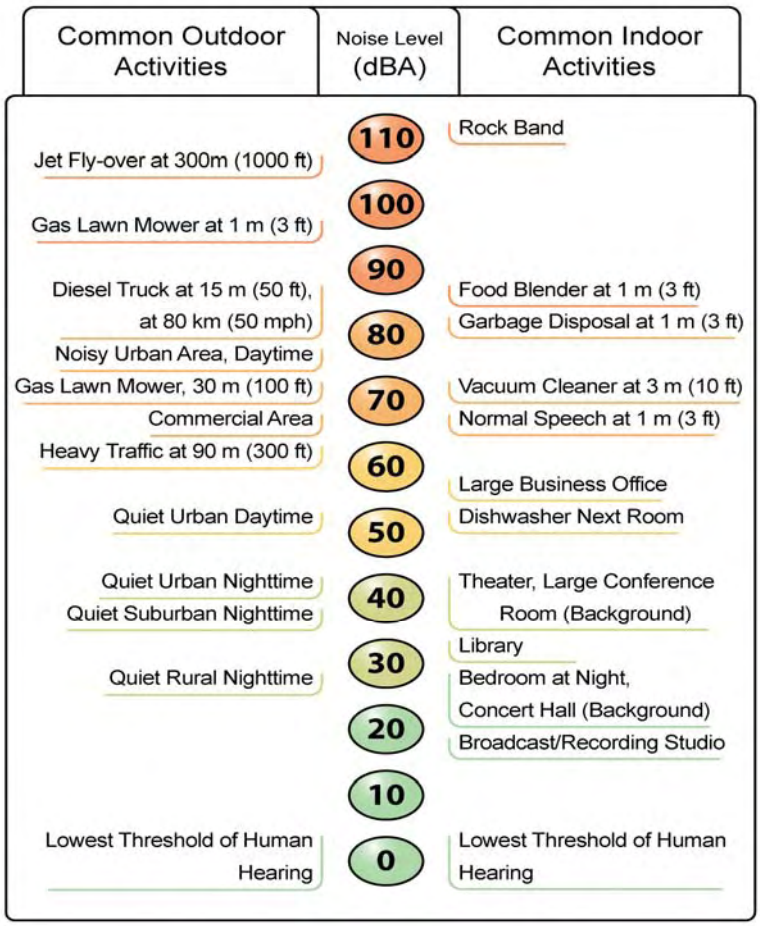
The National Environmental Policy Act (NEPA) of 1969 provides the broad basis for analyzing and abating highway traffic noise effects. The intent of this law is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement under NEPA are described below.

For highway transportation projects with FHWA involvement (and the Department, as assigned), 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) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

## Table 2-26. Noise Abatement Criteria

| Activity Category | NAC, Hourly A- Weighted Noise Level, dBA $L_{eq}$(h) | Description of Activities |
|---|---|---|
| A | 57 Exterior | 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 |
| B | 67 Exterior | Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals. |
| C | 72 Exterior | Developed lands, properties, or activities not included in Categories A or B above |
| D | -- | Undeveloped lands. |
| E | 52 Interior | Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums |
| **SOURCE:** 23 CFR 772. | | |

The following graphic shows the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels with common activities.



In accordance with the Department's *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 to be 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 Department's *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.

### AFFECTED ENVIRONMENT

A Noise Study Report (ATS Consulting, 2008) was prepared for the proposed project and was used in the preparation of this section.

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and that interferes with normal activities. Sound levels are measured and expressed in decibels (dB). The human ear does not respond uniformly to sounds at all frequencies; it is less sensitive to low and high frequencies than to medium frequencies, which correspond with human speech. In response, the A-weighted noise level (or scale) has been developed. This A-weighted sound level is called the "noise level," and is referenced in units of dBA. Noise is measured on a logarithmic scale; a doubling of sound energy results in a 3-dBA increase in noise levels. The human ear, however, does not typically notice changes in noise levels of less than 3 dBA. The *equivalent noise level* (Leq) is the average A-weighted sound level measured over a given time interval. Leq can be measured over any time period, but is typically measured for 1-hour periods and expressed as Leq(h).

Noise-sensitive land uses in the project area include single-family residences immediately to the southwest and northwest of the bridge. To the southwest, the residences are located between 2nd and 3rd Streets. Receivers along 3rd Street and the frontage road that parallels the Mount Vernon Avenue Bridge have a direct view of the bridge. A large rail storage yard and Metrolink/Amtrak railroad is located just north of these residences. The nearest residences on the north end of the bridge are located on the north side of Kingman Street, immediately east of Mount Vernon Avenue. The area between 4th Street and the south side of Kingman Street is primarily undeveloped commercial/industrial land. A restaurant is located on Mount Vernon Avenue south of Kingman Street. The hotel located near 5th Street is outside the area where either the horizontal alignment or vertical profile would be changed by the proposed project and therefore was not included in the analysis.

A total of five receivers were selected for the noise analysis and are shown in Figure 2-12. These receivers, which are representative of the various noise-sensitive land uses potentially affected by changes in the horizontal alignment and vertical profile of the Mount Vernon Avenue Bridge, are:

- the three noise measurement locations, which are all single-family residences (Sites 1, 2, and 3);
- a single-family residence north of 2nd Street (Site 4); and
- a single-family residence on Kingman Street, just west of Mount Vernon Avenue (Site 5).

Measurements of noise levels in the project area were taken by Parsons Brinkerhoff Quade & Douglas (PBQ&D) on June 18, 2002, and June 19, 2002. The purpose of taking the measurements was to gather traffic and noise data in order to calibrate the traffic noise model, determine the peak hour traffic noise level, and to identify non-traffic (background) noise sources and their contribution to the overall levels of noise exposure. The following three sites were selected for noise measurement in the residential neighborhood immediately southwest of the Mount Vernon Avenue Bridge:

- **Site 1: 248 Mount Vernon Avenue**. A 15-minute noise measurement was taken on the afternoon of June 19, 2002, at this single-family residence. The measurement was taken on the 3rd Street side of the home, approximately 39 meters (129 feet) from the edge of the bridge. Traffic counts for the both the northbound and southbound lanes of the bridge were taken during the measurement.

  **Site 2. 1329 3rd Street.** A 15-minute measurement was taken in the front yard of this single-family residence around midday on June 18, 2002. The microphone was approximately 49 meters (160 feet) from the edge of the Mount Vernon Avenue Bridge.

Traffic counts for both the northbound and southbound lanes of the bridge were taken during the measurement.

- **Site 3: 1327 West 3rd Street.** A 24-hour noise measurement was taken at this single-family residence. This measurement was taken to identify the peak hour noise level over the course of an entire day and to determine whether this level is due to traffic on Mount Vernon Avenue or other noise sources, primarily nearby freight and passenger rail activities.

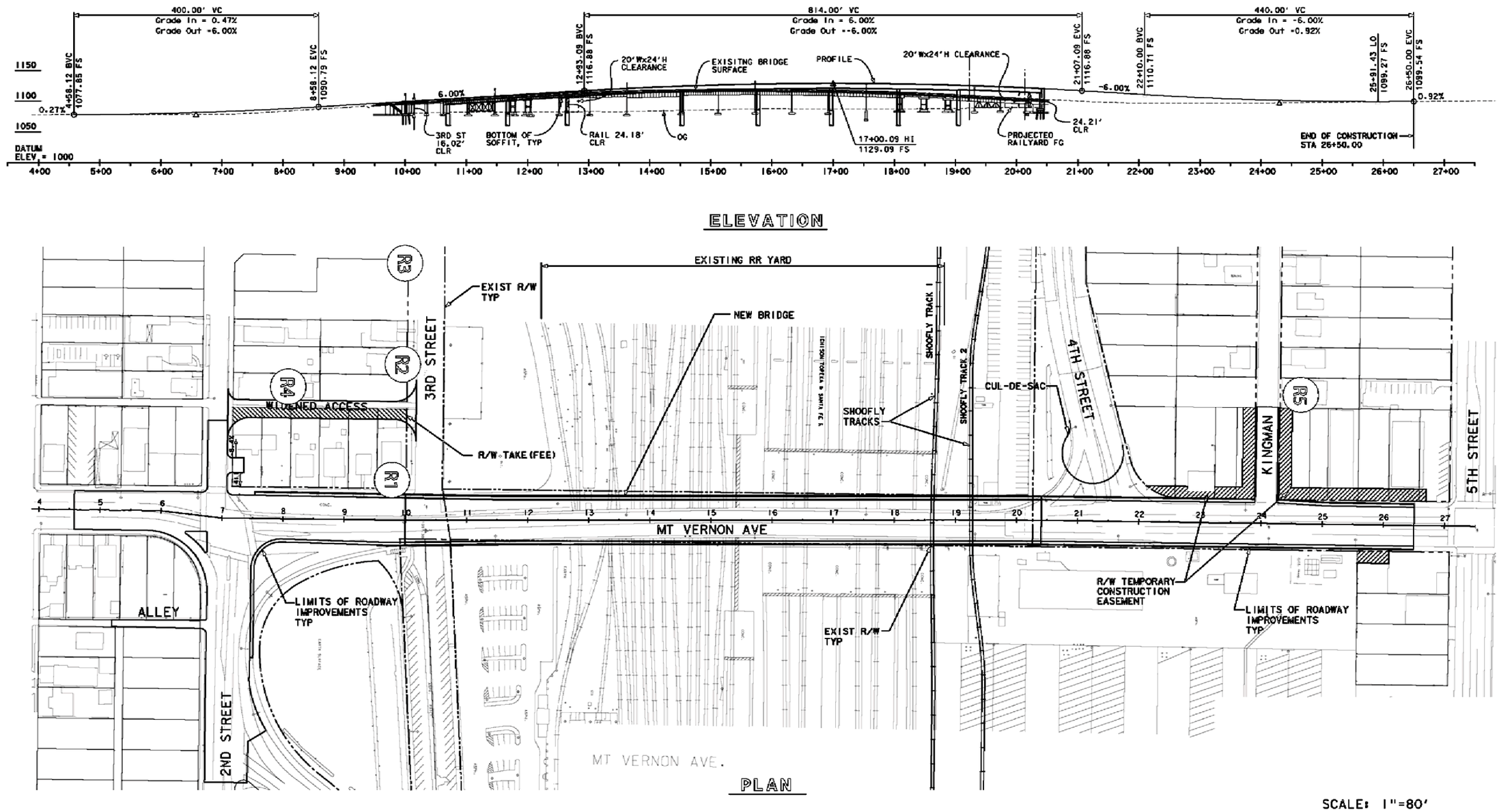
These three locations (Sites 1, 2, and 3) are shown in Figure 2-12, with summaries of the noise measurements provided in Table 2-27 (Summary of Short-Term Noise Measurements).

The Sound32 traffic noise model, the Department version of the FHWA Noise Prediction Model (STAMINA 2.0/OPTIMA), could not be calibrated because of erratic traffic conditions on the bridge and noise from nearby rail operations. The signal at the intersection of 2nd Street and Mount Vernon Avenue affects traffic speeds on the bridge in both directions. Southbound vehicles slow as they approach the intersection when the light is red. During periods of heavy traffic, southbound vehicles often queue on the bridge. When the light turns green, northbound vehicles are accelerating up to the posted speed as they climb the bridge north of 2nd Street. When the light is green, both directions of traffic can maintain a speed of 56.3 km per hour (35 miles per hour) along the entire project alignment.

Additionally, noise from rail operations, including both freight and passenger rail service, influenced the measured noise levels. This train noise could not be separated from the traffic noise to develop an estimate of the traffic-only noise levels; therefore, traffic noise levels are predicted without using a calibration factor.

#### *Estimated 2004 Peak Hour Traffic Noise Levels*

Noise levels in the project area are due, in part, to automobile and truck traffic on Mount Vernon Avenue and, to a lesser extent, vehicles on other smaller roadways, including 2nd and 3rd Streets. Noise from adjacent rail operations is the dominant noise source, particularly at those receivers farther from the bridge along 3rd Street. As illustrated in Figure 2-13, the highest noise levels at Site 4 occurred during off-peak traffic periods, between 8 p.m. and 6 a.m. Railroad activities include commuter rail service (Metrolink and Amtrak); freight train (BNSF) movements; and unloading, loading, and storage of freight trains and rail cars at the BNSF intermodal yard.




**SOURCE**: Noise Study Report (ATS Consulting, 2008 update).

**Figure 2-12**
**Noise Measurement and Modeling Sites**
**Mount Vernon Avenue Bridge Project**

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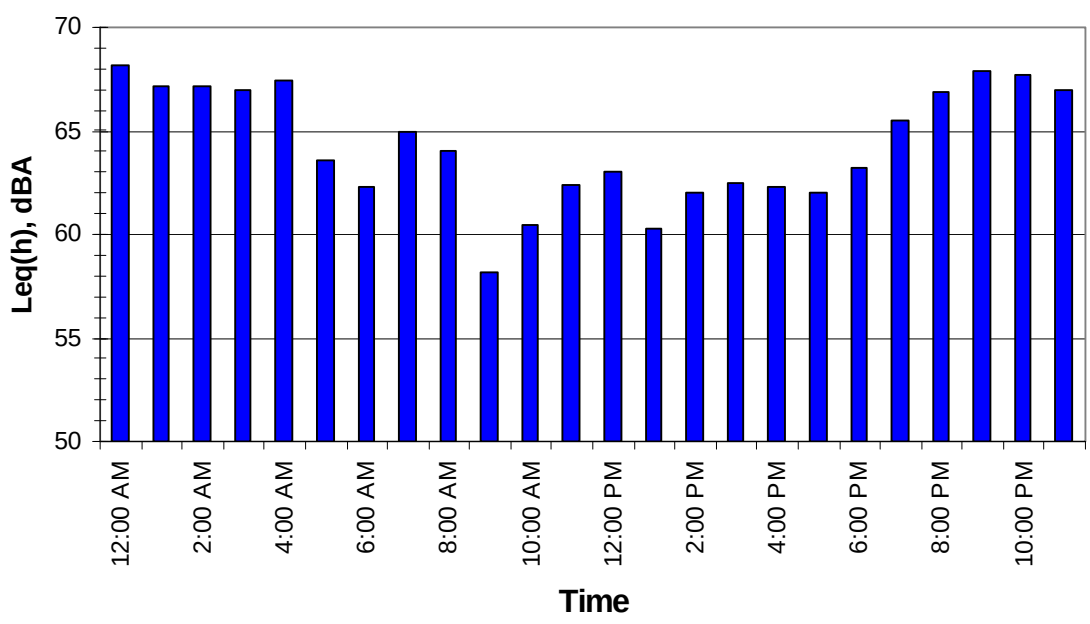
## Table 2-27. Summary of Short-Term Noise Measurements

| | Site ID 1 | Site ID 2 | Site ID 3 | Site ID 4 | Site ID 5 |
|---|---|---|---|---|---|
| **Address** | SFR<br>1329 W. 2nd St. | SFR<br>248 Mt Vernon Ave | SFR<br>1329 W. 3rd St. | SFR<br>1327 W. 3rd St. | SFR<br>Kingman St. west of Mt Vernon Ave |
| **Existing Sound Leq(h) (dBA)** | 59 | 57 | 56 | 60 | 60 |
| **Parameters** | Date: March 1, 2004; Start Time: 4:45 PM; Duration: 1 hour<br>Vehicle Mix: Automobiles, medium trucks, heavy trucks<br>697 Mt. Vernon SB Vehicles/peak hour<br>819 Mt. Vernon NB Vehicles/peak hour<br>Automobile Speeds: 35 mph (assumed)<br>Heavy Truck Speeds: 35 mph (assumed) | | | | |

**SOURCE:** Noise Study Report (ATS Consulting, 2008).

**NOTES:** SFR – Single Family Residence
Assumed speeds are likely to be high given that vehicles are often slowing down or have not yet reached the posted speed limit due to the traffic signal at 2nd Street.

**Figure 2-13. Measured 24-Hour Noise Levels**




**SOURCE:** Noise Study Report (ATS Consulting, 2008).

Table 2-28 (Estimated 2004 Maximum Hourly Traffic Noise Levels, Leq(h)) presents the 2004 maximum hourly traffic noise levels at the five representative locations. The 2004 loudest hour was estimated using peak hour traffic volumes collected on March 1, 2004.[10] Peak hour traffic occurred between 4:45 and 5:45 p.m. and included 697 vehicles in the southbound direction and 819 vehicles in the northbound direction (on average, 750 vehicles per direction per hour). The mix of automobiles, medium trucks, and heavy trucks was determined based on vehicle classification counts taken on Mount Vernon Avenue at 5th Street.[11] Speeds were assumed to be 56.3 km per hour (35 miles per hour) for autos and medium trucks and 56.3 km per hour (35 miles per hour) for heavy trucks. These speeds are likely to be conservative (high) given that vehicles are often slowing down or have not yet reached the posted speed limit due to the traffic signal at 2nd Street. Table 2-28 (Estimated 2004 Maximum Hourly Traffic Noise Levels, Leq(h)) includes the peak hour noise levels predicted by Sound32 for the five representative receivers under the 2004 peak hour traffic conditions.

**Table 2-28. Estimated 2004 Maximum Hourly Traffic Noise Levels, Leq(h)**

| Receiver | | | | Leq(h) (dBA) |
|---|---|---|---|---|
| **I.D.** | **Location** | **Activity Category** | **NAC** | |
| 1 | SFR – 1329 West 2nd Street | B | 67 | 59 |
| 2 | SFR – 248 Mt Vernon Avenue | B | 67 | 57 |
| 3 | SFR – 1329 West 3rd Street | B | 67 | 56 |
| 4 | SFR – 1327 West 3rd Street | B | 67 | 60 |
| 5 | SFR – Kingman Street | B | 67 | 60 |

**SOURCE:** Noise Study Report (ATS Consulting, 2008).

**NOTE:** SFR - single family residence

***Applicability of Estimated 2004 Peak Hour Traffic Volumes***

At the time of the noise analysis, the future traffic volumes were anticipated to decrease slightly in the future; therefore, existing (Year 2009) traffic volumes were conservatively used for the future noise modeling. Based upon recent revisions to the forecast future (Year 2035) traffic volumes, an increase in peak-hour traffic volumes of slightly less than 10 percent above existing levels is anticipated.

An anticipated increase in traffic volumes by Year 2035 of 10 percent compared with Year 2009 would result in a small increase (less than 0.5 dB) in traffic noise. Since traffic noise levels under the Future with Project scenario were estimated to be 60 dBA Leq or lower at

[10] LAN Engineering, 2004.
[11] LSA Associates, Inc., 2003.

representative noise-sensitive receiver locations, Year 2035 traffic noise levels could potentially increase to 61 dBA Leq or lower, but in any case would remain well below the FHWA/Department NAC "approach or exceed" threshold of 66 dBA Leq. Therefore, the projected upward revision to traffic volumes in the subject project area would result in a negligible impact in traffic noise levels.[12]

#### *City of San Bernardino General Plan Noise Policies*

The project's CEQA document analyzes noise impacts relative to the general plan noise policies.

### ENVIRONMENTAL CONSEQUENCES

The noise impacts discussed below utilize 2004 traffic data. As stated in the "Applicability of Estimated 2004 Peak Hour Traffic Volumes" subsection, the projected upward revision to traffic volumes in the subject project area, utilizing 2009 data, would result in a negligible impact in traffic noise levels.

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capa is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects from noise would not occur. Modeled worst-hour noise levels associated with the No Build Alternative were calculated to be 56 to 60 dBA (Table 2-29, Predicted 2025 Traffic Noise Levels). Noise levels associated with the No Build Alternative

[12] ICF Memorandum dated June 24, 2010 to Aaron Burton (Caltrans) (revised August 4, 2010).

would not approach or exceed the NAC of 67 dBA for residential uses at any of the identified sensitive receivers.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects from noise would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, the predicted increase in traffic noise is expected to be the same as the No Build Alternative. Refer to Alternative 1, Permanent Impacts.

Temporary Construction Impacts. Under the Retrofit/Rehabilitation Alternative, the predicted increase in traffic noise is expected to be the same as the Locally Preferred/Replacement Alternative. Refer to Alternative 3, Temporary Construction Impacts.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Year 2025 maximum hourly traffic noise levels were modeled for all five representative receivers. Typically, the peak traffic noise level is associated with LOS D/E traffic volumes. For the Mount Vernon Avenue Bridge, LOS D/E would be 1,468 vehicles per direction per hour.[13] As discussed earlier, the existing peak traffic volume is 750 vehicles per direction per hour, or roughly half of the LOS D/E volume. Compared to estimated 2004 conditions, year 2025 traffic volumes are expected to decrease on Mount Vernon between 2nd Street and 5th Street.[14] This decrease is due to the proposed future construction of a new north-south roadway in the project area. As 2025 traffic volumes are not forecasted to reach LOS D/E levels, the existing peak hour traffic volumes have been used to model 2025 peak hour traffic noise levels. The results of the analysis are summarized in Table 2-29 (Predicted 2025 Traffic Noise Levels).

Future peak hour noise levels are predicted to be below the NAC of 67 dBA at all five representative receivers. The changes in the horizontal and vertical realignment of the Mount Vernon Avenue Bridge are not predicted to result in an audible increase traffic noise levels at any of the receiver locations. At several of the receivers(I.D. 1, 2, 3 and 5), the traffic noise levels are predicted to decrease slightly as a result of the project, because the wider bridge deck would provide a small amount of additional shielding at these receivers, overall, from the Mount Vernon Avenue travel lanes. The noise level decrease is due to the lower grade of the residential structures in comparison to the bridge deck at these locations. Further, it should be

[13] FDOT, 2002.
[14] LSA Associates, Inc., 2004.

noted that future peak hour noise levels would still be below the NAC even under LOS D/E traffic conditions.

**Table 2-29. Predicted 2025 Traffic Noise Levels**

| Receiver | | 2025 No-Project Leq(h) (dBA) | 2025 With-Project | | | | |
|---|---|---|---|---|---|---|---|
| I.D. | < 1976 or New Highway | | Leq(h) (dBA) | Increase (dBA) | Activity Category | NAC | Impact (S, A/E or None) [1] |
| 1 | Yes | 59 | 58 | -1.6 | B | 67 | None |
| 2 | Yes | 57 | 57 | -0.2 | B | 67 | None |
| 3 | Yes | 56 | 56 | -0.3 | B | 67 | None |
| 4 | Yes | 60 | 60 | 0.4 | B | 67 | None |
| 5 | Yes | 60 | 60 | -0.2 | B | 67 | None |

**SOURCE:** Noise Study Report (ATS Consulting, 2008).
**NOTE:** [1]Impact Type: S=Substantial Increase (12 dBA or more) and A/E=Approach or Exceed NAC

*Noise Abatement.* According to the Protocol, noise abatement should be considered where traffic noise impacts are predicted to approach within one 1 dBA, or exceed the Noise Abatement Criteria (NAC). Because no traffic noise impacts are predicted, the feasibility and reasonableness of noise abatement has not been evaluated as part of this analysis. Furthermore, as discussed earlier, railroad operations are the primary noise source in the adjacent community. Therefore, even if abatement was considered, it would be difficult to achieve the necessary 5 dBA reduction in total noise levels using sound barrier walls along the edge of the bridge or in front of the residences.

Retaining walls would be constructed along both sides of the north approach between about Kingman Avenue and West 4th Street. The retaining walls would be landscaped to attenuate any secondary noise reflection due to modifications to the bridge structure, a 20-foot westerly increase in the structure footprint, and surrounding hardscape associated with ongoing train operations. It is anticipated that this landscaping would reduce the noise levels by at least 1 or 2 dB. The walls would be landscaped with vegetation that has aerial rootlets to cover the wall, potentially creeping fig.

Temporary Construction Impacts.

*Temporary Increase in Community Noise Levels during Construction Activities.* Construction of the proposed project would require the use of heavy equipment that could generate high noise levels in the immediate project area, thereby resulting in temporary increases in community noise levels. Examples of equipment used for roadway construction include concrete mixers, bulldozers, backhoes, and heavy trucks. Typical noise levels from this type of equipment are provided in Table 2-30 (Typical Construction Noise Levels).

## Table 2-30. Typical Construction Noise Levels

| Equipment | Noise Levels at 15 meters |
|---|---|
| Front End Loader | 85 dBA |
| Bulldozer | 85 dBA |
| Backhoe | 80 dBA |
| Water Truck (or other heavy truck) | 88 dBA |
| Generator | 81 dBA |
| Concrete Mixer | 85 dBA |
| Tamper/Roller | 75 dBA |
| Paver | 87 dBA |
| **SOURCE:** FTA, Transit Noise and Vibration Impact Assessment (1995) and EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances (1971). | |

Based on the types of construction activities and equipment required for the proposed project, noise levels at 15 meters (50 feet) from the center of construction activities would generally range from 80 to 85 dBA during peak periods. Because not all of the equipment would be operating at the same time or for the entire day, the Leq(h) from project construction would be substantially lower. In addition, any increase in the background noise level caused by project construction would be temporary. Therefore, noise effects during construction activities are not predicted and abatement is not required; however, measures to minimize construction-related noise are presented.

### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

The changes in the horizontal and vertical realignment of the Mount Vernon Avenue Bridge are not predicted to increase traffic noise levels and both 2025 and horizon year 2035 peak hour noise levels would be below the Noise Abatement Criteria. Although noise abatement is not required, the following minimization measures would be implemented.

- **N-1:** Retaining walls will be landscaped, potentially with creeping fig, to attenuate any secondary noise reflection along both sides of the north bridge approach between Kingman Avenue and West 4th Street which accommodate an approximate 9.87 and 1.43 foot change in roadway elevation.

- **N-2:** To minimize potential construction noise effects, the construction contractor will adhere to BMPs to minimize construction noise levels, including the following BMP:s:

    1. Construction activities adjacent to residential units will be limited as necessary to prevent noise impacts. (14.8.1, City of San Bernardino General Plan).

2. Construction activities will employ feasible and practical techniques that minimize the noise impacts on adjacent uses. (14.8.2, City of San Bernardino General Plan).
3. No person shall be engaged or employed, or cause any other person to be engaged or employed, in any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours of 7:00 a.m. and 8:00 p.m. (San Bernardino Municipal Code Section 8.54.070) (Ord. MC-1246, 5-21-07).
4. The operation or use between the hours of 10 p.m. and 7 a.m. of any pile driver, steam shovel, pneumatic hammers, derrick, steam or electric hoist, power driven saw, or any other tool or apparatus, the use of which is attended by loud and excessive noise, is prohibited, except with the approval of the Mayor and Common Council (San Bernardino Municipal Code Section 8.54.020(L)).
5. The creation of loud and excessive noise in connection with the loading or unloading of motor trucks and other vehicles is prohibited (San Bernardino Municipal Code Section 8.54.020(I)).
6. The unnecessary or excessive blowing of whistles, sounding of horns, ringing of bells or use of signaling devices by operators of railroad locomotives, motor trucks, and other transportation equipment is prohibited (San Bernardino Municipal Code Section 8.54.020(H)).
7. The shouting and crying of peddlers, hawkers and vendors which disturbs the peace and quiet of any considerable number of persons or neighborhood is prohibited (San Bernardino Municipal Code Section 8.54.020(J)).
8. All construction activities shall be conducted in accordance with Department provisions in 14-8.02 (Noise Control), of the Standard Specifications and Special Provisions (SSP) S5-310, in order to ensure that noise generated during construction activities is minimized. The SSP will be edited specifically for this project during the PS&E final design phase. This includes the provisions that the contractor shall ensure that all equipment shall have sound-control devices that are no less effective than those provided on the original equipment, and no equipment shall have an unmuffled exhaust.
9. Adherence to local ordinances and codes relating to construction equipment, sound levels, and hours of operation is required.
10. Installation and maintenance of effective mufflers on construction equipment is required.
11. Positioning equipment and staging areas as far from residences as possible is required.
12. Unnecessary idling of equipment is prohibited.

These BMP's will be incorporated into either the standard specifications or special provisions which are prepared for the construction contractor during PS&E final design.

## 2.3 Biological Environment

Unless otherwise noted, the information from this section was derived from the Natural Environment Study – Minimal Impacts (NES-MI) prepared for the project by the Department (Jones & Stokes, 2006). The NES-MI is a review and revision of the Biological Technical Memorandum (Parsons Brinckerhoff, 2003) for the Mount Vernon Avenue Bridge Project, which was also referred to in this analysis.

### 2.3.1 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 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.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed above in the Threatened and Endangered Species section 2.3.5 Wetlands and other waters are also discussed above in the preceding section 2.3.2.

#### AFFECTED ENVIRONMENT

The proposed project addresses the Mount Vernon Avenue Bridge in the City of San Bernardino, San Bernardino County, California. The project site is depicted on the San Bernardino South, California 7.5-minute USGS quadrangle map (San Bernardino South 1980) and on page 606 (block E1) of the San Bernardino County Street Guide and Directory (Thomas Bros. 2003).

The designated Area of Effect (AOE) anticipated by the replacement of the Mount Vernon Avenue Bridge includes the proposed project footprint and associated staging areas. The proposed project alternatives have essentially the same footprint in regards to biological resource issues and, as such, are treated as a single proposed project footprint. The proposed construction footprint is located on and adjacent to Mount Vernon Avenue between about West 5th and West 2nd Streets. Other associated areas of proposed construction include a section of West 2nd Street from about Grape Court east to West Viaduct Boulevard and an alleyway between West 2nd and West 3rd Streets that is behind the residential area along Mount Vernon Avenue. Improvements are also proposed to portions of the West 4th Street and West Kingman Avenue intersections with Mount Vernon Avenue. Two temporary railroad tracks (shoofly tracks) would

be installed in the BNSF yard. A single staging area for construction equipment and materials is proposed at the northwest corner of Mount Vernon Avenue and West 3rd Street.

A general field evaluation of the AOE was performed by Jones & Stokes Senior Biologist Kurt F. Campbell on April 24, 2004. Based on the results of the initial field evaluation, it was determined that an additional site visit with improved access to the underside of the bridge would likely allow evaluation of some additional issues relevant to natural resources. The biologist revisited the site on January 14, 2005, with a safety flagman and full access. During this second visit, the entire underside of the bridge was examined, and the remainder of the AOE was briefly reviewed to confirm that no substantial changes in condition had occurred there since the first visit.

The AOE lies within an intensely developed, long-established urban landscape composed of high-density residential neighborhoods and industrial development. As provided by Parsons Brinckerhoff (2003), the Metrolink station and associated parking facilities, along with the historic train depot, are adjacent to the AOE for the project. Residential development is found adjacent to portions of the AOE, including those areas on West 2nd, West 3rd, and West 4th Streets and West Kingman Avenue. The staging area for equipment and supplies is a small area of undeveloped land at the intersection of West 3rd Street and the bridge. This open area is an existing gravel parking lot with no natural landscape features.

Soils on exposed parts of the AOE consist of sand and loam and are disturbed by development associated with the railroad and surrounding urban development. Continued railroad use and adjacent urban uses have resulted in very low biological values for the AOE.

No natural vegetation communities were observed on or in close vicinity of the AOE. Vegetation consisted of ruderal and/or nonnative plant species. Those plants common or characteristic of the area included Peruvian pepper-tree (*Schinus molle*), oleander (*Nerium oleander*), common horseweed (*Conyza canadensis*), treasureflower (*Gazania linearis*), prickly lettuce (*Lactuca serriola*), common dandelion (*Taraxacum officinale*), short-pod mustard (*Hirschfeldia incana*), lamb's-quarter (*Chenopodium album*), Mexican palo verde (*Parkinsonia aculeata*), shamel ash (*Fraxinus uhdei*), tree-of-heaven (*Ailanthus altissima*), Canary Island date palm (*Phoenix canariensis*), California fan palm (*Washingtonia filifera*), Mexican fan palm (*Washingtonia robusta*), and nonnative grasses [oat (*Avena* sp.), bromes (*Bromus* spp.), barley (*Hordeum* spp.)].

No wildlife movement corridors are present on or adjacent to the project site or staging area. No habitat conservation plan or natural community conservation plan is applicable to the project site.

## ENVIRONMENTAL CONSEQUENCES

### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on natural communities would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on natural communities would occur.

### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. No effects on natural communities would occur. General vegetation and wildlife communities have been severely disturbed at the project site, construction staging area, shoofly track area, and in the surrounding urban area. As part of minimization measure N-1 (see Section 2.2.6, Noise), retaining walls will be landscaped, potentially with creeping fig, to attenuate any secondary noise reflection along both sides of the north bridge approach between Kingman Avenue and West 4th Street which accommodate an approximate 9.87 and 1.43 foot change in roadway elevation.

Temporary Construction Impacts. No temporary effects on natural communities would occur. General vegetation and wildlife communities have been severely disturbed at the project site, construction staging area, shoofly track area, and in the surrounding urban area.

***Alternative 3, Locally Preferred/Replacement Alternative***

Permanent Impacts. No effects on natural communities would occur. General vegetation and wildlife communities have been severely disturbed at the project site, construction staging area, shoofly track area, and in the surrounding urban area. As part of minimization measure N-1(see Section 2.2.6, Noise), retaining walls will be landscaped, potentially with creeping fig, to attenuate any secondary noise reflection along both sides of the north bridge approach between Kingman Avenue and West 4th Street which accommodate an approximate 9.87 and 1.43 foot change in roadway elevation.

Temporary Construction Impacts. No temporary effects on natural communities would occur. General vegetation and wildlife communities have been severely disturbed at the project site, construction staging area, shoofly track area, and in the surrounding urban area.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed, effects are unlikely

### 2.3.2 Wetlands and Other Waters

#### REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 USC 1344) is the primary law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (ACOE) with oversight by the Environmental Protection Agency (EPA).

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, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the

construction and 2) the proposed project includes all practicable measures to minimize harm.

The Regional Water Quality Control Boards (RWQCB) were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

### AFFECTED ENVIRONMENT

A field survey was conducted on April 20, 2000, to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the CWA, and (2) California Department of Fish and Game (CDFG) jurisdiction pursuant to Division 2, Chapter 6, Section 1603 of the Fish and Game Code. Prior to beginning the field delineation, USGS topographic maps were examined to determine the locations of potential areas of Corps/CDFG jurisdiction. Suspected jurisdictional areas were field-checked for the presence of definable channels and/or wetland vegetation, soils, and hydrology. Suspected wetland habitats were evaluated using the methodology set forth in the 1987 *U.S. Army Corps of Engineers Wetland Delineation Manual*.

No natural vegetation communities were observed on or in close vicinity of the AOE. No areas of the project site contain Corps or CDFG jurisdictional waters. There is no potential for wetlands to occur.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of

shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on wetlands or other waters would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on wetlands or other waters would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. No wetlands and/or state or federal jurisdictional waters occur within the project footprint. No wetland, riparian, or sensitive habitat would be affected by the Retrofit/Rehabilitation Alternative.

Temporary Construction Impacts. No wetlands and/or state or federal jurisdictional waters occur within the project footprint. No temporary effects to wetland, riparian, or sensitive habitat would occur as a result of the Retrofit/Rehabilitation Alternative.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. No wetlands and/or state or federal jurisdictional waters occur within the project footprint. No wetland, riparian, or sensitive habitat would be affected by the Locally Preferred/Replacement Alternative.

Temporary Construction Impacts. No wetlands and/or state or federal jurisdictional waters occur within the project footprint. No temporary effects to wetland, riparian, or sensitive habitat would occur as a result of the Locally Preferred/Replacement Alternative.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed, effects are unlikely.

### 2.3.3 Plant Species

#### REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) is responsible for the protection of federally listed special-status plant species. “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 species that are formally listed or proposed for listing as endangered or threatened

under the Federal Endangered Species Act (FESA). Please see the Threatened and Endangered Species section in this document for detailed information regarding these species.

This section of the document discusses all federally protected special-status plant species, including USFWS candidate species.

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402.

### AFFECTED ENVIRONMENT

As described under Section 2.3.1, Natural Communities, no natural vegetation communities were observed on or in close vicinity of the AOE. Vegetation consists of ruderal and/or nonnative plant species. A total of 32 special-status plants are known to occur within the area of the San Bernardino South, California, and eight surrounding USGS quadrangles. Of the 32 listed and non-listed special-status plants initially reviewed for occurrence on the project site, none have reasonable potential to occur on or adjacent to the project site. These judgments are based on existing site conditions, including soils, elevation, absence of natural vegetation communities, invasion of nonnative plant species, hydrology or lack thereof, current land use and disturbance, as well as the geographical location of the project site.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of

shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on plant species would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on plant species would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, no effects on plant species would occur. There are no special-status plats on or adjacent to the project site.

Temporary Construction Impacts. Under the Retrofit/Rehabilitation Alternative, no construction-related effects on plant species would occur.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Under the Locally Preferred/Replacement Alternative, no effects on plant species would occur. There are no special-status plats on or adjacent to the project site.

Temporary Construction Impacts. Under the Locally Preferred/Replacement Alternative, no construction-related effects on plant species would occur.

#### AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No avoidance, minimization, and/or mitigation measures are proposed, effects are unlikely.

### 2.3.4 Animal Species

#### REGULATORY SETTING

Many federal laws regulate impacts on wildlife. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the federal Endangered Species Act. Species listed or proposed for listing are discussed in the Threatened or Endangered Species section below. All other federally protected special-status animal species are discussed here, including USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- *National Environmental Policy Act*
- *Migratory Bird Treaty Act*
- *Fish and Wildlife Coordination Act*

If work is being done on federal land (i.e., BLM or Forest Service lands), then those agencies' regulations, policies, and Habitat Conservation Plans are followed.

#### AFFECTED ENVIRONMENT

The bridge understructure is complex and provides nesting habitat for rock pigeon (*Columba livia*) and European starling (*Sturnus vulgaris*), both common, nonnative species. No other wildlife was observed nesting or roosting on the bridge. Other wildlife detected during the site visit included painted lady (*Vanessa cardui*), American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), California ground squirrel (*Spermophilus beecheyi*), and domestic dog (*Canis familiaris*). All of these species are highly adapted to disturbed, human landscapes.

The following eleven listed animal species were initially reviewed as potentially occurring based on the general geographic location of the project site (San Bernardino South, California, and eight surrounding USGS quadrangles):

1. California Yellow-billed Cuckoo (*Coccyzus americanas occidentalis*)
2. Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*)
3. Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
4. Least Bell's Vireo (*Vireo bellii pusillus*)
5. Mountain Yellow-legged Frog (*Rana muscosa*)
6. San Bernardino Merriam's Kangaroo Rat (*Dipodomys merriami parvus*)
7. Stephens' Kangaroo Rat (*Dipodomys stephensi*)
8. Santa Ana Sucker (*Catostomus santaanae*)
9. Coastal California Gnatcatcher (*Polioptila californica californica*)
10. White-tailed Kite (*Elanus leucurus*)
11. American Peregrine Falcon (*Falco peregrinus anatum*)

After evaluation of the site, none of the 11 species are expected to occur. Of the 29 non-listed special-status animals having potential for occurrence based simply on the geographic location of the site, two species of bats are judged to have a low but reasonable potential for occurrence in a legally constraining role. The remaining 27 non-listed special-status animals are judged to have no reasonable potential for occurrence in constraining roles. Factors considered in determining a species' potential for occurrence in a constraining role included presence of potential habitat,

type of potential use of the site (e.g., foraging during migration versus nesting), location of the AOE relative to a species' range, and existing site resources and disturbances.

Although there were no signs of bat roosts detected during the initial site visit, it was concluded at that time that a reasonable potential exists that the bridge provides suitable conditions for two species of special-status, non-listed bats (pallid bat and California western mastiff bat) and it is feasible that bats might be present. Both species would congregate in colonies of up to 100 individuals (CDFG 2002). The bridge underside is complex in structure, and viewing access to areas underneath the bridge was extremely limited during the initial site visit due to railroad security fencing. If bats were to be present during project actions, it is assumed that the bats would be disturbed and would be required to find alternative roost and/or nesting locations for the duration of the project. Depending on the resulting bridge design, this may be a temporary effect only; however, if the relevant design of the bridge changes appreciably and results in loss of suitable roosting and/or nesting habitat for individuals of these two species, effects could be permanent unless mitigating measures are implemented.

A second visit to the AOE was performed on January 14, 2005, to evaluate the potential roosting and nesting opportunities for the pallid bat and California western mastiff bat. The bridge, ground, structures beneath the bridge, and the immediate surroundings were studied at close range during daylight hours, including the use of binoculars as needed. Small to moderate amounts of roosting evidence (e.g., guano) by nonnative rock pigeons (*Columba livia*) and small amounts of roosting by house sparrows (*Passer domesticus*) were documented; but again, no evidence was detected for the routine presence of bats, or nesting/roosting by native birds.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are

anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on animal species would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on animal species would occur.

Under the No Build Alternative, there would not be a new or modified bridge and therefore no associated construction impacts.

#### *Alternative 2, Retrofit/Replacement Alternative*

Permanent Impacts. Although two non-listed special-status bats (pallid bat and California western mastiff bat) were not identified during the site surveys, they have a very low potential to breed or roost on the underside of the bridge, based on the bridge structure and environment. Both bats are state species of special concern. Pallid bats and California western mastiff bats will congregate in colonies of up to 100 individuals (CDFG 2002; Brown-Berry 1992). Pallid bat, although a state species of special concern, remains at this time a relatively common species throughout southern California.

If bats were to be present, permanent loss of suitable roosting and/or nesting habitat for individuals of these two species would occur only if the relevant design of the bridge changes appreciably.

Temporary Construction Impacts. If bats were to be present during project construction, it is assumed that the bats would be disturbed and would be required to find alternative roost and/or nesting locations for the duration of the project. Depending on the resulting bridge design, this may be a temporary effect only.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Though not present during the site surveys, based on the bridge structure and environment, a very low potential exists for two non-listed special-status bats (pallid bat and California western mastiff bat) to use the underside of the bridge for roosting and/or breeding. Both are state species of special concern. If bats were present during project actions, it is assumed that they would be disturbed and would be required to find alternative roost and/or nesting locations for the duration of the project. Depending on the resulting bridge design, this

may be a temporary effect only. However, if the relevant design of the bridge changes appreciably and results in loss of suitable roosting and/or nesting habitat for individuals of these two species, effects could be permanent unless mitigating measures are implemented.

If bats were to be present, permanent loss of suitable roosting and/or nesting habitat for individuals of these two species would occur only if the relevant design of the bridge changes appreciably.

Temporary Construction Impacts. If bats were to be present during project construction, it is assumed that the bats would be disturbed and would be required to find alternative roost and/or nesting locations for the duration of the project. Depending on the resulting bridge design, this may be a temporary effect only.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

The potential, future presence of a large colony (roughly 100 individuals) of California western mastiff bat may pose a constraint to the project. Based on the absence of such a colony during the current fieldwork, there is a less-than-reasonable potential for such a colony to form within 1 year of project construction. If project-related construction work commences more than 1 year of the last site visit to observe bats, a new evaluation of the bridge by a qualified biologist is recommended at that time in order to determine potential construction-related disturbance to such a colony. This will require a single pre-construction visit to the project site, with full access to the underside of the bridge, to determine whether the bridge is being used by bats at that time. The pre-construction visit should be within 1 year of the start of project construction, should be conducted between May 15 and September 15, and no more than one year from the start of project construction in order to obtain conclusive evidence of relevant bat presence/absence. If it is determined that a colony of California western mastiff bats is present that may number 100 individuals or more, the following measures will apply:

- **BIO-1:** Work on the bridge will take place only between October 1 and April 1 (non-breeding season) unless absence of California western mastiff bat is confirmed on the project site within 1 month of initial project construction. This minimizes the risk of destruction or failure of a large, active maternity colony.
- **BIO-2:** Prior to any work that may result in potential disturbance to bats during the non-breeding season, measures will be taken to ensure any California western mastiff bats are passively relocated from those areas of the bridge that will be physically modified and where mortality of bats is a concern. Measures may include excluding access to roost sites under the bridge as conducted under the direction and concurrence of a qualified bat biologist.
- **BIO-3:** For the bridge retrofit/rehabilitation alternative, it may be feasible to replace any lost habitat for California western mastiff bat with artificial roosts during construction efforts,

minimizing the need for relocation from the area. A qualified bat biologist must approve the design and placement of the artificial roosts. The feasibility of this measure may vary with details and timing of project construction. Supplemental concrete panels or other types of bat roost structures should retain as closely as possible the original configuration of occupied crevices, including widths. If California western mastiff bat were known to be present, the new bridge design or retrofit design should incorporate permanent structural features that provide such habitat as well.

### 2.3.5 Threatened and Endangered Species

#### REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Department, as assigned by FHWA, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

#### AFFECTED ENVIRONMENT

A review of existing resource information related to the proposed project was performed to evaluate whether sensitive species could occur in the AOE. Pertinent sources reviewed were:

- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (Skinner and Pavlik 2004).
- California Natural Diversity Database (CNDDB) records search for the San Bernardino South quadrangle and the eight adjacent quadrangles (San Bernardino North, Harrison Mountain, Redlands, Sunnymead, Riverside East, Riverside West, Fontana, Devore) (CDFG 2003).
- Biological Technical Memorandum for the Mount Vernon Avenue Bridge Replacement Project (Parsons Brinckerhoff 2003).
- Jones & Stokes file information and existing literature

Based on the literature and site surveys, no threatened or endangered species occur within or adjacent to the project site; further, coordination with USFWS to request a species list was not required because it is not suspected that the project will affect a Federally listed or proposed species.[15] It is unlikely that the proposed project would result in effects on federally listed species because none were detected or are considered to have potential to occur within the AOE.

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects on threatened and endangered species would not occur. It is unlikely that the No Build Alternative would result in permanent effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the project vicinity.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects on threatened or endangered species would occur.

[15] Caltrans Standard Environmental Reference, Volume II, Chapter 4 (accessed July 6, 2010)

It is unlikely that the No Build Alternative would result in temporary effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the project vicinity.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. It is unlikely that the Retrofit/Rehabilitation Alternative would result in permanent effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the project vicinity.

Temporary Construction Impacts. It is unlikely that the Retrofit/Rehabilitation Alternative would result in temporary effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the project vicinity.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. It is unlikely that the Locally Preferred/Replacement Alternative would result in permanent effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the AOE.

Temporary Construction Impacts. It is unlikely that the Locally Preferred/Replacement Alternative would result in temporary effects on threatened or endangered species because none were detected or are considered to have the potential to occur within the AOE.

#### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

No endangered or threatened species are known to be within the project vicinity. No avoidance, minimization, and/or mitigation measures are proposed, effects are unlikely.

### 2.3.6 Invasive Species

#### 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." 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.

#### AFFECTED ENVIRONMENT

Where the land is not covered by rural residential housing, industrial development, and associated urban infrastructure, it is vegetated by ruderal and/or nonnative plant species.

Observed ruderal and/or nonnative species are listed below, according to invasiveness ratings provided by the California Invasive Plant Council (Cal-IPC).

#### *Not Identified by Cal-IPC*

- Common Horseweed (*Conyza canadensis*),
- Treasureflower (*Gazania linearis*),
- Lamb's-Quarter (*Chenopodium album*), and
- California Fan Palm (*Washingtonia filifera*).

#### *Not Evaluated by Cal-IPC*

Available information indicates that the species does not have significant impacts at the present time or Cal-IPC lacks sufficient information to assign a rating.

- Oleander (*Nerium oleander*),
- Prickly Lettuce (*Lactuca serriola*),
- Common Dandelion (*Taraxacum officinale*),
- Mexican Palo Verde (*Parkinsonia aculeata*), and
- Shamel Ash (*Fraxinus uhdei*).

#### *Limited Cal-IPC Rating*

These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

- Peruvian Pepper-Tree (*Schinus molle*), and
- Canary Island Date Palm (*Phoenix canariensis*).

#### *Moderate Cal-IPC Rating*

These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

- Short-pod Mustard (*Hirschfeldia incana*),
- Tree-of-Heaven (*Ailanthus altissima*),
- Mexican Fan Palm (*Washingtonia robusta*), and
- barley (*Hordeum* spp.)

#### *High Cal-IPC Rating*

These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

- bromes (*Bromus* spp.).

### ENVIRONMENTAL CONSEQUENCES

#### *Alternative 1, No Build Alternative*

Permanent Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur. The City has executed an agreement with BNSF to install temporary shoring which requires removal of the shoring after a 2-year period, resulting in conditions that would require re-closure of the bridge. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers to ensure that the original load carrying capacity is retained. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded. Approximately 4 years after initial shoring installation, an inspection determined that Bent 6, Span 6 (as per built plans) required additional temporary shoring. New girder cracks required the addition of supplementary shoring in order to maintain ongoing use of the bridge; with installation warranting further coordination and approval by BNSF. Additional inspection by Caltrans has occurred and results of the most recent inspection are pending (results are anticipated in late 2010). Should results of this inspection indicate installation of further shoring is required, or repair to existing shoring is necessary, the City may proceed with bridge closure until it the bridge can be replaced in entirety. Additionally, should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Under the No Build Alternative, effects of invasive species would not occur.

Temporary Construction Impacts. Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, neither temporary nor construction-related effects of invasive species would occur.

#### *Alternative 2, Retrofit/Rehabilitation Alternative*

Permanent Impacts. Under the Retrofit/Rehabilitation Alternative, permanent impacts are unlikely to occur due to measures which address the impacts discussed in the following "Temporary Construction Impacts" subsection.

Temporary Construction Impacts. Under the Retrofit/Rehabilitation Alternative, soil disturbance and the introduction of construction vehicles and equipment during construction activities would create the potential for tracking in and establishing the following invasive species in the AOE: bromes (*Bromus* spp.), Short-pod Mustard (*Hirschfeldia incana*), Tree-of-Heaven (*Ailanthus altissima*), Mexican Fan Palm (*Washingtonia robusta*), barley (*Hordeum* spp.), Peruvian Pepper-Tree (*Schinus molle*), and Canary Island Date Palm (*Phoenix canariensis*). Measures are identified to avoid the establishment and invasion of noxious weeds in the AOE during construction activities.

#### *Alternative 3, Locally Preferred/Replacement Alternative*

Permanent Impacts. Under the Locally Preferred/Replacement Alternative, permanent impacts are unlikely to occur due to measures which address the impacts discussed in the following "Temporary Construction Impacts" subsection.

Temporary Construction Impacts. Under the Locally Preferred/Replacement Alternative, soil disturbance and the introduction of construction vehicles and equipment during construction activities would create the potential for tracking in and establishing the following invasive species in the AOE: bromes (*Bromus* spp.), Short-pod Mustard (*Hirschfeldia incana*), Tree-of-Heaven (*Ailanthus altissima*), Mexican Fan Palm (*Washingtonia robusta*), barley (*Hordeum* spp.), Peruvian Pepper-Tree (*Schinus molle*), and Canary Island Date Palm (*Phoenix canariensis*). Measures are identified to avoid the establishment and invasion of noxious weeds in the AOE during construction activities.

### AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

In compliance with the Executive Order 13112 on Invasive Species and subsequent guidance from FHWA, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra 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 an invasion occur. The following measures would be implemented to avoid, minimize and/or mitigate the potential spread of invasive plant species from or into the AOE:

- **BIO-4:** Bared soil will be landscaped with the department's recommended seed mix of locally adapted species to preclude the invasion of noxious weeds. The use of site-specific materials, which are adapted to local conditions, increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem.
- **BIO-5:** Seed purity shall be certified by a planting seed labeled under the California Food and Agricultural Code, or that has been tested within 1 year by a seed laboratory certified by

the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists.

- **BIO-6:** Before mobilizing to arrive at the site and before leaving the site, construction equipment will be cleaned of mud and other debris that may contain invasive plants and/or seeds and inspected to reduce the potential spreading of noxious weeds.
- **BIO-7:** Trucks with loads carrying vegetation shall be covered and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations.

## 2.4 Cumulative Impacts

### 2.4.1 Regulatory Setting

Cumulative impacts are impacts on the environment that result from the incremental impact of a proposed project together with the impacts of other past, present and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts taking place over a period of time.

Cumulative impacts on resources in the project area may result from the impacts of the transportation project together with other past, present, and reasonably foreseeable projects such as residential, commercial, industrial, and other development, as well as from agricultural activities and the conversion to more intensive types of agricultural cultivation. Such land use activities may result in cumulative effects on a variety of natural resources such as species and their habitats, water resources, and air quality. Additionally, they can also contribute to cumulative impacts on the urban environment such as changes in community character, traffic volume and patterns, increased noise, housing availability, and employment.

Cumulative impacts are best evaluated at a geographic scale that reflects their extent and likelihood of occurrence, such as a watershed or air shed, and must not be artificially limited to jurisdictional boundaries. Additionally, different resources may have different cumulative impact areas.

A definition of cumulative impacts under NEPA can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

### 2.4.2 Resources Not Considered in the Cumulative Analysis

#### 2.4.2.1 Impacts with No Direct or Indirect Effect on a Resource

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered, but no impacts were identified. Consequently, there has

been no further analysis in this document, nor is there further discussion in this cumulative analysis, regarding the following issues:

- **Coastal Zone**. The project is not within the State Coastal Zone.
- **Wild and Scenic Rivers**. The project is not in the vicinity of a designated Wild and Scenic River.
- **Farmlands/Timberlands**. There are no farmlands or timberlands within or adjacent to the project site.
- **Hydrology and Floodplains**. The project site is not located in a Federal Emergency Management Agency (FEMA)-designated 100-year floodplain.
- **Sole Source Aquifer(s).** The project is not within a designated Sole Source Aquifer.
- **Encroachment on State Lands**. The project would not encroach on State lands.

Cumulative impacts are not considered when impacts would not cause a direct or indirect effect on a resource and therefore would not contribute to a cumulative impact on that resource.

The Locally Preferred/Replacement Alternative would involve replacement of a bridge structure at its current location with a slight adjustment to the west. Based on the nature of the project, the nature of the project area, and the technical studies prepared for this environmental document, the following resources would not be substantially impacted by the proposed project and are not at risk:

- **Growth**. The Locally Preferred/Replacement Alternative would provide a bridge that is structurally safe and meets current seismic, design, and roadway standards. This alternative does not induce growth or remove obstacles to growth in the area.
- **Existing and Proposed Land Use**. The Locally Preferred/Replacement Alternative would not cause changes to existing uses or future planned uses.
- **Local and Regional Plans and Policies**. The Locally Preferred/Replacement Alternative is consistent with local and regional goals.
- **Parks and Recreational Facilities**. No parks or recreational facilities would be temporarily or permanently impacted by the Locally Preferred/Replacement Alternative. Access would be maintained for local area residents through bus passes provided by the City during project construction and/or bridge closure. The project will not cause permanent changes to any existing on future parks or recreational facilities.
- **Visual /Aesthetics**. The Locally Preferred/Replacement Alternative would not substantially change the existing views of and from the Mount Vernon Avenue Bridge.

- **Paleontological Resources**. Excavation would not exceed depths of approximately 4.6 meters (15 feet) below the existing ground surface; therefore affects to Paleontological Resources within older Pleistocene sediments would be unlikely.
- **Natural Communities**. The project area is urban and disturbed, and no natural communities would be temporarily or permanently impacted by the Locally Preferred/Replacement Alternative.
- **Wetlands or Other Waters**. The Locally Preferred/Replacement Alternative would not impact wetlands. No conversion of natural streambeds would occur.
- **Plant Species**. No sensitive plant species would be temporarily or permanently impacted by the Locally Preferred/Replacement Alternative.
- **Threatened or Endangered Species**. No threatened or endangered species would be temporarily or permanently impacted by the Locally Preferred/Replacement Alternative.

#### 2.4.2.2 IMPACTS WHICH ARE NOT CUMULATIVELY CONSIDERABLE

Cumulative analysis provides a focus on: 1) resources substantially impacted by the project; and/or 2) resources currently in poor or declining health or at risk even if project impacts are relatively small. Unless otherwise specified, this discussion applies to both build alternatives. Cumulative analysis was not provided for the following resources:

##### COMMUNITY CHARACTER AND COHESION

Because the build alternatives would not cause a physical division and the community surrounding the Mount Vernon Avenue Bridge Project are likely remain intact, measures to avoid, minimize and/or mitigate effects are not required. Destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services is not anticipated. Although bridge closure will result in a temporary impact, free bus passes would be provided by the City of San Bernardino as part of Measure TR-2 (discussed in detail in Section 2.1.5) to maintain mobility to individuals (including both pedestrians and cyclists) affected by the bridge closure. Community Character and Cohesion is discussed in detail in Section 2.1.3.1.

##### RELOCATIONS AND REAL PROPERTY ACQUISITIONS

The Locally Preferred/Replacement Alternative does not result in relocation of either residential or non-residential property. While structures on three properties may be affected by this alternative, affects are limited to secondary structures on the properties, and not the primary structures on the properties. Implementation of the Uniform Act is a standard procedure applied to all projects that involve property acquisition, even with the partial acquisition of four residential properties and one commercial property and compensation for partial acquisition would be provided to eligible recipients for the portion of the property acquired, without discrimination. Additional compensation may be provided for any demonstrated damage to the

remainder property. Cumulative impacts as a result of relocation were not considered in this analysis because impacts would not cause a direct or indirect effect on a resource and therefore would not contribute to a cumulative impact on that resource. Further, this analysis provides a focus on: 1) resources substantially impacted by the project; and/or 2) resources currently in poor or declining health or at risk even if project impacts are relatively small; neither of which apply to this environmental subject area. Effects of the project on relocation would not be considered substantial. The project itself does not require the relocation of properties. It is likely each property would retain value, utility and functionality; however, if it is determined that the remainder property would have little or no value or utility, then the property owner would have the option of either accepting full purchase of the remnant or keeping it under their current ownership. Since the project itself does not require the relocation of properties, cumulative analysis for this resource is not warranted.

Since the temporary construction easements would not conflict with existing structures, would not interfere with the properties, and would be necessary only during project construction, relocation effects are unlikely; therefore, cumulative analysis for this resource is not warranted.

#### ENVIRONMENTAL JUSTICE

The Locally Preferred/Replacement Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice. The environmental justice avoidance measure included in the analysis is a standard measure that is generally applied to all federal-aid projects; therefore there are no environmental justice impacts and cumulative analysis for Environmental Justice is not warranted.

#### UTILITIES, EMERGENCY SERVICES, OR PUBLIC SERVICES/FACILITIES

The City would coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction. Temporary bridge closure during project construction would result in impacts to emergency services and/or public services/facilities. These impacts would be temporary and would be addressed with coordination with the service providers, implementation of a construction management plan and implementation of a traffic management plan. Coordination and management plans will be in place, therefore, cumulative analysis for this resource is not warranted.

At this time, known utilizes include a twelve-inch water line, electric line and 30-inch storm drain. Utilities would be protected, adjusted, modified, or relocated. Should relocation be required, the affected utilities would be relocated in accordance with state law and regulations, and City policies; therefore, cumulative analysis for this resource is not warranted.

#### TRAFFIC, TRANSPORTATION, PEDESTRIAN AND BICYCLE FACILITIES

Closure of the service road is being replaced by widening of the alleyway to "access road" standards allowing for full public vehicular access to West 3rd Street; therefore closure of the service road is not cumulatively considerable. Pedestrian access on this road will not be prohibited. The project does not cause a direct or indirect effect on a resource and therefore would not contribute to a cumulative impact on that resource. Therefore, cumulative analysis for this resource is not warranted.

#### AIR

The Locally Preferred/Replacement Alternative will not cause permanent air quality impacts. Air Quality BMP's will be implemented to address temporary air quality concerns due to construction-related activities. The air quality minimization measures included in the analysis are standard measures that apply to all federal-aid projects. There are no air quality impacts and cumulative analysis for air quality is not warranted.

#### NOISE

The contractor is required to adhere to City ordinances and Best Management Practices to minimize noise disturbance during construction. These measures include limitation on construction hours, further limitation on pile driving hours in addition to vehicle and equipment idling restrictions, muffler requirements, and loading/unloading restrictions. In addition, equipment staging areas will not be located adjacent or in close proximity to residential properties. These measures will ensure that construction noise disturbance will be minimized; therefore, cumulative analysis for this resource is not warranted.

Although retaining walls will be constructed, they will be landscaped with creeping fig to attenuate any secondary noise reflection from train operations.

#### ANIMAL SPECIES

Mount Vernon Avenue Bridge understructure provides a nesting habitat for two non-listed special-status bats (pallid bat and California western mastiff bat). During all site-surveys conducted for biological resources, special-status bats were not present. A very low potential exists for the special-status bats. Additionally, the special-status bats are less likely to be in structures within the project vicinity due to the lack of nesting habitat in the surrounding structures. This resource is not anticipated to substantially be affected by the project; therefore, cumulative analysis for this resource is not warranted.

#### INVASIVE SPECIES

For this alternative, cumulative impacts of invasive species were not considered in this analysis because impacts would not cause a direct or indirect effect on a resource and therefore would not

contribute to a cumulative impact on that resource. Further, this analysis provides a focus on: 1) resources substantially impacted by the project; and/or 2) resources currently in poor or declining health or at risk even if project impacts are relatively small; neither of which apply to this environmental subject area.

In compliance with the Executive Order 13112 on Invasive Species and subsequent guidance from FHWA, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra 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 an invasion occur.

Measures to prevent the potential spread of invasive plant species erosion control are contained within the Department Standard Specifications, which are applied consistently to all projects, and effects to native/non-invasive species are not anticipated to substantially be effected by the project. Therefore cumulative analysis for this resource is not warranted.

### 2.4.3 Resources Considered in the Cumulative Analysis

#### 2.4.3.1 Cultural Resources

##### Resource Study Area Definition

The resource study area for cultural resources is defined as an area within 0.5 mile of the project APE. The records search indicated that within 0.5 mile of the project area, there were three historic archaeological sites, four pending historic archaeological sites, two historic structures, and three or more possible historic structures.

##### Current Health and Historical Context

As early as the mid 1800s, the resource study area has included facilities that support transportation and rail. Additionally, in the early 1900s the Atchison, Topeka & Santa Fe Passenger and Freight Depot was constructed as well as the Mount Vernon Avenue Bridge, both of which are listed or eligible for listing in the National Register. Historic resources have been composed of transportation-related structures, and since the mid-1800s, no notable changes have occurred that constitute a change in historic character within the resource study area.

##### Project Impacts that May Contribute to a Cumulative Impact

***Direct Impacts***

The historic character of Mount Vernon Avenue Bridge would be altered, damaging the integrity of the bridge's historic property, constituting and adverse effect to the bridge under Section 106

## Table 2-31. Past, Present and Reasonably Foreseeable Actions

| Site ID[1] | Name | Proposed Uses | Status |
|---|---|---|---|
| 1. | La Placita | New 98,000 S.F. shopping center w/ market, 2 restaurants, 2 multi-tenant retail buildings located at 1184 W. 2nd Street. | Approved |
| 2. | Residential Tract | Subdivide 12.42-acre into 95 unit PRD w/ GPA located at San Marcos Street, 150 feet north of Walnut Street | Approved |
| 3. | Residential Tract | 48 unit gated small lot subdivision on 5,000 SF lots located at 1611 West Walnut Street. | Approved |
| 4. | Beauty Salon | Proposed new use by establishing a beauty salon located at 1317 East Rialto Avenue | Submitted |
| 5. | ARCO | Gas station with convenience store located at 542 North Mount Vernon Avenue | Approved |
| 6. | Candle Shop | Candle shop, new parking lot, refuse enclosure, and other improvements located at 646 North Mount Vernon Avenue. | Approved |
| 7. | Office Building | Construct a 2-story office building with podium parking located at 1159 West 5th Street. | Submitted |
| 8. | Mechanic Shop | Proposed mechanic shop located at 161 North J Street | Submitted |
| 9. | Storm Drain | Viaduct Blvd Storm Drain Realignment | Submitted |
| 10. | Park | La Plaza Park Fencing and Lighting | Submitted |
| 11. | Sewer | 3rd Street Sewer Replacement from “G” to “H” Street | Submitted |
| 12. | Sewer | G Street Sewer Replacement from 9th to 4th | Submitted |
| 13. | Sewer | Rialto Avenue Sewer Replacement from K to H | Submitted |
| 14. | Signal | Traffic Signal at Viaduct Blvd and 2nd Street | Submitted |
| 15. | Signal | Upgrade Traffic Signal at Rialto Ave and I Street | Submitted |
| 16. | Parking Structure | Construct new Metrolink Parking Structure to the northwest and adjacent to Mount Vernon Avenue Bridge | Approved |

**SOURCES:** Billups, D., 2007
City of San Bernardino Capital Improvements Program 2009/2010
SHPO Finding of Effect for the Metrolink Parking Structure Project, March 2009.

**NOTE:** [1]Site ID numbers correspond to Figure 2-2, Local Development Projects

of the NHPA. It is not anticipated that archaeological resources or human remains will be encountered The SHPO concurred with this finding on September 18, 2007.

#### *Indirect Impacts*

The project would have no adverse effect on the historic Santa Fe Depot located at 170 West 3rd Street. The SHPO concurred with this finding on September 18, 2007.

#### *Cumulative Impacts*

Cumulative Impacts due to bridge replacement are unlikely. The project will adhere to all measures outline in the MOA with the SHPO. Recordation measures will be completed.

Photographs will be taken, showing the bridge's historic engineering features and permanently archived to Historic American Engineering Record (HAER) photographic specifications and, if possible, historic construction drawings will be included in the HAER. A written historical and descriptive report will be completed and copies of the documentation will be retained by the Department (District 8) and offered to the California Room of the City's Feldhym Library. The replacement will be constructed with a design developed in consultation with the SHPO. Landscape elements contributing to the historic setting will be replaced. Additionally, the project proposes other aesthetic measures to ensure that the proposed replacement bridge is consistent in architecture, scale, and size to the existing bridge and surroundings, to the extent feasible.

Although the project would have no adverse indirect effect on the historic Santa Fe Depot located at 170 West 3rd Street, the replacement will be constructed with a design developed in consultation with the SHPO and with architectural details in order to convey character-defining elements of the original historic structure and to be visually compatible with the adjacent Santa Fe Depot.

Additionally, although no archaeological resources or human remains are anticipated to be encountered, during construction of the proposed project, unknown buried resources could exist. If cultural materials 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. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

#### OTHER CURRENT AND REASONABLY FORESEEABLE ACTIONS

With the exception of one project, the current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area and APE for the project; therefore, these actions will not have a cumulative effect on the historic character of Mount Vernon Avenue Bridge.

The Metrolink Parking Structure Project is within the cumulative impact resource study area. A Finding of Effect for the Metrolink Parking Structure Project was prepared in March of 2009. The report concluded that there was no finding of Adverse Effect on the surrounding historic

properties within the APE (Mount Vernon Avenue Bridge and Santa Fe Depot); therefore no cumulative impact is anticipated.

#### INFORMATION SOURCES

The following information sources were used in this analysis:

- The National Register of Historic Places web site (www.cr.nps.gov/nr)
- State Office of Historic Preservation Historic Properties Inventory
- California Historical Landmarks (State of California, 1996)
- California Points of Historical Interest (State of California, 1992)
- Caltrans Historic Bridge Inventory (Caltrans, March 5, 1987)
- Historic Highway Bridges of California (Caltrans, 1990)
- San Bernardino County Museum, Photograph Archives
- City of San Bernardino, Public Library (Feldheym Branch), California Room

#### METHODOLOGY

The APE for Cultural Resources was signed by the Department District 8 Environmental Branch Chief on August 8, 2000, and by the FHWA Transportation Engineer on December 23, 2000. Based on this APE, a Historic Property Survey Report (HPSR) was prepared in August 2001 by John W. Snyder, Preservation Services. The HPSR was submitted in August 2001 and received SHPO concurrence on March 1, 2002.

Subsequently, the project limits were changed to accommodate design modifications, requiring additional Section 106 studies. Jessica Feldman, Architectural Historian with Jones & Stokes, conducted an onsite survey of the bridge on January 15, 2004, and returned for a second survey on April 20, 2004. Additionally, a supplemental records and literature search was requested from the San Bernardino Archaeological Information Center at the San Bernardino Museum in San Bernardino by Ms. Feldman on April 14, 2004. The revised APE was set to include the proposed width of the rehabilitated or replacement bridge, including the maximum right-of-way for the proposed project. A revised APE for the project was established in consultation with Christie Hammond, Caltrans PQS, and Fawne Yamashiro, Local Assistance Engineer, on April 26, 2004. The APE includes all areas subject to temporary or permanent changes in access (ingress and egress). Additional parcels that were identified as visually associated with the bridge were included within the revised APE.

One vacant parcel was included in the APE after having been identified by the project engineers as the proposed site for staging and construction: a parcel on the north side of 3rd Street to the west of the Mount Vernon Avenue Bridge. The APE was extended south on Mount Vernon Avenue to King Street to accommodate proposed re-striping of the street. The original APE boundary line at the intersection of 2nd Street and Bridge Boulevard was also revised.

With the revised APE, the 1st Supplemental HPSR was prepared which received Caltrans concurrence in June 2006 with SHPO concurrence on the finding of Adverse Effect on September 18, 2007. The APE Map is included in the 2007 1st Supplemental HPSR.

#### CONCLUSION

With the exception of the Metrolink Parking Structure Project, the current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area and APE for the project, would occur below original ground, or below the existing roadbed; therefore, these actions would not have a cumulative effect on the historic character of Mount Vernon Avenue Bridge. Because a finding of no Adverse Effect was determined for the Metrolink Parking Structure Project, no cumulative impact is anticipated.

### 2.4.3.2 WATER QUALITY AND STORMWATER RUNOFF

#### RESOURCE STUDY AREA DEFINITION

The resource study area is limited to those areas where soils can be affected by erosion and therefore limited to the project construction boundaries. In the event that contaminated groundwater is encountered, the resource study area would expand to cover the extent of the groundwater plume.

#### CURRENT HEALTH AND HISTORICAL CONTEXT

The project site is located within the Santa Ana River watershed, in the Inland Santa Ana Basin. The RWQCB, Santa Ana Region (Region 8) is responsible for regulating the watercourse in the Santa Ana River watershed. Lytle Creek, located approximately 0.6 km (0.4 mile) to the southwest of the project site, flows southeast into the Santa Ana River. A surface drainage channel located immediately outside of the northwest portion of the project area flows to the southeast and connects with the City stormwater system. This channel is located underground through the rail yard and surfaces south of the Metrolink parking lot.

The extent of groundwater contamination is currently under investigation under the oversight of the RWQCB. Groundwater in the vicinity of the project has dropped from 12 feet below grade in 1988 to over 300 feet below grade in 2009. According to Mr. Maneck Chichgar, Project Manager, of the RWQCB Santa Ana office, groundwater beneath the site may be greater than 300 feet below the surface; however, the groundwater investigation is still ongoing. Groundwater levels can fluctuate due to seasonal variations, groundwater withdrawal or injection, and other factors.[16]

[16] In September 1997, groundwater was encountered in four borings at depths of 45 and 63 feet below the ground surface (Earth Mechanics, Inc., Final Preliminary Foundation Report, August 2000, updated March 2009)

### PROJECT IMPACTS THAT MAY CONTRIBUTE TO A CUMULATIVE IMPACT

#### *Direct Impacts*

Since the replacement bridge would be slightly wider than the existing bridge, there is a slight increase in impervious surfaces. Construction of the bridge structure foundation may reach contaminated groundwater. The water table elevation affects both the methods of construction. Intermediate piers would be founded on larger diameter pile shafts with steel casings. The steel casings would be driven into the ground and would be partially cleaned out: the soil inside the hollow steel casings would be removed to a specified depth. Pile shafts may extend below the groundwater elevation. In the case that some groundwater enters the steel casings, the groundwater inside the steel casings would be removed either by being displaced by the concrete that would be placed to form the pile foundation, or by pumping the water out after first sealing the end of the casing against further water intrusion.

#### *Indirect Impacts*

Due to an increase in impervious surfaces, an increase in the amount of onsite runoff may result.

#### *Cumulative Impacts*

Cumulative impacts as a result of an increase in impervious surface and corresponding increase in runoff is unlikely. Drainage improvements will be designed in consultation with the appropriate agencies and would not substantially alter the existing conditions. BMPs will be implemented in compliance with the NPDES permit requirements to minimize the potential for project effects on water quality, including the violation of any water quality standards or waste discharge requirements. The proposed project will be regulated under city of San Bernardino MS4 / NPDES Permit accordance with the CWA and will require the preparation of a Stormwater Data Report (SWDR). A SWPPP, which will identify BMPs to mitigate water quality effects on receiving waters resulting from surface water runoff from the project site, will be required as part of the General Permit from the SWRCB.

Cumulative impacts may result from foundation construction reaching contaminated groundwater. Abutment foundations would be founded on piles and based on the pier type selected for the new bridge, drilling activities would be limited to approximately 100 feet. Nevertheless, groundwater could be negatively affected by the foundation construction for the proposed project.

Impacts could result from pile driving into potentially contaminated groundwater; however, since the extent of groundwater contamination is currently under investigation under the oversight of the RWQCB the potential for this impact is unknown at this time.

#### OTHER CURRENT AND REASONABLY FORESEEABLE ACTIONS

The resource study area is limited to those areas where soils can be affected by erosion and therefore limited to the project construction boundaries. The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, other actions would not have a cumulative effect water quality and stormwater runoff.

#### INFORMATION SOURCES

- Initial Site Assessment (Ninyo & Moore 2010a);
- Technical Memorandum for Final Preliminary Foundation Report (PFR) for Structure Type Selection (Earth Mechanics, Inc., 2009 update)
- Report of Geotechnical Investigation San Bernardino Santa Fe Station Rehabilitation San Bernardino, California (Kleinfelder, 1999)

#### METHODOLOGY

Additional analyses would be performed to more accurately establish depth to groundwater at the proposed project site. During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted and a study of seasonal variation of groundwater depths would be prepared that would include a search of historic records of groundwater depths in the area. If it is determined that drilling activities associated with the proposed project would affect existing groundwater, minimization measures would be developed and implemented to minimize project effects on groundwater. If groundwater is encountered, then it would be tested to determine if it's contaminated.

#### CONCLUSION

The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, other actions would not have a cumulative effect water quality and stormwater runoff.

### 2.4.3.3 GEOLOGY / SOILS / SEISMICITY / TOPOGRAPHY

#### RESOURCE STUDY AREA DEFINITION

There are no outstanding examples of major geological features, natural landmarks, or mineral resources within the project vicinity; therefore, the resource study area does not have to extend beyond the construction boundary for the project to include a these resources.

The project site is not located within the Alquist-Priolo Special Studies Zones (located to the northeast and west of the project); therefore, these zones have not been included in the resource study area.

The project site is designated as Moderately High to Moderate for liquefaction susceptibility (City of San Bernardino, 2005). However, based on soil boring data collected in September

1997, the saturated onsite soils consist of either dense to very dense sand or stiff to very stiff sandy silt. The relative density of the sandy soil is high enough to be resistant to liquefaction and the silty soil layer has sufficient fines and high enough Standard Penetration Test (SPT) blowcounts to resist widespread liquefaction; therefore, liquefaction potential is not considered to be a design issue (Earth Mechanics, Inc., 2009 update). Effects of liquefaction were not factored into the resource study area. However, the potential for liquefaction would be further evaluated during the PS&E final design phase due to the depth of the groundwater table below the site.

The resource study area is limited to those areas where soils can be affected by erosion and therefore limited to the project construction boundaries.

### CURRENT HEALTH AND HISTORICAL CONTEXT

The proposed project site is located on an alluvial fan consisting of Tujunga loamy sand, a part of the Tujunga Series. Runoff is slow to very slow. The hazard of water erosion is slight, but the soil would blow away if left unprotected. Available water capacity is 10 to 13 centimeters (4 to 5 inches) (USGS, 2000). The site is also located within an area of potential ground subsidence (City of San Bernardino, 2005).

### PROJECT IMPACTS THAT MAY CONTRIBUTE TO A CUMULATIVE IMPACT

#### *Direct Impacts*

Strong ground motion could occur in the event of a substantial earthquake. The hazard of water erosion is slight due to groundbreaking during construction.

#### *Indirect Impacts*

Siltation as a result of groundbreaking/disturbance could be an issue for this project because there is a surface drainage channel located in the northwest portion of the project area.

#### *Cumulative Impacts*

A cumulative impact due to groundshaking in the event of a substantial earthquake is unlikely. The bridge design will meet the standard construction practices for the Department and City of San Bernardino transportation projects, which require compliance with the latest seismic standards. Measures are identified to minimize the potential for effects involving seismically induced strong ground shaking. The most up-to-date Acceleration Response Spectra curves for soil profile D (M = 7.5± 0.25) in the California Department of Transportation Seismic Design Criteria would be used for the proposed bridge design. Due to its proximity to the San Andreas Fault, the bridge would be seismically designed to consider a maximum credible earthquake of magnitude of 8.0 on the Richter scale.

A cumulative impact due to erosion and siltation is unlikely. Earthwork in the project area would be performed in accordance with the most current edition of the California Department of Transportation Standard Specifications and/or the requirements of applicable government agencies. Detailed earthwork recommendations will be provided in the design geotechnical report, and these recommendations will be incorporated into the project specifications. Erosion control measures will also include the use of berms to direct runoff away from exposed soils and slopes, and proper grading techniques will be utilized. For fill slopes, surface water runoff shall be directed to suitable outlets to reduce the likelihood of surficial erosion of the slopes. Slopes shall be planted with vegetation as soon as feasible after the completion of grading to reduce the amount of erosion on the slope face. A 3-m (10-foot) buffer, using fencing or flags, will be established around the drainage channel. Appropriate erosion or runoff controls will be implemented to prevent siltation effects on the nearby wetlands.

#### PROJECT IMPACTS THAT MAY CONTRIBUTE TO A CUMULATIVE IMPACT

The project is not located within an Alquist-Priolo Special Studies Zone. Faults identified to be active or potentially active are not known to be present within the project footprint. Nevertheless, since the area is seismically active, the bridge design would be required to meet the standard construction practices for the Department and City of San Bernardino transportation projects, which require compliance with the latest seismic standards. Measures are identified to minimize the potential for effects involving seismically induced strong ground shaking. Additionally, the most up-to-date Acceleration Response Spectra curves for soil profile D (M = 7.5± 0.25) in the California Department of Transportation Seismic Design Criteria shall be used for the proposed bridge design.

#### OTHER CURRENT AND REASONABLY FORESEEABLE ACTIONS

The resource study area is limited to the project construction boundaries. The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, other actions would not have a cumulative effect on soils and liquefaction.

#### INFORMATION SOURCES

- Technical Memorandum for Final Preliminary Foundation Report (PFR) for Structure Type Selection (Earth Mechanics, Inc., 2009 update)
- Report of Geotechnical Investigation San Bernardino Santa Fe Station Rehabilitation San Bernardino, California (Kleinfelder, 1999)
- City of San Bernardino. 2005. General Plan Update. November.

#### METHODOLOGY

Measures for erosion control are contained within the Department Standard Specifications, which are applied consistently to all projects. The potential for liquefaction would be further

evaluated during the PS&E final design phase due to the depth of the groundwater table below the site.

#### CONCLUSION

The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, these actions would not have a cumulative effect on Geology/Soils/Seismicity/Topography in the immediate project vicinity.

### 2.4.3.4 HAZARDOUS MATERIALS

#### RESOURCE STUDY AREA DEFINITION

The resource study area is limited to those areas where hazardous waste/materials may be present. In the event that contaminated groundwater is encountered, the resource study area would expand to cover the extent of the groundwater plume.

#### CURRENT HEALTH AND HISTORICAL CONTEXT

Soils within the project site have been investigated for petroleum hydrocarbons (TPH), long-chain hydrocarbons and lead. In May 2003, the RWQCB issued a "No Further Action" (NFA) determination for TPH and proceeded with subsequent case closure in March 2004. In February 2006, the RWQCB issued a NFA determination for long-chain hydrocarbons and lead in the vicinity of the proposed project's shoofly track area (former location of diesel shops) and proceeded with subsequent case closure in September 2009. Due to historic releases at the BNSF rail yard, a groundwater plume affected with chlorinated solvents is located in the vicinity of the project area.

#### PROJECT IMPACTS THAT MAY CONTRIBUTE TO A CUMULATIVE IMPACT

***Direct Impacts***

Permanent direct impacts are unlikely to occur due to measures which address temporary construction impacts. Temporary direct impacts may occur with (1) potential release of hazardous materials as a result of spills and (2) potential exposure to contaminated soils, groundwater, ACM's, LBP and herbicide contaminated soils which could potentially result in health effects.

***Indirect Impacts***

Permanent indirect impacts are unlikely due to the lack of permanent direct impacts. Temporary indirect could result from pile driving potentially into contaminated groundwater; however, since the extent of groundwater contamination is currently under investigation under the oversight of the RWQCB the potential for this impact is unknown at this time. During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted. If groundwater would be impacted, then it would be tested to determine if

it's contaminated.

#### *Cumulative Impacts*

Cumulative Impacts are not anticipated due to the implementation of measures addressing potential temporary construction impacts. To ensure potential effects involving hazardous materials/waste during construction are avoided or reduced, the following will be carried out: (1) request for an access permit from BNSF (2) implementation of a soil monitoring plan (3) testing of soil, and groundwater if encountered, for COC's, petroleum hydrocarbons and VOCs during the PS&E final design phase (4) if contaminated soil, groundwater, USTs, septic systems, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes are encountered, implementation of a contingency plan to profile waste for proper handling by a state-certified hazardous material hauler/recycling facility licensed for the profiled waste (5) ACM removal by a licensed Cal/OSHA-Certified Asbestos Consultant with notification and fees to SCAQMD (6) compliance with LBP laws and regulations and abatement and/or encapsulation of LBPs by a licensed lead abatement removal contractor (7) adherence to Caltrans Department Standard Special Provision (SSP) XE 14-001 for removal of yellow striping or thermoplastic paint and (8) adherence to OSHA regulations Title 29 CFR part 1926 regarding lead and California standard 8 CCR Section 1532.1.

The extent of groundwater contamination is currently under investigation under the oversight of the RWQCB; therefore, the potential for this impact is unknown at this time. During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted. If groundwater would be impacted, then it would be tested to determine if it's contaminated. Due to forthcoming investigations, the cumulative impact of potentially encountering contaminated groundwater cannot be determined at this time.

### OTHER CURRENT AND REASONABLY FORESEEABLE ACTIONS

The resource study area is limited to the project construction boundaries. Because the extent of groundwater contamination is currently under investigation under the oversight of the RWQCB, the resource study area addressing potentially contaminated groundwater cannot be established. The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, other actions would not have a cumulative hazardous waste/ material effect.

### INFORMATION SOURCES

- Initial Site Assessment (Ninyo & Moore 2010a);
- Asbestos and Lead Based Paint Survey (Ninyo & Moore 2010b);
- Technical Memorandum for Final Preliminary Foundation Report (PFR) for Structure Type Selection (Earth Mechanics, Inc., 2009 update); and

- Report of Geotechnical Investigation San Bernardino Santa Fe Station Rehabilitation San Bernardino, California (Kleinfelder, 1999)

#### METHODOLOGY

Historical research, document review, and site assessment activities were conducted between July 6 and August 7, 2009.

#### CONCLUSION

The current and reasonably foreseeable actions identified under Table 2-31 are not within the resource study area; therefore, other actions would not have a cumulative hazardous waste/ material effect.

# **Chapter 3.** Comments and Coordination

## 3.1 Consultation and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Both agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and informal coordination with different agencies. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

### 3.1.1 Interagency Coordination and Consultation

A notice was distributed on July 13, 2004 to local area residents as well as elected officials and local, state, and federal agencies. The notice identified the project, explained why it was needed and solicited comments/questions. Table 3-1 shows permits, reviews, and approvals would be required for the project.

**Table 3-1 Permits, Reviews and Approvals**

| Agency | Permit/Approval | Status |
|---|---|---|
| State Water Resources Control Board (SWRCB) | Clean Water Act Section 402-NPDES. Prior to issuance of any grading permits, the City will prepare a SWPPP and provide proof that a Notice of Construction was filed for the coverage under the state NPDES for construction-related discharges. This evidence will consist of a Waste Discharge Identification Number (WDID) issued by SWRCB. | To be submitted after approval of final Environmental Document |
| State Office of Historic Preservation (SHPO) | As part of the Section 106 process, an MOA would be developed between the SHPO and the Department due to the finding of Adverse Effect for the bridge. Additional design details will likely be developed in the pending MOA, which will be finalized after public review of the Environmental Assessment. This MOA also requires concurrence of the Department and the City. Architectural design of the proposed structures will be submitted to and approved by City officials prior to alteration of the existing historical resources. | A draft of the MOA was submitted to SHPO for review on December 3, 2008. To date, comments on the MOA have not been received. This document is to be finalized and approved after public circulation of the draft Environmental Document |
| Burlington Northern Santa Fe (BNSF) Railroad | Encroachment Permit application submittal during PS&E final design.<br><br>Cooperative Agreement process to commence during PS&E final design. | A series of discussions, including participation in the VA for the project, have occurred with BNSF and preliminary plans were approved at that time of the VA.<br><br>The Cooperative Agreement will be coordinated with the CPUC. |
| **SOURCES:** Supplemental Historic Property Survey Report (Jones & Stokes, 2007b<br>Initial Site Assessment (Ninyo & Moore, 2010a) | | |

Consultation and coordination (detailed in Table 3-2) with the following agencies has occurred:

- San Bernardino Associated Governments (SANBAG)
- Burlington Northern Santa Fe Railroad (BNSF)
- Southern California Regional Rail Authority (SCRRA)
- Regional Water Quality Control Board, Santa Ana Region (RWQCB)
- County of San Bernardino (County)

**Table 3-2 Agency Coordination**

| Agency | Coordination Topic | Coordination Method | Coordination Timeframe |
|---|---|---|---|
| SANBAG | - RTIP updates<br>- SANBAG right of way beneath SCRRA bridge | - Telephone<br>- E-mail correspondence | - Yearly official coordination<br>- Frequent status updates |
| BNSF | - Vertical clearance<br>- Construction staging<br>- Tracks during construction<br>- Shoofly tracks | - City consultant selection<br>- PDT meetings<br>- Participation at public meeting<br>- Value Analysis (VA)<br>- Focus meetings<br>· Construction staging<br>· With City Mayor | - Meetings (past 12 years)<br>- 2005 extensive coordination<br>- 2006 extensive coordination<br>- 2008 Value Analysis (VA)<br>- January 2010 environmental survey/testing coordination<br>- March 2010 meeting (1) regarding project updates to (2) reintroduce the project, (3) discuss project development process and procedures for design oversight of the railroad, (4) design review, and (5) review status and current construction schedule. |
| SCRRA | - Project features<br>- Construction | - Field meeting | - Summer 2005 |
| RWQCB | - Hazardous waste Initial Site Assessment (ISA)<br>- soils contaminated with TPH<br>- soil contaminated with "long-chain hydrocarbons" and lead<br>- proposed shoofly track area<br>- ongoing groundwater investigation | - Request for records<br>· May 2003 NFA and March 2004 closure for soils with TPH<br>· February 2006 NFA and September 2009 closure for soil contaminated with "long-chain hydrocarbons" and lead at shoofly track area (former diesel shops)<br>- Telephone interview | - Summer 2005 records request<br>- July 2009 Geotracker records<br>- July 2009 telephone interview with Mr. Maneck Chichgar (RWQCB) indicating groundwater and extent of contamination is currently under investigation |
| County | - Hazardous waste Initial Site Assessment (ISA) | - Request for records | - Summer 2005 |

**SOURCES:** Regional Transportation Improvement Program (SCAG, 2006)
Supplemental Historic Property Survey Report (Jones & Stokes, 2007b)
Initial Site Assessment (Ninyo & Moore, 2010a)

Native American coordination was also conducted through the following correspondence:

- Native American Heritage Commission letter dated April 28, 2004 was sent to Rob Wood requesting information regarding sacred lands and a list of Native American organizations/individuals to contact.
- Native American Heritage Commission response received May 10, 2004 was sent to Mark Robinson (Jones & Stokes) with a list of organizations/individuals to contact.

- Letters were sent to the San Fernando Band of Mission Indians and various representatives of the San Manual Band of Mission Indians in accordance with the list of organizations/individuals received from the Native American Heritage Commission. Table 3-3 shows the complete Native American contact information for the organization/ interested individual that was contacted.
- San Manuel Band of Mission Indians response received September 17, 2004 was sent to Mark Robinson indicating that the tribe is unaware of any culturally sensitive areas in the proposed project area.

**Table 3-3 Native American Contact Information**

| Contact Person | Address | Organization |
|---|---|---|
| Ali Kashani<br>Environmental Coordinator | PO Box 266<br>Patton, CA 92369. | San Manuel Band of Mission Indians |
| Bernadette Brierty<br>Cultural Resources Coordinator | PO Box 266<br>Patton, CA 92369 | San Manuel Band of Mission Indians |
| Geri Farr<br>Tribal Administrator | PO Box 266<br>Patton, CA 92369 | San Manuel Band of Mission Indians |
| Mr. Marquez<br>Chairperson | PO Box 266<br>Patton, CA 92369 | San Manuel Band of Mission Indians |
| John Valenzuela<br>Chairperson | PO Box 221838<br>Newhall, CA 91322 | San Fernando Band of Mission Indians |
| **SOURCES:** Archaeological Survey Report (Jones & Stokes, 2007a)<br>Supplemental Historic Property Survey Report (Jones & Stokes, 2007b)<br>Native American Heritage Commission Letter dated May 10, 2004 | | |

The following coordination has also occurred to address cultural resources pursuant to Section 106 of the National Historic Preservation Act:

- August 2000 - The Area of Potential Effect (APE) for Cultural Resources was signed by the Department (District 8) Environmental Branch Chief.
- December 2000 - The APE for Cultural Resources was signed by the FHWA Transportation Engineer.
- August 2001 - A Historic Property Survey Report (HPSR) was prepared and submitted to the SHPO based on the study area delineated by the APE.
- March 2002 - SHPO concurrence on the HPSR.
- April 2004 - Due to expanded footprint, a supplemental records and literature search was requested from the San Bernardino Archaeological Information Center at the San Bernardino Museum.
- April 2004 - A revised APE for Cultural Resources was signed by the Department.
- June 2007 - A 1st Supplemental HPSR and Finding of Effect (FOE) was prepared and submitted to SHPO based on the revised APE.
- September 2007- SHPO concurrence was received on the HPSR and FOE.

- December 2009 - Informal review of a draft Memorandum of Agreement (MOA) occurred and the MOA will be formally submitted to the SHPO after public circulation of the draft environmental document.

## 3.2 Public Participation

### 3.2.1 2000 Public Information Meeting

An informational meeting was held on Wednesday, March 8, 2000, in the San Bernardino City Hall Council Chambers from 4:00 to 7:30 p.m. The meeting was advertised in the *San Bernardino Sun* during the week of March 2, 2000. Notices were mailed to property owners in the project vicinity, agencies, the Mount Vernon Area Redevelopment Project Area Committee (PAC), and the Project Development Team (PDT). In addition, the City mailed out notices of the informational meeting to public officials, state, and federal agencies, and interested groups and individuals.

Approximately 20 people attended the informational meeting. Exhibits listing the project goals and depicting the various alternatives were shown and described by project staff. Handouts were provided for additional information. Input from area residents and business owners was solicited. General concerns from the public included the appearance of the new bridge (old Mission style).

### 3.2.2 2004 Public Information Meeting

#### 3.2.2.1 MEETING DATE AND LOCATION

A second Public Information Meeting (Open House) for the project was held on Wednesday, July 21, 2004, from 6:00 p.m. to 9:00 p.m., in the Community Room at the historic Santa Fe Depot, 1170 West 3rd Street, San Bernardino, California. The meeting location is adjacent to the existing Mount Vernon Avenue Bridge. Facilities at the meeting location satisfy the accessibility requirements of the American with Disabilities Act (ADA) for persons with disabilities. Public bus and rail transit are available to and from the meeting location, along with parking facilities for private vehicles and bicycles.

#### 3.2.2.2 PUBLIC OUTREACH AND NOTICES

Project team members prepared a bilingual English-Spanish “Notice of a Public Meeting” and “Comment Card” for distribution to the project area community. A mailing list of public agency representatives was compiled in coordination with City staff. For the general public mailing list, 2,249 residential and commercial mailing addresses were identified in an area encompassing about a ½-mile radius around the proposed project site. A commercial direct mail organization printed, collated, posted, and mailed the meeting notices on Tuesday, July 13, 2004. City staff placed notices of the meeting in

local newspapers (San Bernardino Sun and La Opinion) for publication on July 18 and 20, 2004. In addition to the mailings and newspaper notices, City staff coordinated with Mayor Judith Valles and City Councilmember Esther Estrada to inform local community members of the meeting. Councilmember Estrada personally contacted numerous persons and businesses in the vicinity of the proposed project site.

#### 3.2.2.3 MEETING ATTENDEES

According to sign-in sheets from the meeting, a total of 46 members of the public were in attendance. In addition, representatives from the City of San Bernardino included: Councilmember Esther Estrada; Nick Gonzalez, Office of Mayor Judith Valles; James Funk, Director of Development Services; Michael Grubbs, former Acting City Engineer; Mark Lancaster, City Engineer; Fermin Preciado, Planning Department. Other government and public agency representatives included: Assemblyman John Longville; Juan Lopez, Office of Assemblyman Longville; Alicia Colburn, Caltrans; Victoria Baker, San Bernardino Association of Governments; Rohan Kuruppu, Omnitrans; Wilbur Wilson, Omnitrans; Mike Burrows, BNSF Railroad/Staubach Co. A reporter from the San Bernardino Sun newspaper attended the meeting. Members of the consulting team (Lim & Nascimento Engineering, CNS Engineers, and Myra L. Frank/Jones & Stokes) also were present.

#### 3.2.2.4 MEETING FORMAT AND PRESENTATION

The meeting began at 6:00 p.m. with an open house for members of the community to review project materials and meet with project team members. Engineering drawings and aerial maps were stationed around the meeting room with representatives of the project available to provide information and answer questions. Following the open house, at about 7:00 p.m., a formal presentation commenced. Councilmember Estrada welcomed the meeting attendees and provided a brief introduction and background about the project. William Nascimento, LAN Engineering, then presented a slide presentation about the project. The presentation slides were bilingual English-Spanish, and Spanish translators were present for anyone requiring language assistance. Jack Ottaway, Myra L. Frank/Jones & Stokes, explained the environmental review process for the proposed project. At the conclusion of the slide presentation, a question-and-answer period was opened for members of the community. Project team members transcribed notes summarizing the questions asked and the answers that were provided. Meeting attendees were encouraged to submit additional questions and concerns to city staff on comment cards or via telephone, fax, and e-mail. A deadline of Friday, August 20, 2004, was established for submission of comments to the City.

#### 3.2.2.5 ISSUES OF CONCERN

In addition to the questions posed at the Public Information Meeting / Open House, community members have submitted eight comment cards and one letter. Some of the issues of concern included the following:

- *Bridge Closure*: A general theme among many comments was the impact of the current bridge closure and the need to quickly restore temporary service on the bridge. Business owners and residents observed that closure of the bridge was resulting in social and economic impacts to the community.
- *Schedule/Funding*: Community members expressed a high degree of frustration about the length of time the project planning and development process has taken since studies were initiated almost 10 years ago. Several persons questioned the availability of funding for the project given the delays. Others noted that infrastructure and public works projects on the west side of the City have not proceeded as smoothly as in other areas.
- *Emergency Services*: Concerns were cited about emergency services access and response times, both at present with the bridge closed, and later when the bridge is closed for construction. The project team was urged to re-open the bridge as soon as possible and to expedite delivery of a new bridge so that the health and safety of nearby residents would not be jeopardized by delays in emergency response times.
- *Project Scope*: Members of the public questioned whether the project would accommodate or induce expansion of the BNSF railroad facility into the neighboring community.
- *Truck Traffic*: Several persons noted impacts to the community from trucks parking on local streets. It was suggested that trucks be restricted or required to pay for access to the proposed bridge and City street system. Truck traffic on detour routes also was a matter of concern, particularly for some residents in the nearby cities of Colton and Rialto.
- *Historic Preservation*: Both verbal and written comments were made regarding the cultural and historic importance of the Mount Vernon Avenue Bridge and its environs. It was suggested that measures be taken to incorporate design elements into a new bridge that would replicate the qualities of the historic bridge. Other efforts to commemorate the history of the bridge were encouraged (e.g., a bridge celebration with souvenirs, making pieces of the former bridge available to collectors).

- *Public Involvement*: Requests were made to ensure adequate notice to the community of any substantial changes in the project. It was also important to community members that environmental documentation be made available for public review. A desire was expressed that representatives of the BNSF railroad be in attendance at any future public events for the proposed project.

None of the public meeting attendees and none of the persons submitting written comments expressed opposition to the proposed project.

## 3.3 Project Development Team

At the inception of project planning, the PDT was established to direct the course of engineering and environmental studies for the Mount Vernon Avenue Bridge Project. The purpose of the PDT was to:

- develop a set of alternatives that met the purpose, need, and scope of the project;
- assess the engineering, environmental, social, and economic aspects of the proposed project alternatives and develop and evaluate measures to mitigate potential impacts of the project;
- ensure that local agency, state, and federal requirements are met;
- establish and conduct a program of community and interagency coordination to communicate project issues; and
- prepare recommendations regarding selection of a preferred alternative.

The PDT included representatives from the following agencies and consultants:

- City of San Bernardino
- California Department of Transportation, District 8
- Federal Highway Administration (FHWA)
- Parsons Brinckerhoff Quade & Douglas, Inc.

In instances where the agencies were not able to attend the Project Development Team meetings, the interests of these agencies were solicited for discussion during the meetings. During an April 6, 2004 meeting, after considering a 2004 Bridge Study Report prepared for Mount Vernon Avenue Bridge, it was decided that the retrofit/rehabilitation alternative was not the preferred alternative, and that the replacement bridge would be identified as the locally preferred alternative.

On April 29, 2004, the Department Structures Maintenance and Investigations staff independently performed a biennial bridge inspection and found critical girder and connection failure as a result of fatigue at several locations in the southbound lanes of the bridge. Consequently, the southbound lanes were closed to vehicular traffic. After further investigation by additional bridge specialists from the Department Headquarters, it was recommended that the bridge be closed.

The City closed the bridge to all vehicular traffic on June 4, 2004. The City has since initiated efforts to install temporary bridge shoring that would allow the bridge to be reopened; however, in accordance with a pending agreement between the City and BNSF railroad, the temporary shoring may only remain in place for a period not to exceed 2 years.

## 3.4 Comments and Response to Comments

This environmental assessment (EA) for the proposed project will be available for public review. During this time, comments pertaining to this project will be received. After the public review period is finished, the Department will respond to any comments, and applicable changes will be incorporated in the final EA. The final environmental document will include all the comments received and the Department's responses.

# **Chapter 4.** List of Preparers

## City of San Bernardino

| | |
|---|---|
| Robert Eisenbeisz, P.E. | *City Engineer* |
| Mike Grubbs, P.E. | *Project Manager* |

## ICF International

| | |
|---|---|
| Charles Smith, AICP | *Environmental Project Director* |
| Brian Calvert | *Environmental Project Director* |
| Donna McCormick, AICP | *Environmental Project Director* |
| Jean Lafontaine | *Project Manager, Senior Environmental Planner* |
| Richard Starzak | *Senior Architectural Historian* |
| Kurt Campbell | *Senior Biologist* |
| Denise Souliotes | *Environmental Research Assistant* |
| Melissa Kennedy | *Environmental Research Assistant* |
| Teal Zeisler | *Environmental Research Assistant* |
| Jack Ottoway | *Environmental Planner* |
| Steve Bossi | *Environmental Planner* |
| Scott Larsen | *Environmental Planner* |
| Mayra Medel | *Environmental Planner* |
| Tanya Jones | *Environmental Planner* |
| Mari Piantka | *Environmental Planner* |
| Shilpa Trisal | *Environmental Planner* |
| Matt McFalls | *Environmental Planner* |

## AECOM

| | |
|---|---|
| Char Mohan | *Vice-President, Transportation* |
| William Nacimiento | *Engineering Consultant* |
| Todd Dudley | *Senior Project Engineer* |
| Alicia Colburn | *Environmental Manager* |

## Iteris

| | |
|---|---|
| Steven B. Greene | *Associate V.P., Transportation Systems* |

## Ninyo & Moore

| | |
|---|---|
| David Shaler | *Senior Geologist* |
| Krista A. Brodersen | *Senior Project Environmental Scientist* |

## Parsons Brinckerhoff

| | |
|---|---|
| David Clark | *Manager of Environmental Service, Task Manager* |
| Steven Wolf | *Supervising Environmental Planner* |
| Kevin Keller, AICP | *Environmental Planner* |
| Theresa Dickerson | *Environmental Planner* |
| Veronica Chan | *Environmental Planner* |

## Chambers Group, Inc.

| | |
|---|---|
| Don Mitchell | *Director of Terrestrial Biology, Biological Analysis* |
| Paul Brenner | *Permitting Specialist, Biological Analysis* |
| Kathryn Buescher | *Senior Wildlife Biologist, Biological Analysis* |
| Richard S. Shepard, M.A. | Lead Archeological Surveyor |

## ATS Consulting

| | |
|---|---|
| Andrew Somerville | *Associate* |
| Darren Nielson | *Associate* |

## Preservation Services

| | |
|---|---|
| John Snyder | *President, Cultural Resources* |

## Associated Engineers

| | |
|---|---|
| Doug Goodman | *City Engineer, Project Manager* |

# **Chapter 5.** Distribution List

Hard copies of this Environmental Assessment (EA), electronic copies of this EA on compact disk, and hard copies of the Public Notice (Notice of Availability of an Environmental Assessment, along with an Opportunity for a Public Hearing), have been sent in various combinations to agencies and individuals as identified in this chapter.

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| **Federal Agencies** | | | | |
| Barbara Boxer, US Senator | 201 North "E" Street, Suite 210<br>San Bernardino, CA 92401 | | X | X |
| Joe Baca, Congressman, Dist. 43 | 201 North "E" Street, Suite 102<br>San Bernardino, CA 92401 | | X | X |
| Mark Durham | US Army Corps of Engineers<br>Los Angeles District<br>PO Box 532711<br>Los Angeles, CA 90053-2325 | | X | X |
| | US Fish & Wildlife Service<br>6010 Hidden Valley Road<br>Carlsbad, CA 92011-4219 | | X | X |
| **State Agencies** | | | | |
| Caltrans | Division of Environmental Analysis<br>NEPA Delegation Office -MS 27<br>P.O. Box 942874<br>Sacramento, CA 94274 --0001 | X | X | X |
| Aaron Burton | Department of Transportation<br>D8 Environmental Local Assistance<br>464 West 4th Street, 6th Floor<br>MS-1162<br>San Bernardino, CA 92401 | X | X | X |
| Office of Planning and Resources | State Clearinghouse<br>PO Box 3044<br>Sacramento, CA 95812-3044 | X | X | X |
| Milford Wayne Donaldson, State Historic Preservation Officer | California Office of Historic Preservation<br>P.O. Box 942896<br>Sacramento, CA 95814 | X | X | X |
| Chatsworth Regional Office | Cal-EPA Department of Toxic Substances Control<br>9211 Oakdale Avenue<br>Chatsworth, CA 91311-6505 | X | X | X |
| Joe Serna Jr. | Cal-EPA Department of Toxic Substances Control Headquarters<br>P.O. Box 806<br>Sacramento, CA 95812-0806 | X | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Gunther Moskat | Cal-EPA Department of Toxic Substances Control Headquarters<br>P.O. Box 806<br>Sacramento, CA 95812-0806 | X | X | X |
| Mark Stuart, Chief | California Department of Water Resources- Southern District<br>770 Fairmont Avenue, Suite 102<br>Glendale, CA 91203-1035 | X | X | X |
| Clerk of the Board | California Resource Board<br>1001 "I" Street<br>PO Box 2815<br>Sacramento, CA 95812 | | X | X |
| Curt Taucher, Manager | California Department of Fish & Game<br>Inland Deserts Region<br>3602 Inland Empire Blvd., Suite C-220<br>Ontario, CA 91764 | | X | X |
| Dennis Wade, Air Pollution Specialist | California Air Resources Board<br>1001 "I" Street, 7th Floor<br>Sacramento, CA 95814 | | X | X |
| Paul D. Thayer<br>Executive Director | California State Lands Commission<br>100 Howe Avenue, #100<br>Sacramento, CA 95825 | | X | X |
| California Department of Conservation | 655 S. Hope Street, #700<br>Los Angeles, CA 90017 | | X | X |
| California Department of Conservation | 801 K Street, MS 12-30<br>Sacramento, CA 95814 | | X | X |
| California Highway Patrol | P.O. Box 942898<br>Sacramento, CA 94298 | | X | X |
| California Highway Patrol | 2211 Western Ave.<br>San Bernardino, CA 92411 | | X | X |
| California Highway Patrol | Inland Communications Center<br>847 E. Brier Drive<br>San Bernardino, CA 92408-2820 | | X | X |
| Wilmer Amina Carter, Assembly Member, Dist. 62 | 335 N. Riverside Ave.<br>Rialto, CA 92376 | | X | X |
| **Regional Agencies** | | | | |
| Deborah Robinson Barmack<br>Executive Director | San Bernardino Associated Governments<br>1170 West 3rd Street<br>San Bernardino, CA. 92410-1715 | X | X | X |
| Laverne Jones, Intergovernmental Review | Southern California Association of Governments (SCAG)<br>818 W. Seventh Street, 12th Floor<br>Los Angeles, CA 90017-3435 | X | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Gerald J. Thibeault, Executive Director | Regional Water Quality Control Board<br>Santa Ana Basin Region 8<br>3737 Main Street, Suite 500<br>Riverside, CA 92501-3339 | X | X | X |
| Michael Delgado | South Coast Air Quality Management District<br>385 N. Arrowhead, 5th Floor<br>San Bernardino CA 92415 | | X | X |
| **County Departments** | | | | |
| Larry Walker, Auditor/Controller-Recorder | County of San Bernardino<br>Auditor/Controller Division<br>222 West Hospitality Lane<br>San Bernardino, CA 92415-0018 | X | X | X |
| Daniel J. Avera, REHS Division Chief | County of San Bernardino<br>Environmental Health Services<br>385 North Arrowhead Ave., 2nd Floor<br>San Bernardino, CA 92415-0160 | X | X | X |
| Vana R. Olson, Director | County of San Bernardino<br>Public Works Department<br>825 East Third Street<br>San Bernardino, CA 92415-0835 | X | X | X |
| Kevin Blakeslee Deputy Director | San Bernardino County<br>Department of Public Works<br>Flood Control District<br>825 East Third Street<br>San Bernardino, Ca 92415 | X | X | X |
| Brendon Biggs, Planning Chief | County of San Bernardino<br>Transportation Department<br>825 East Third Street<br>San Bernardino, CA 92415-0835 | X | X | X |
| Julie Rynerson Rock, Director | SB County Land Use Service Dept.<br>385 North Arrowhead Avenue, 1st Floor<br>San Bernardino, CA 92415-0182 | X | X | X |
| Peter H. Wulfman Division Manager | San Bernardino County<br>Department of Public Works<br>Solid Waste Management<br>825 East Third Street<br>San Bernardino, CA 92415 | | X | X |
| Peter Wulfman, Division Manager | County of San Bernardino, Dept. of Public Works- Waste Mgmt Division<br>222 West Hospitality Lane, 2nd Floor<br>San Bernardino, CA 92415-0017 | | X | X |
| Gary Thomas, Ed.D. County Superintendent | San Bernardino County Superintendent of Schools<br>601 North E Street<br>San Bernardino, CA 92410 | | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Ed Kieczykowsky, County Librarian | San Bernardino County Library Administration<br>104 W. 5th Street<br>San Bernardino, CA 92415 | | X | X |
| Pat Dennen, Fire Chief | County of San Bernardino Fire Dept.<br>157 West Fifth Street, 2nd Floor<br>San Bernardino, CA 92415-0451 | | X | X |
| Sheriff Rod Hoops | San Bernardino County Sheriff's Department<br>Central Station<br>655 East Third Street<br>San Bernardino, CA 92415-0061 | | X | X |
| Josie Gonzalez, Fifth District Supervisor | San Bernardino County Government Center<br>385 N. Arrowhead Ave., 5th floor<br>San Bernardino, CA 92415-0110 | | X | X |
| Jeff Rigney | County of San Bernardino Special District<br>157 West Fifth Street, 2nd Floor<br>San Bernardino, CA 92415-0450 | | X | X |
| **City Departments** | | | | |
| Charles E. McNeely, City Manager | City of San Bernardino City Hall<br>300 N. "D" Street<br>San Bernardino, CA 92418 | X | X | X |
| Robert Eisenbeisz, City Engineer | City of San Bernardino Department of Public Works<br>300 N. "D" Street, 3rd floor<br>San Bernardino, CA 92418 | X | X | X |
| Terri Rahhal, Deputy Director, City Planner | City of San Bernardino Division of Planning<br>City Engineer<br>300 N. "D" Street, 3rd floor<br>San Bernardino, CA 92418 | X | X | X |
| Valerie C. Ross, Development Services Department Director | City of San Bernardino City Hall<br>300 N. "D" Street, 3rd floor<br>San Bernardino, CA 92418 | X | X | X |
| Dr. Arturo Delgado, Superintendent | San Bernardino City Unified School District<br>777 North F Street<br>San Bernardino, CA 92410 | X | X | X |
| Ken Fischer, Public Services Department Director | City of San Bernardino City Hall<br>300 N. "D" Street, 3rd floor<br>San Bernardino, CA 92418 | X | X | X |
| City of San Bernardino Fire Department | 200 East 3rd Street<br>San Bernardino, CA 92410-4804 | X | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| City of San Bernardino Fire Department | Station #222<br>1201 W. 9th St.<br>San Bernardino, CA 92411-2213 | | X | X |
| Michael A. Billdt, Chief of Police | City of San Bernardino<br>Police Department<br>710 North D Street<br>San Bernardino, CA 92401 | | X | X |
| San Bernardino Police Department | Western District (Area A)<br>1332 W. 5th St.<br>San Bernardino, CA 92411-2626 | X | X | X |
| San Bernardino Police Department | Western District (Area A)<br>1574 W. Baseline St.<br>San Bernardino, CA 92411-1736 | | X | X |
| San Bernardino Police Department | Santa Fe Depot (Western District) Office<br>1204 W. 3rd Street<br>San Bernardino, CA 92410 | | X | X |
| **Other** | | | | |
| Larry Myers, Executive Secretary | Native American Heritage Commission<br>915 Capitol Mall, Room 964<br>Sacramento, CA 95814 | | X | X |
| Eric Ray<br>Airport Operations | San Bernardino International Airport<br>Inland Valley Development Agency<br>294 South Leland Norton Way, Suite #1<br>San Bernardino, California 92408 | | X | X |
| Stacey Aldstadt, General Manager | San Bernardino Municipal Water<br>300 N. D. Street - 5th Floor<br>San Bernardino, CA 92418 | | X | X |
| Randy Van Gelder, General Manager | San Bernardino Valley Municipal Water District<br>P.O. Box 5906<br>San Bernardino, CA 92412-5906 | | X | X |
| San Bernardino Area Chamber of Commerce | 546 West 6th Street<br>San Bernardino, CA 92410 | X | X | X |
| AMR National Headquarters | American Medical Response<br>6200 South Syracuse Way # 200<br>Greenwood Village, CO 80111 | X | X | X |
| AMR Del Rosa Office | American Medical Response<br>2601 Del Rosa Ave, Suite 108<br>San Bernardino, CA 92404 | X | X | X |
| Millicent Price, Acting Library Director | Paul Villaseñor Branch Library<br>525 North Mount Vernon Avenue<br>San Bernardino, CA 92411-2698 | X | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Jennifer Ares, District Manager | Inland EmpireResource Conservation District<br>25864-K Business Center Drive<br>Redlands, CA 92374 | | X | X |
| Region Manager | Southern California Edison<br>PO Box 800<br>Rosemead, CA 91770 | | X | X |
| Pat Morris, Board of Directors | Omnitrans Bus Terminal<br>1700 W. Fifth St.<br>San Bernardino, CA 92411 | X | X | X |
| Inland Region Headquarters | Southern California Gas Company 1981 W Lugonia Ave<br>Redlands, CA 92374 | X | X | X |
| Centralized Correspondence | Southern California Gas Company<br>P.O. Box 3150<br>San Dimas, CA 91773 | X | X | X |
| Environmental Services | Southern California Gas Company<br>MLGT16G3<br>555 W. 5th Street<br>Los Angeles, CA 90013 | | X | X |
| Mario Romero | Southern California Gas Company<br>624 W 4th St<br>San Bernardino, CA 92410 | | X | X |
| Jim Kissinger, Principal | Richardson Prep Hi Middle School<br>455 South K St.<br>San Bernardino, CA 92410 | | X | X |
| Irma Gastelum, Principal | Lytle Creek Elementary School<br>275 South K St.<br>San Bernardino, CA 92410 | | X | X |
| Jack Oakes, Principal | Ramona-Alessandro Elementary School<br>670 Ramona Ave.<br>San Bernardino, CA 92411 | | X | X |
| Anita Alfonso, Principal | Mount Vernon Elementary School<br>1271 W. 10th St.<br>San Bernardino, 92411 | | X | X |
| Atchison, Topeka and Santa Fe Railway Co | c/o BNSF<br>PO BOX 1786<br>Topeka, KS 66601 | X | X | X |
| Atchison, Topeka and Santa Fe Railway LTD | c/o BNSF<br>5200 E Sheila Street<br>Los Angeles, CA 99004 | X | X | X |
| Mark Kirchinger | BNSF Railroad<br>1535 W. 4th Street<br>San Bernardino, CA 92411 | X | X | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Juan M. Acosta<br>BNSF Director, Govt. Affairs<br>California | Burlington Northern Santa Fe Railway<br>Government Affairs<br>1127 11th St., Ste. 242<br>Sacramento, CA 95814-3883 | X | X | X |
| LaDonna V. DiCamillo<br>Director, Govt. Affairs<br>So. Cal | Burlington Northern Santa Fe Railway<br>Government Affairs<br>One World Trade Center, Ste. 1680<br>Long Beach, CA 90831 | X | X | X |
| Trini M. Jimenez<br>Director, Govt. Affairs<br>So. Cal | Burlington Northern Santa Fe Railway<br>Government Affairs<br>One World Trade Center, Ste. 1680<br>Long Beach, CA 90831 | X | X | X |
| Naresh Patel,<br>Engineering Manager | Metrolink<br>Administrative Office<br>700 South Flower Street, Suite 2600<br>Los Angeles, CA 90017 | X | X | X |
| Ron Mathiew,<br>Engineering Construction | Metrolink<br>Administrative Office<br>700 South Flower Street, Suite 2600<br>Los Angeles, CA 90017 | X | X | X |
| Wade Smith,<br>Environmental Officer | Amtrak Southwest Division<br>810 North Alameda Street<br>Los Angeles, CA 90012 | X | X | X |
| Fifth Street Senior Citizens Center | 600 W. 5th St<br>San Bernardino, CA 92410 | | X | X |
| Perris Hill Senior Center | 780 E 21st St<br>San Bernardino, CA 92404 | | X | X |
| Downtown Apostolic Church | 760 W 6th St<br>San Bernardino, CA 92410 | | X | X |
| Good Shepherd United Presbyterian Church | 829 N Mt Vernon Ave.<br>San Bernardino, CA 92411 | | X | X |
| Guadalupe Center | 1475 W 7th St.<br>San Bernardino, CA 92411 | | X | X |
| Holy Tabernacle Church | 1323 West Belleview St.<br>San Bernardino, CA 92410 | | X | X |
| Metrolink San Bernardino Station | Park & Ride<br>1204 W. 3rd St.<br>San Bernardino, CA 92410 | | X | X |
| San Bernardino Greyhound Bus Station | 596 North G Street<br>San Bernardino, CA 92410 | | X | X |
| Rosemary Acosta,<br>Interested Individual | | | | X |
| Dipak Doshi,<br>Interested Individual | | | | X |
| Moises Garcia,<br>Interested Individual | | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Wendell Jones, Interested Individual | | | | X |
| Robert McBay, Interested Individual | | | | X |
| Marqueda Lydia, Interested Individual | | | | X |
| Dolores Razo, Interested Individual | | | | X |
| Jess Vasquez, Interested Individual | | | | X |
| Louise Morana, Interested Individual | | | | X |
| Donna Rangel, Interested Individual | | | | X |
| Jan Musquez, Interested Individual | | | | X |
| George Flores, Interested Individual | | | | X |
| Gloria Moyeda, Interested Individual | | | | X |
| Ruth Ruiz, Interested Individual | | | | X |
| James Funk, Interested Individual | | | | X |
| Wilbur Wilson, Interested Individual | | | | X |
| Alfredo Encino, Interested Individual | | | | X |
| Teresa Flores-Lopez, Interested Individual | | | | X |
| Juan Lopez, Interested Individual | | | | X |
| Victoria Casim, Interested Individual | | | | X |
| Richard Villa, Interested Individual | | | | X |
| Janena Alcantar, Interested Individual | | | | X |
| Consuelo Lopez, Interested Individual | | | | X |
| Marilyn Alcantar, Interested Individual | | | | X |
| Esther Estrada, Interested Individual | | | | X |
| Alicia Colburn, Interested Individual | | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Dolores Caldera, Interested Individual | | | | X |
| Jimmy Mar, Interested Individual | | | | X |
| Fermin Preciar, Interested Individual | | | | X |
| Carmen Quiroga, Interested Individual | | | | X |
| Teresa Enciso, Interested Individual | | | | X |
| Edward and Nate Cardenas, Interested Individuals | | | | X |
| Martha Lemos, Interested Individual | | | | X |
| Lila Flores, Interested Individual | | | | X |
| Margaret Estrada, Interested Individual | | | | X |
| Palo Smaf, Interested Individual | | | | X |
| Jose L.K. Fonseca, Interested Individual | | | | X |
| Carl Clemons, Interested Individual | | | | X |
| Ruth E. Tovak, Interested Individual | | | | X |
| Mayra Lopez, Interested Individual | | | | X |
| Rafaela Preciado, Interested Individual | | | | X |
| Carmen Lopez, Interested Individual | | | | X |
| Mary Lopez, Interested Individual | | | | X |
| Nick Gonzalez, Interested Individual | | | | X |
| Rohan Kuruppu, Interested Individual | | | | X |
| Charlie Gabriel, Interested Individual | | | | X |
| Randy Wyatt, Interested Individual | | | | X |
| Victoria Baker, Interested Individual | | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Celia Sandoval, Interested Individual | | | | X |
| Dina Arneda, Interested Individual | | | | X |
| Mark Hitchcock, Interested Individual | | | | X |
| North West Pac Hampton, Interested Individual | | | | X |
| Gina Tenorio, Interested Individual | | | | X |
| Emma Torres, Interested Individual | | | | X |
| A.T. Saavedra, Interested Individual | | | | X |
| Frank and Vela Stallworth, Interested Individual | | | | X |
| Jess and Betty Vasquez, Interested Individuals | | | | X |
| Lisa Martin, Interested Individual | | | | X |
| Mike Burrows, Interested Individual | | | | X |
| Gabriel Perez, Interested Individual | | | | X |
| Esther Perez, Interested Individual | | | | X |
| Amy Flores, Interested Individual | | | | X |
| Occupant | APN 0137011060000<br>APN 0137011290000<br>1405 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137011300000<br>1435 W Rialto Ave<br>San Bernardino, CA 92408 | | | X |
| Occupant | APN 0137012010000<br>1393 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012090000<br>1359 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012150000<br>104 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0137012160000<br>114 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012190000<br>142 S Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012210000<br>1324 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012230000<br>1336 W Belleview St<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012240000<br>1340 W Belleview St<br>San Bernardino, CA 92401 | | | X |
| Occupant | APN 0137012250000<br>1348 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012260000<br>1353 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012290000<br>1335 W Belleview St<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012300000<br>1329 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012310000<br>1323 W Belleview Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012320000<br>158 S Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137012330000<br>166 S Mt Vernon St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012350000<br>180 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012470000<br>1370 Bellview<br>San Bernardino, CA 92408 | | | X |
| Occupant | APN 0137012530000<br>1341 W Belleview St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0137012540000<br>APN 0137012560000<br>1335 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012590000<br>1375 W Rialto Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0137021080000<br>101 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021090000<br>1271 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021100000<br>1261 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137021110000<br>1259 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137021160000<br>150 S Giovanola Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021170000<br>154 S Glovanola Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021180000<br>1248 Belleview<br>San Bernardino, CA | | | X |
| Occupant | APN 0137021190000<br>1260 W Belleview St<br>San Bernardino, CA | | | X |
| Occupant | APN 0137021210000<br>1274 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021220000<br>145 S Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137021240000<br>118 S Giavanola<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021250000<br>139 S Mt Vern0n<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022050000<br>1241 Rialto Ave<br>San Bernardino, CA 92401 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0137022080000<br>1211 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022100000<br>128 Eureka Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022110000<br>138 Eureka Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022120000<br>148 Eureka Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137022160000<br>1226 Belleview St<br>San Bernardino, CA | | | X |
| Occupant | APN 0137022180000<br>1238 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022210000<br>1206 Belleview<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022220000<br>1208 Belleview<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031010000<br>149 Eureka Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031020000<br>139 Eureka Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137031030000<br>121 Eureka Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031060000<br>1185 Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031070000<br>1179 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031080000<br>1175 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0137031190000<br>1197 W Rialto Ave<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0137031200000<br>1195 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137061070000<br>165 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137061080000<br>1275 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137061090000<br>1271 W Belleview St<br>San Bernardino, CA 92404 | | | X |
| Occupant | APN 0137061100000<br>1265 W Belleview St<br>San Bernardino, CA | | | X |
| Occupant | APN 0137061110000<br>1259 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138041080000<br>662 N Pico Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138041090000<br>656 N Pico Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138041100000<br>648 N Pico Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138041140000<br>628 N Pico Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138041160000<br>1404 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138041190000<br>1456 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138041230000<br>1440 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138041240000<br>1448 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138041260000<br>1458 W 6th St<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138041360000<br>640 N Pico Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042010000<br>1398 W Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042050000<br>1385 W 7th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042060000<br>1367 W 7th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042070000<br>1347 W 7th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042120000<br>694 N Mt. Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042150000<br>676 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042170000<br>658 Mt Vernon Ave<br>San Bernardino, CA 92405 | | | X |
| Occupant | APN 0138042180000<br>1324 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042190000<br>1326 Victoria St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138042200000<br>1328 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042210000<br>1336 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042250000<br>1368 W Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138042260000<br>1380 W Victoria<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042270000<br>1384 Victoria St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138043010000<br>1398 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043030000<br>1381 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043040000<br>1377 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043050000<br>1373 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043060000<br>1367 Victoria St<br>San Bernardino, CA 92404 | | | X |
| Occupant | APN 0138043070000<br>1347 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043080000<br>1337 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043090000<br>1331 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043100000<br>1327 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043120000<br>648 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138043130000<br>644 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043140000<br>630 N Mt Vernon Ave<br>San Bernardino, CA 92345 | | | X |
| Occupant | APN 0138043170000<br>610 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043180000<br>602 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043210000<br>1318 W 6th St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138043220000<br>1328 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043260000<br>1368 W 6th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138043270000<br>1378 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138043280000<br>1388 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051030000<br>1241 W 7th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138051050000<br>1227 W 7th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138051090000<br>1208 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051100000<br>1212 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138051110000<br>1220 W Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051140000<br>1236 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051150000<br>1246 W Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051160000<br>1252 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138051170000<br>1226 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052030000<br>1288 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138052050000<br>1272 W 6th St<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138052060000<br>1262 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138052090000<br>1250 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138052100000<br>1242 W 6th<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052140000<br>1212 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052160000<br>620 Garner Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052170000<br>1207 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052190000<br>1221 Victoria St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138052220000<br>1249 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138052230000<br>1253 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052240000<br>1255 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052250000<br>1279 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052260000<br>1271 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138052290000<br>631 N Mt Vernon<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052300000<br>1227 Victoria St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138053010000<br>663 Garner Ave<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138054010000<br>619 Garner Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138054020000<br>1195 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054030000<br>1187 Victoria St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138054040000<br>1181 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054050000<br>1175 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054060000<br>1169 Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054220000<br>1150 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054240000<br>1164 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138054260000<br>1180 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054270000<br>1188 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104020000<br>APN 0138104120000<br>528 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104030000<br>594 N Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104040000<br>588 N Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104050000<br>582 Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104070000<br>558 Roberds Ave<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138104080000<br>556 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104090000<br>554 Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104100000<br>544 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104110000<br>530 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104130000<br>526 Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104150000<br>1458 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104160000<br>1460 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138104170000<br>1048 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138104180000<br>1472 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138104240000<br>523 N Western Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104250000<br>535 Western Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138104270000<br>551 Western Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104280000<br>555 Western Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138104290000<br>563 Western Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111050000<br>580 N Pico Ave<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138111090000<br>566 N Pico Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111300000<br>551 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111350000<br>563 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111360000<br>565 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111380000<br>567 Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138111440000<br>587 Roberds Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138111450000<br>557 Roberds Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111480000<br>588 N Pico Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138111510000<br>1430 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112040000<br>1387 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112050000<br>1377 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138112090000<br>578 Herrington Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112100000<br>556 N Herrington Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112110000<br>1354 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112120000<br>1364 Spruce St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138112130000<br>1374 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112140000<br>1384 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112150000<br>1398 Spruce<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112170000<br>1357 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138113020000<br>1387 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138113040000<br>1367 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138113050000<br>1355 Spruce St<br>San Bernardino, CA 92401 | | | X |
| Occupant | APN 0138113060000<br>1347 W Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138113090000<br>1372 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138113110000<br>1380 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138114030000<br>577 Herrington Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138114060000<br>596 Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138114100000<br>552 N Mt. Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138114110000<br>1316 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138114150000<br>1326 Spruce St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138114160000<br>1328 Spruce<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138114170000<br>1324 Spruce<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138114180000<br>578 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138115120000<br>1338 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138121010000<br>599 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121040000<br>1255 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138121060000<br>1241 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138121070000<br>1235 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138121080000<br>1227 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121110000<br>1207 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121120000<br>1208 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121130000<br>1214 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121140000<br>1220 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138121150000<br>1226 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121160000<br>1238 Spruce St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138121170000<br>1240 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121180000<br>1242 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138121190000<br>1250 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121200000<br>1256 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121210000<br>1264 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121220000<br>1272 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121290000<br>579 Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122160000<br>1271 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122170000<br>1263 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122180000<br>1253 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122190000<br>1249 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122200000<br>1241 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122210000<br>1235 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122220000<br>1227 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122230000<br>1219 Spruce St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138122240000<br>1211 Spruce St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138122260000<br>1208 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122280000<br>1248 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138122290000<br>1258 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122320000<br>501 N Mt Vernon Ave<br>San Bernardino, CA 92324 | | | X |
| Occupant | APN 0138123020000<br>1193 6th St<br>San Bernardino, CA 92405 | | | X |
| Occupant | APN 0138123040000<br>1171 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123050000<br>1163 W 6th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123060000<br>1143 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138123160000<br>1120 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123170000<br>1128 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123180000<br>1134 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123190000<br>1144 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123200000<br>1148 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123210000<br>1164 Spruce St<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138123220000<br>1170 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138123250000<br>1188 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138123270000<br>1139 6th<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138123280000<br>1174 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138123290000<br>1172 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124010000<br>1195 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138124020000<br>1187 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124030000<br>1179 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124040000<br>1169 W Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124050000<br>1163 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138124060000<br>1155 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138124070000<br>1147 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124080000<br>517 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124100000<br>1131 Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124110000<br>1125 Spruce St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138124120000<br>1119 Spruce St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138124130000<br>1111 Spruce St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138124180000<br>1122 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124190000<br>1124 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124210000<br>1142 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124220000<br>1150 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124230000<br>1156 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124270000<br>1188 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124280000<br>517 Garner Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138173090000<br>1475 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138173100000<br>1467 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138173110000<br>1461 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138173120000<br>1457 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138173130000<br>1453 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138173140000<br>1456 W Kingman St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138173160000<br>1474 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138173170000<br>1482 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138174080000<br>1487 W Kingman St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138174110000<br>1457 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138174120000<br>1455 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138174130000<br>1472 W 4th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138174260000<br>1479 Kingman St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138181010000<br>1449 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181030000<br>1445 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181050000<br>1431 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138181080000<br>1407 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181110000<br>1379 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181140000<br>1363 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181150000<br>1355 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181270000<br>1320 W Kingman St<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138181300000<br>1340 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181310000<br>1358 W Kingman<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181360000<br>1400 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181380000<br>1430 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138181390000<br>1436 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181430000<br>1454 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181440000<br>1380 W Kingman St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138181450000<br>1370 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138182030000<br>1439 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182070000<br>1407 W Kingman St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138182080000<br>1399 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182110000<br>1371 W Kingman St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138182120000<br>1367 W Kingman St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138182140000<br>1343 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182170000<br>1317 W Kingman St<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138182210000<br>436 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138182240000<br>1328 4th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138182270000<br>1358 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182280000<br>APN 0138182330000<br>APN 0138182420000<br>1390 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182290000<br>1364 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182320000<br>1418 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182340000<br>1432 W 4th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138182370000<br>1448 W 4th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138182380000<br>1415 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182390000<br>1430 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182400000<br>1310 W 4th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138182410000<br>1314 W 4th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138191010000<br>1293 W Fifth St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138191020000<br>1285 W 5th St<br>San Bernardino, CA 92405 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138191050000<br>APN 0138191040000<br>1263 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138191060000<br>1257 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138191070000<br>1255 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138191200000<br>1241 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138191210000<br>1229 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138191230000<br>1203 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192010000<br>1199 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192140000<br>1141 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192150000<br>1135 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192160000<br>1121 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192170000<br>1119 W 5th St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138192210000<br>1169 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138251010000<br>1335 W 3rd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251020000<br>1329 W 3rd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251030000<br>1323 W 3rd St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138251050000<br>240 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138251060000<br>232 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251070000<br>224 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138251090000<br>APN 0138251080000<br>202 N Mt. Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138251130000<br>1344 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138251170000<br>1337 3rd St<br>San Bernardino, CA 92401 | | | X |
| Occupant | APN 0138251200000<br>210 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251220000<br>230 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251250000<br>1336 W 2nd<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138263030000<br>1108 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281030000<br>1423 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281070000<br>1406 W King St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138281110000<br>1430 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138282020000<br>1429 King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138282070000<br>138 Pico Ave<br>San Bernardino, CA 92405 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138283100000<br>1341 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283110000<br>1335 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283160000<br>190 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283170000<br>170 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283190000<br>160 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283230000<br>1350 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283240000<br>1354 W King<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283250000<br>1356 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283290000<br>1372 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283340000<br>1365 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283360000<br>198 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283370000<br>196 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138283380000<br>1377 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284120000<br>106 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138284130000<br>132 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138284140000<br>140 N Mt Vernon Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138284170000<br>1325 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284180000<br>1331 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284200000<br>1337 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284290000<br>106 N Mt. Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138284330000<br>1354 Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138284340000<br>1324 W Rialto Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138291140000<br>1272 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291150000<br>1278 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291160000<br>151 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291180000<br>155 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292010000<br>149 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292020000<br>1277 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292030000<br>1271 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292040000<br>1265 W King St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138292050000<br>1259 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292130000<br>1266 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292150000<br>1280 Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138292160000<br>101 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138292180000<br>121 Mt.Vernon<br>San Bernardino, CA | | | X |
| Occupant | APN 0138292200000<br>139 N Mt. Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293010000<br>1225 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293020000<br>1223 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138293040000<br>1207 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138293060000<br>1195 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293080000<br>1185 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293090000<br>1179 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138293130000<br>1186 King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293140000<br>1190 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293150000<br>1196 W King St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138293160000<br>1202 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293180000<br>1216 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293190000<br>1220 W King<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293200000<br>1226 W King St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138294010000<br>1225 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294020000<br>1219 King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294030000<br>1215 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294040000<br>1207 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294070000<br>1189 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294080000<br>1185 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294090000<br>1179 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294120000<br>1176 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138294130000<br>1180 W Rialto Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138294140000<br>1186 Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138294160000<br>1196 W Rialto Ave<br>San Bernardino, CA | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138294170000<br>1200 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294180000<br>1208 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138294190000<br>1214 Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294210000<br>1226 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294220000<br>1175 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138302030000<br>1155 W 2nd St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138302230000<br>1156 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138302240000<br>1164 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138302250000<br>1170 W King St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138302270000<br>1169 W 2nd St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138303010000<br>141 L St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138303020000<br>1163 King St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138303040000<br>1151 King St<br>San Bernardino, CA | | | X |
| Occupant | APN 0138303220000<br>1162 W Rialto Ave<br>San Bernardino, CA | | | X |
| Occupant | APN 0138303230000<br>1166 W Rialto Ave<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138303240000<br>1172 Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012180000<br>128 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012200000<br>148 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012220000<br>1330 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137012340000<br>172 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021020000<br>153 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021050000<br>129 S Mt Vernon Ave<br>San Bernardino, CA 92415 | | | X |
| Occupant | APN 0137021060000<br>123 S Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021120000<br>1253 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137021200000<br>1266 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022010000<br>133 S Giovanola Ave<br>San Bernardino, CA 92401 | | | X |
| Occupant | APN 0137022020000<br>129 S Giovanola Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022030000<br>121 S Giovanola Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022040000<br>1243 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022090000<br>1207 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0137022150000<br>1220 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022170000<br>1232 W Belleview St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137022190000<br>1227 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031090000<br>1169 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0137031100000<br>130 S L St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138041300000<br>636 N Pico Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042080000<br>1337 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042090000<br>1333 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042100000<br>1327 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042110000<br>1321 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042160000<br>674 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138042240000<br>1360 W Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043110000<br>1321 W Victoria St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043230000<br>1338 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138043240000<br>1348 W 6th St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138043250000<br>1358 W 6th St<br>San Bernardino, CA 92405 | | | X |
| Occupant | APN 0138043290000<br>1312 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051020000<br>1247 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138051040000<br>1233 W 7th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052020000<br>601 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052040000<br>1280 W 6th St<br>San Bernardino, CA 92404 | | | X |
| Occupant | APN 0138052070000<br>1256 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052110000<br>1238 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052120000<br>1228 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052130000<br>1220 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138052150000<br>1206 W 6th St<br>San Bernardino, CA 92409 | | | X |
| Occupant | APN 0138054230000<br>1152 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138054250000<br>1172 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138104260000<br>543 N Western Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112060000<br>1367 W 6th St<br>San Bernardino, CA 92408 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138112070000<br>1363 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112160000<br>1347 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138112190000<br>1389 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138113030000<br>1377 W Spruce St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138113100000<br>1374 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121030000<br>1263 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121050000<br>1249 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121090000<br>1219 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121100000<br>1211 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138121250000<br>APN 0138121300000<br>APN 0138121310000<br>565 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138122270000<br>1222 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138123010000<br>1195 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138123030000<br>1183 W 6th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124200000<br>1136 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124250000<br>1176 W 5th St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138124260000<br>1182 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138124310000<br>1108 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138173150000<br>1462 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138173360000<br>1486 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138174070000<br>1495 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181020000<br>1447 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181040000<br>1441 W 5th St<br>San Bernardino, CA 92404 | | | X |
| Occupant | APN 0138181060000<br>1423 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181120000<br>1373 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181130000<br>1371 W 5th St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138181180000<br>APN 0138181190000<br>APN 0138181460000<br>1305 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181230000<br>472 N Mt Vernon Ave<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181260000<br>1314 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181280000<br>1328 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181290000<br>1338 W Kingman St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138181320000<br>1368 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181340000<br>1388 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181370000<br>1414 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181400000<br>1440 W Kingman St<br>San Bernardino, CA 92411-2625 | | | X |
| Occupant | APN 0138181410000<br>1446 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138181420000<br>1450 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182020000<br>1447 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182040000<br>1431 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182090000<br>APN 0138182100000<br>1397 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182130000<br>1357 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182150000<br>1337 W Kingman St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182350000<br>1438 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138182360000<br>1442 W 4th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138192130000<br>1149 W 5th St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138192190000<br>1185 W 5th St<br>San Bernardino, CA 92411 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138192200000<br>1177 W 5th St<br>San Bernardino, CA 92408 | | | X |
| Occupant | APN 0138192220000<br>1155 W 5th St<br>San Bernardino, CA 92408 | | | X |
| Occupant | APN 0138251040000<br>248 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251100000<br>1324 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251190000<br>215 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251210000<br>220 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251230000<br>240 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138251240000<br>250 N Grape Ct<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281010000<br>1433 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281020000<br>1481 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281040000<br>1417 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281060000<br>190 N Pico Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281080000<br>1412 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281100000<br>1420 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138281120000<br>1434 W King St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138282010000<br>1435 W King St<br>San Bernardino, CA 92404 | | | X |
| Occupant | APN 0138282030000<br>1417 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283070000<br>1359 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283080000<br>1353 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283090000<br>1347 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283120000<br>1329 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283130000<br>1323 W 2nd St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283260000<br>1360 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283270000<br>1366 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138283280000<br>1370 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284150000<br>148 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284160000<br>1311 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284190000<br>1335 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284210000<br>APN 0138284220000<br>1353 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284230000<br>1365 W King St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138284240000<br>1371 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138284250000<br>1377 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291090000<br>1238 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291110000<br>1254 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291120000<br>1260 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138291130000<br>1270 W King St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138291170000<br>153 N Mt Vernon Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292060000<br>1253 W King St<br>San Bernardino, CA 92405 | | | X |
| Occupant | APN 0138292070000<br>1245 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292080000<br>1237 W King St<br>San Bernardino, CA 92411 | | | X |
| Occupant | APN 0138292090000<br>1238 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292100000<br>1246 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292110000<br>1254 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138292120000<br>1260 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138293110000<br>1176 W King St<br>San Bernardino, CA 92410 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Occupant | APN 0138293120000<br>1180 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294050000<br>1201 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294060000<br>1195 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294150000<br>1190 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138294200000<br>1216 W Rialto Ave<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138302210000<br>1146 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138302220000<br>1150 W King St<br>San Bernardino, CA 92410 | | | X |
| Occupant | APN 0138303030000<br>1155 W King St<br>San Bernardino, CA 92410 | | | X |
| Owner | APN 0137011060000 | | | X |
| Owner | APN 0137011290000 | | | X |
| Owner | APN 0137011300000 | | | X |
| Owner | APN 0137012010000 | | | X |
| Owner | APN 0137012050000 | | | X |
| Owner | APN 0137012060000 | | | X |
| Owner | APN 0137012070000 | | | X |
| Owner | APN 0137012080000 | | | X |
| Owner | APN 0137012090000 | | | X |
| Owner | APN 0137012140000 | | | X |
| Owner | APN 0137012150000 | | | X |
| Owner | APN 0137012160000 | | | X |
| Owner | APN 0137012170000 | | | X |
| Owner | APN 0137012180000 | | | X |
| Owner | APN 0137012190000 | | | X |
| Owner | APN 0137012200000 | | | X |
| Owner | APN 0137012210000 | | | X |
| Owner | APN 0137012220000 | | | X |
| Owner | APN 0137012230000 | | | X |
| Owner | APN 0137012240000 | | | X |
| Owner | APN 0137012250000 | | | X |
| Owner | APN 0137012260000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0137012290000 | | | X |
| Owner | APN 0137012300000 | | | X |
| Owner | APN 0137012310000 | | | X |
| Owner | APN 0137012320000 | | | X |
| Owner | APN 0137012330000 | | | X |
| Owner | APN 0137012340000 | | | X |
| Owner | APN 0137012350000 | | | X |
| Owner | APN 0137012470000 | | | X |
| Owner | APN 0137012480000 | | | X |
| Owner | APN 0137012530000 | | | X |
| Owner | APN 0137012540000 | | | X |
| Owner | APN 0137012560000 | | | X |
| Owner | APN 0137012570000 | | | X |
| Owner | APN 0137012580000 | | | X |
| Owner | APN 0137012590000 | | | X |
| Owner | APN 0137012600000 | | | X |
| Owner | APN 0137012610000 | | | X |
| Owner | APN 0137021010000 | | | X |
| Owner | APN 0137021020000 | | | X |
| Owner | APN 0137021050000 | | | X |
| Owner | APN 0137021060000 | | | X |
| Owner | APN 0137021070000 | | | X |
| Owner | APN 0137021080000 | | | X |
| Owner | APN 0137021090000 | | | X |
| Owner | APN 0137021100000 | | | X |
| Owner | APN 0137021110000 | | | X |
| Owner | APN 0137021120000 | | | X |
| Owner | APN 0137021130000 | | | X |
| Owner | APN 0137021160000 | | | X |
| Owner | APN 0137021170000 | | | X |
| Owner | APN 0137021180000 | | | X |
| Owner | APN 0137021190000 | | | X |
| Owner | APN 0137021200000 | | | X |
| Owner | APN 0137021210000 | | | X |
| Owner | APN 0137021220000 | | | X |
| Owner | APN 0137021240000 | | | X |
| Owner | APN 0137021250000 | | | X |
| Owner | APN 0137021260000 | | | X |
| Owner | APN 0137022010000 | | | X |
| Owner | APN 0137022020000 | | | X |
| Owner | APN 0137022030000 | | | X |
| Owner | APN 0137022040000 | | | X |
| Owner | APN 0137022050000 | | | X |
| Owner | APN 0137022080000 | | | X |
| Owner | APN 0137022090000 | | | X |
| Owner | APN 0137022100000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0137022110000 | | | X |
| Owner | APN 0137022120000 | | | X |
| Owner | APN 0137022150000 | | | X |
| Owner | APN 0137022160000 | | | X |
| Owner | APN 0137022170000 | | | X |
| Owner | APN 0137022180000 | | | X |
| Owner | APN 0137022190000 | | | X |
| Owner | APN 0137022210000 | | | X |
| Owner | APN 0137022220000 | | | X |
| Owner | APN 0137031010000 | | | X |
| Owner | APN 0137031020000 | | | X |
| Owner | APN 0137031030000 | | | X |
| Owner | APN 0137031060000 | | | X |
| Owner | APN 0137031070000 | | | X |
| Owner | APN 0137031080000 | | | X |
| Owner | APN 0137031090000 | | | X |
| Owner | APN 0137031100000 | | | X |
| Owner | APN 0137031190000 | | | X |
| Owner | APN 0137031200000 | | | X |
| Owner | APN 0137052420000 | | | X |
| Owner | APN 0137052430000 | | | X |
| Owner | APN 0137061070000 | | | X |
| Owner | APN 0137061080000 | | | X |
| Owner | APN 0137061090000 | | | X |
| Owner | APN 0137061100000 | | | X |
| Owner | APN 0137061110000 | | | X |
| Owner | APN 0138035080000 | | | X |
| Owner | APN 0138041080000 | | | X |
| Owner | APN 0138041090000 | | | X |
| Owner | APN 0138041100000 | | | X |
| Owner | APN 0138041140000 | | | X |
| Owner | APN 0138041150000 | | | X |
| Owner | APN 0138041160000 | | | X |
| Owner | APN 0138041170000 | | | X |
| Owner | APN 0138041190000 | | | X |
| Owner | APN 0138041230000 | | | X |
| Owner | APN 0138041240000 | | | X |
| Owner | APN 0138041250000 | | | X |
| Owner | APN 0138041260000 | | | X |
| Owner | APN 0138041300000 | | | X |
| Owner | APN 0138041310000 | | | X |
| Owner | APN 0138041360000 | | | X |
| Owner | APN 0138042010000 | | | X |
| Owner | APN 0138042050000 | | | X |
| Owner | APN 0138042060000 | | | X |
| Owner | APN 0138042070000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138042080000 | | | X |
| Owner | APN 0138042090000 | | | X |
| Owner | APN 0138042100000 | | | X |
| Owner | APN 0138042110000 | | | X |
| Owner | APN 0138042120000 | | | X |
| Owner | APN 0138042130000 | | | X |
| Owner | APN 0138042140000 | | | X |
| Owner | APN 0138042150000 | | | X |
| Owner | APN 0138042160000 | | | X |
| Owner | APN 0138042170000 | | | X |
| Owner | APN 0138042180000 | | | X |
| Owner | APN 0138042190000 | | | X |
| Owner | APN 0138042200000 | | | X |
| Owner | APN 0138042210000 | | | X |
| Owner | APN 0138042220000 | | | X |
| Owner | APN 0138042230000 | | | X |
| Owner | APN 0138042240000 | | | X |
| Owner | APN 0138042250000 | | | X |
| Owner | APN 0138042260000 | | | X |
| Owner | APN 0138042270000 | | | X |
| Owner | APN 0138043010000 | | | X |
| Owner | APN 0138043020000 | | | X |
| Owner | APN 0138043030000 | | | X |
| Owner | APN 0138043040000 | | | X |
| Owner | APN 0138043050000 | | | X |
| Owner | APN 0138043060000 | | | X |
| Owner | APN 0138043070000 | | | X |
| Owner | APN 0138043080000 | | | X |
| Owner | APN 0138043090000 | | | X |
| Owner | APN 0138043100000 | | | X |
| Owner | APN 0138043110000 | | | X |
| Owner | APN 0138043120000 | | | X |
| Owner | APN 0138043130000 | | | X |
| Owner | APN 0138043140000 | | | X |
| Owner | APN 0138043150000 | | | X |
| Owner | APN 0138043160000 | | | X |
| Owner | APN 0138043170000 | | | X |
| Owner | APN 0138043180000 | | | X |
| Owner | APN 0138043210000 | | | X |
| Owner | APN 0138043220000 | | | X |
| Owner | APN 0138043230000 | | | X |
| Owner | APN 0138043240000 | | | X |
| Owner | APN 0138043250000 | | | X |
| Owner | APN 0138043260000 | | | X |
| Owner | APN 0138043270000 | | | X |
| Owner | APN 0138043280000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138043290000 | | | X |
| Owner | APN 0138051010000 | | | X |
| Owner | APN 0138051020000 | | | X |
| Owner | APN 0138051030000 | | | X |
| Owner | APN 0138051040000 | | | X |
| Owner | APN 0138051050000 | | | X |
| Owner | APN 0138051090000 | | | X |
| Owner | APN 0138051100000 | | | X |
| Owner | APN 0138051110000 | | | X |
| Owner | APN 0138051140000 | | | X |
| Owner | APN 0138051150000 | | | X |
| Owner | APN 0138051160000 | | | X |
| Owner | APN 0138051170000 | | | X |
| Owner | APN 0138052020000 | | | X |
| Owner | APN 0138052030000 | | | X |
| Owner | APN 0138052040000 | | | X |
| Owner | APN 0138052050000 | | | X |
| Owner | APN 0138052060000 | | | X |
| Owner | APN 0138052070000 | | | X |
| Owner | APN 0138052080000 | | | X |
| Owner | APN 0138052090000 | | | X |
| Owner | APN 0138052100000 | | | X |
| Owner | APN 0138052110000 | | | X |
| Owner | APN 0138052120000 | | | X |
| Owner | APN 0138052130000 | | | X |
| Owner | APN 0138052140000 | | | X |
| Owner | APN 0138052150000 | | | X |
| Owner | APN 0138052160000 | | | X |
| Owner | APN 0138052170000 | | | X |
| Owner | APN 0138052180000 | | | X |
| Owner | APN 0138052190000 | | | X |
| Owner | APN 0138052220000 | | | X |
| Owner | APN 0138052230000 | | | X |
| Owner | APN 0138052240000 | | | X |
| Owner | APN 0138052250000 | | | X |
| Owner | APN 0138052260000 | | | X |
| Owner | APN 0138052290000 | | | X |
| Owner | APN 0138052300000 | | | X |
| Owner | APN 0138053010000 | | | X |
| Owner | APN 0138054010000 | | | X |
| Owner | APN 0138054020000 | | | X |
| Owner | APN 0138054030000 | | | X |
| Owner | APN 0138054040000 | | | X |
| Owner | APN 0138054050000 | | | X |
| Owner | APN 0138054060000 | | | X |
| Owner | APN 0138054220000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138054230000 | | | X |
| Owner | APN 0138054240000 | | | X |
| Owner | APN 0138054250000 | | | X |
| Owner | APN 0138054260000 | | | X |
| Owner | APN 0138054270000 | | | X |
| Owner | APN 0138104020000 | | | X |
| Owner | APN 0138104030000 | | | X |
| Owner | APN 0138104040000 | | | X |
| Owner | APN 0138104050000 | | | X |
| Owner | APN 0138104060000 | | | X |
| Owner | APN 0138104070000 | | | X |
| Owner | APN 0138104080000 | | | X |
| Owner | APN 0138104090000 | | | X |
| Owner | APN 0138104100000 | | | X |
| Owner | APN 0138104110000 | | | X |
| Owner | APN 0138104120000 | | | X |
| Owner | APN 0138104130000 | | | X |
| Owner | APN 0138104140000 | | | X |
| Owner | APN 0138104150000 | | | X |
| Owner | APN 0138104160000 | | | X |
| Owner | APN 0138104170000 | | | X |
| Owner | APN 0138104180000 | | | X |
| Owner | APN 0138104190000 | | | X |
| Owner | APN 0138104200000 | | | X |
| Owner | APN 0138104210000 | | | X |
| Owner | APN 0138104240000 | | | X |
| Owner | APN 0138104250000 | | | X |
| Owner | APN 0138104260000 | | | X |
| Owner | APN 0138104270000 | | | X |
| Owner | APN 0138104280000 | | | X |
| Owner | APN 0138104290000 | | | X |
| Owner | APN 0138111020000 | | | X |
| Owner | APN 0138111050000 | | | X |
| Owner | APN 0138111090000 | | | X |
| Owner | APN 0138111300000 | | | X |
| Owner | APN 0138111310000 | | | X |
| Owner | APN 0138111340000 | | | X |
| Owner | APN 0138111350000 | | | X |
| Owner | APN 0138111360000 | | | X |
| Owner | APN 0138111370000 | | | X |
| Owner | APN 0138111380000 | | | X |
| Owner | APN 0138111390000 | | | X |
| Owner | APN 0138111440000 | | | X |
| Owner | APN 0138111450000 | | | X |
| Owner | APN 0138111470000 | | | X |
| Owner | APN 0138111480000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138111500000 | | | X |
| Owner | APN 0138111510000 | | | X |
| Owner | APN 0138112040000 | | | X |
| Owner | APN 0138112050000 | | | X |
| Owner | APN 0138112060000 | | | X |
| Owner | APN 0138112070000 | | | X |
| Owner | APN 0138112090000 | | | X |
| Owner | APN 0138112100000 | | | X |
| Owner | APN 0138112110000 | | | X |
| Owner | APN 0138112120000 | | | X |
| Owner | APN 0138112130000 | | | X |
| Owner | APN 0138112140000 | | | X |
| Owner | APN 0138112150000 | | | X |
| Owner | APN 0138112160000 | | | X |
| Owner | APN 0138112170000 | | | X |
| Owner | APN 0138112190000 | | | X |
| Owner | APN 0138113020000 | | | X |
| Owner | APN 013811303000 | | | X |
| Owner | APN 0138113040000 | | | X |
| Owner | APN 0138113050000 | | | X |
| Owner | APN 0138113060000 | | | X |
| Owner | APN 0138113070000 | | | X |
| Owner | APN 0138113080000 | | | X |
| Owner | APN 0138113090000 | | | X |
| Owner | APN 0138113100000 | | | X |
| Owner | APN 0138113110000 | | | X |
| Owner | APN 0138114030000 | | | X |
| Owner | APN 0138114060000 | | | X |
| Owner | APN 0138114090000 | | | X |
| Owner | APN 0138114100000 | | | X |
| Owner | APN 0138114110000 | | | X |
| Owner | APN 0138114150000 | | | X |
| Owner | APN 0138114160000 | | | X |
| Owner | APN 0138114170000 | | | X |
| Owner | APN 0138114180000 | | | X |
| Owner | APN 0138114190000 | | | X |
| Owner | APN 0138114200000 | | | X |
| Owner | APN 0138115010000 | | | X |
| Owner | APN 0138115100000 | | | X |
| Owner | APN 0138115110000 | | | X |
| Owner | APN 0138115120000 | | | X |
| Owner | APN 0138115120000 | | | X |
| Owner | APN 0138115130000 | | | X |
| Owner | APN 0138121010000 | | | X |
| Owner | APN 0138121020000 | | | X |
| Owner | APN 0138121030000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138121040000 | | | X |
| Owner | APN 0138121050000 | | | X |
| Owner | APN 0138121060000 | | | X |
| Owner | APN 0138121070000 | | | X |
| Owner | APN 0138121080000 | | | X |
| Owner | APN 0138121090000 | | | X |
| Owner | APN 0138121100000 | | | X |
| Owner | APN 0138121110000 | | | X |
| Owner | APN 0138121120000 | | | X |
| Owner | APN 0138121130000 | | | X |
| Owner | APN 0138121140000 | | | X |
| Owner | APN 0138121150000 | | | X |
| Owner | APN 0138121160000 | | | X |
| Owner | APN 0138121170000 | | | X |
| Owner | APN 0138121180000 | | | X |
| Owner | APN 0138121190000 | | | X |
| Owner | APN 0138121200000 | | | X |
| Owner | APN 0138121210000 | | | X |
| Owner | APN 0138121220000 | | | X |
| Owner | APN 0138121250000 | | | X |
| Owner | APN 0138121280000 | | | X |
| Owner | APN 0138121290000 | | | X |
| Owner | APN 0138121300000 | | | X |
| Owner | APN 0138121310000 | | | X |
| Owner | APN 0138122160000 | | | X |
| Owner | APN 0138122170000 | | | X |
| Owner | APN 0138122180000 | | | X |
| Owner | APN 0138122190000 | | | X |
| Owner | APN 0138122200000 | | | X |
| Owner | APN 0138122210000 | | | X |
| Owner | APN 0138122220000 | | | X |
| Owner | APN 0138122230000 | | | X |
| Owner | APN 0138122240000 | | | X |
| Owner | APN 0138122260000 | | | X |
| Owner | APN 0138122270000 | | | X |
| Owner | APN 0138122280000 | | | X |
| Owner | APN 0138122290000 | | | X |
| Owner | APN 0138122300000 | | | X |
| Owner | APN 0138122310000 | | | X |
| Owner | APN 0138122320000 | | | X |
| Owner | APN 0138122330000 | | | X |
| Owner | APN 0138123010000 | | | X |
| Owner | APN 0138123020000 | | | X |
| Owner | APN 0138123030000 | | | X |
| Owner | APN 0138123040000 | | | X |
| Owner | APN 0138123050000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138123060000 | | | X |
| Owner | APN 0138123160000 | | | X |
| Owner | APN 0138123170000 | | | X |
| Owner | APN 0138123180000 | | | X |
| Owner | APN 0138123190000 | | | X |
| Owner | APN 0138123200000 | | | X |
| Owner | APN 0138123210000 | | | X |
| Owner | APN 0138123220000 | | | X |
| Owner | APN 0138123250000 | | | X |
| Owner | APN 0138123260000 | | | X |
| Owner | APN 0138123270000 | | | X |
| Owner | APN 0138123280000 | | | X |
| Owner | APN 0138123290000 | | | X |
| Owner | APN 0138124010000 | | | X |
| Owner | APN 0138124020000 | | | X |
| Owner | APN 0138124030000 | | | X |
| Owner | APN 0138124040000 | | | X |
| Owner | APN 0138124050000 | | | X |
| Owner | APN 0138124060000 | | | X |
| Owner | APN 0138124070000 | | | X |
| Owner | APN 0138124080000 | | | X |
| Owner | APN 0138124100000 | | | X |
| Owner | APN 0138124110000 | | | X |
| Owner | APN 0138124120000 | | | X |
| Owner | APN 0138124130000 | | | X |
| Owner | APN 0138124180000 | | | X |
| Owner | APN 0138124190000 | | | X |
| Owner | APN 0138124200000 | | | X |
| Owner | APN 0138124210000 | | | X |
| Owner | APN 0138124220000 | | | X |
| Owner | APN 0138124230000 | | | X |
| Owner | APN 0138124240000 | | | X |
| Owner | APN 0138124250000 | | | X |
| Owner | APN 0138124260000 | | | X |
| Owner | APN 0138124270000 | | | X |
| Owner | APN 0138124280000 | | | X |
| Owner | APN 0138124300000 | | | X |
| Owner | APN 0138124310000 | | | X |
| Owner | APN 0138173080000 | | | X |
| Owner | APN 0138173090000 | | | X |
| Owner | APN 0138173100000 | | | X |
| Owner | APN 0138173110000 | | | X |
| Owner | APN 0138173120000 | | | X |
| Owner | APN 0138173130000 | | | X |
| Owner | APN 0138173140000 | | | X |
| Owner | APN 0138173150000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138173160000 | | | X |
| Owner | APN 0138173170000 | | | X |
| Owner | APN 0138173300000 | | | X |
| Owner | APN 0138173360000 | | | X |
| Owner | APN 0138174070000 | | | X |
| Owner | APN 0138174080000 | | | X |
| Owner | APN 0138174110000 | | | X |
| Owner | APN 0138174120000 | | | X |
| Owner | APN 0138174130000 | | | X |
| Owner | APN 0138174140000 | | | X |
| Owner | APN 0138174150000 | | | X |
| Owner | APN 0138174260000 | | | X |
| Owner | APN 0138181010000 | | | X |
| Owner | APN 0138181020000 | | | X |
| Owner | APN 0138181030000 | | | X |
| Owner | APN 0138181040000 | | | X |
| Owner | APN 0138181050000 | | | X |
| Owner | APN 0138181060000 | | | X |
| Owner | APN 0138181070000 | | | X |
| Owner | APN 0138181080000 | | | X |
| Owner | APN 0138181090000 | | | X |
| Owner | APN 0138181100000 | | | X |
| Owner | APN 0138181110000 | | | X |
| Owner | APN 0138181120000 | | | X |
| Owner | APN 0138181130000 | | | X |
| Owner | APN 0138181140000 | | | X |
| Owner | APN 0138181150000 | | | X |
| Owner | APN 0138181160000 | | | X |
| Owner | APN 0138181170000 | | | X |
| Owner | APN 0138181180000 | | | X |
| Owner | APN 0138181190000 | | | X |
| Owner | APN 0138181220000 | | | X |
| Owner | APN 0138181230000 | | | X |
| Owner | APN 0138181240000 | | | X |
| Owner | APN 0138181250000 | | | X |
| Owner | APN 0138181260000 | | | X |
| Owner | APN 0138181270000 | | | X |
| Owner | APN 0138181280000 | | | X |
| Owner | APN 0138181290000 | | | X |
| Owner | APN 0138181300000 | | | X |
| Owner | APN 0138181310000 | | | X |
| Owner | APN 0138181320000 | | | X |
| Owner | APN 0138181340000 | | | X |
| Owner | APN 0138181350000 | | | X |
| Owner | APN 0138181360000 | | | X |
| Owner | APN 0138181370000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138181380000 | | | X |
| Owner | APN 0138181390000 | | | X |
| Owner | APN 0138181400000 | | | X |
| Owner | APN 0138181410000 | | | X |
| Owner | APN 0138181420000 | | | X |
| Owner | APN 0138181430000 | | | X |
| Owner | APN 0138181440000 | | | X |
| Owner | APN 0138181450000 | | | X |
| Owner | APN 0138181460000 | | | X |
| Owner | APN 0138182010000 | | | X |
| Owner | APN 0138182020000 | | | X |
| Owner | APN 0138182030000 | | | X |
| Owner | APN 0138182040000 | | | X |
| Owner | APN 0138182050000 | | | X |
| Owner | APN 0138182070000 | | | X |
| Owner | APN 0138182080000 | | | X |
| Owner | APN 0138182090000 | | | X |
| Owner | APN 0138182100000 | | | X |
| Owner | APN 0138182110000 | | | X |
| Owner | APN 0138182120000 | | | X |
| Owner | APN 0138182130000 | | | X |
| Owner | APN 0138182140000 | | | X |
| Owner | APN 0138182150000 | | | X |
| Owner | APN 0138182160000 | | | X |
| Owner | APN 0138182170000 | | | X |
| Owner | APN 0138182180000 | | | X |
| Owner | APN 0138182190000 | | | X |
| Owner | APN 0138182200000 | | | X |
| Owner | APN 0138182210000 | | | X |
| Owner | APN 0138182220000 | | | X |
| Owner | APN 0138182240000 | | | X |
| Owner | APN 0138182250000 | | | X |
| Owner | APN 0138182260000 | | | X |
| Owner | APN 0138182270000 | | | X |
| Owner | APN 0138182280000 | | | X |
| Owner | APN 0138182290000 | | | X |
| Owner | APN 0138182320000 | | | X |
| Owner | APN 0138182330000 | | | X |
| Owner | APN 0138182340000 | | | X |
| Owner | APN 0138182350000 | | | X |
| Owner | APN 0138182360000 | | | X |
| Owner | APN 0138182370000 | | | X |
| Owner | APN 0138182380000 | | | X |
| Owner | APN 0138182390000 | | | X |
| Owner | APN 0138182400000 | | | X |
| Owner | APN 0138182410000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138182420000 | | | X |
| Owner | APN 0138191010000 | | | X |
| Owner | APN 0138191020000 | | | X |
| Owner | APN 0138191030000 | | | X |
| Owner | APN 0138191040000 | | | X |
| Owner | APN 0138191050000 | | | X |
| Owner | APN 0138191060000 | | | X |
| Owner | APN 0138191070000 | | | X |
| Owner | APN 0138191160000 | | | X |
| Owner | APN 0138191190000 | | | X |
| Owner | APN 0138191200000 | | | X |
| Owner | APN 0138191210000 | | | X |
| Owner | APN 0138191220000 | | | X |
| Owner | APN 0138191230000 | | | X |
| Owner | APN 0138192010000 | | | X |
| Owner | APN 0138192020000 | | | X |
| Owner | APN 0138192090000 | | | X |
| Owner | APN 0138192100000 | | | X |
| Owner | APN 0138192130000 | | | X |
| Owner | APN 0138192140000 | | | X |
| Owner | APN 0138192150000 | | | X |
| Owner | APN 0138192160000 | | | X |
| Owner | APN 0138192170000 | | | X |
| Owner | APN 0138192190000 | | | X |
| Owner | APN 0138192200000 | | | X |
| Owner | APN 0138192210000 | | | X |
| Owner | APN 0138192220000 | | | X |
| Owner | APN 0138211010000 | | | X |
| Owner | APN 0138211020000 | | | X |
| Owner | APN 0138221050000 | | | X |
| Owner | APN 0138241130000 | | | X |
| Owner | APN 0138241140000 | | | X |
| Owner | APN 0138241230000 | | | X |
| Owner | APN 0138241250000 | | | X |
| Owner | APN 0138251010000 | | | X |
| Owner | APN 0138251020000 | | | X |
| Owner | APN 0138251030000 | | | X |
| Owner | APN 0138251040000 | | | X |
| Owner | APN 0138251050000 | | | X |
| Owner | APN 0138251060000 | | | X |
| Owner | APN 0138251070000 | | | X |
| Owner | APN 0138251080000 | | | X |
| Owner | APN 0138251090000 | | | X |
| Owner | APN 0138251100000 | | | X |
| Owner | APN 0138251130000 | | | X |
| Owner | APN 0138251170000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138251190000 | | | X |
| Owner | APN 0138251200000 | | | X |
| Owner | APN 0138251210000 | | | X |
| Owner | APN 0138251220000 | | | X |
| Owner | APN 0138251230000 | | | X |
| Owner | APN 0138251240000 | | | X |
| Owner | APN 0138251250000 | | | X |
| Owner | APN 0138261020000 | | | X |
| Owner | APN 0138261040000 | | | X |
| Owner | APN 0138262030000 | | | X |
| Owner | APN 0138263030000 | | | X |
| Owner | APN 0138281010000 | | | X |
| Owner | APN 0138281020000 | | | X |
| Owner | APN 0138281030000 | | | X |
| Owner | APN 0138281040000 | | | X |
| Owner | APN 0138281050000 | | | X |
| Owner | APN 0138281060000 | | | X |
| Owner | APN 0138281070000 | | | X |
| Owner | APN 0138281080000 | | | X |
| Owner | APN 0138281090000 | | | X |
| Owner | APN 0138281100000 | | | X |
| Owner | APN 0138281110000 | | | X |
| Owner | APN 0138281120000 | | | X |
| Owner | APN 0138282010000 | | | X |
| Owner | APN 0138282020000 | | | X |
| Owner | APN 0138282030000 | | | X |
| Owner | APN 0138282070000 | | | X |
| Owner | APN 0138282080000 | | | X |
| Owner | APN 0138282080000 | | | X |
| Owner | APN 0138283010000 | | | X |
| Owner | APN 0138283020000 | | | X |
| Owner | APN 0138283070000 | | | X |
| Owner | APN 0138283080000 | | | X |
| Owner | APN 0138283090000 | | | X |
| Owner | APN 0138283110000 | | | X |
| Owner | APN 0138283120000 | | | X |
| Owner | APN 0138283130000 | | | X |
| Owner | APN 0138283160000 | | | X |
| Owner | APN 0138283170000 | | | X |
| Owner | APN 0138283180000 | | | X |
| Owner | APN 0138283190000 | | | X |
| Owner | APN 0138283230000 | | | X |
| Owner | APN 0138283240000 | | | X |
| Owner | APN 0138283250000 | | | X |
| Owner | APN 0138283260000 | | | X |
| Owner | APN 0138283270000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138283280000 | | | X |
| Owner | APN 0138283290000 | | | X |
| Owner | APN 0138283310000 | | | X |
| Owner | APN 0138283340000 | | | X |
| Owner | APN 0138283360000 | | | X |
| Owner | APN 0138283370000 | | | X |
| Owner | APN 0138283380000 | | | X |
| Owner | APN 0138283390000 | | | X |
| Owner | APN 0138284010000 | | | X |
| Owner | APN 0138284020000 | | | X |
| Owner | APN 0138284030000 | | | X |
| Owner | APN 0138284120000 | | | X |
| Owner | APN 0138284130000 | | | X |
| Owner | APN 0138284140000 | | | X |
| Owner | APN 0138284150000 | | | X |
| Owner | APN 0138284160000 | | | X |
| Owner | APN 0138284170000 | | | X |
| Owner | APN 0138284180000 | | | X |
| Owner | APN 0138284190000 | | | X |
| Owner | APN 0138284200000 | | | X |
| Owner | APN 0138284210000 | | | X |
| Owner | APN 0138284220000 | | | X |
| Owner | APN 0138284230000 | | | X |
| Owner | APN 0138284240000 | | | X |
| Owner | APN 0138284250000 | | | X |
| Owner | APN 0138284260000 | | | X |
| Owner | APN 0138284290000 | | | X |
| Owner | APN 0138284330000 | | | X |
| Owner | APN 0138284340000 | | | X |
| Owner | APN 0138284350000 | | | X |
| Owner | APN 0138291010000 | | | X |
| Owner | APN 0138291020000 | | | X |
| Owner | APN 0138291030000 | | | X |
| Owner | APN 0138291040000 | | | X |
| Owner | APN 0138291050000 | | | X |
| Owner | APN 0138291090000 | | | X |
| Owner | APN 0138291100000 | | | X |
| Owner | APN 0138291110000 | | | X |
| Owner | APN 0138291120000 | | | X |
| Owner | APN 0138291130000 | | | X |
| Owner | APN 0138291140000 | | | X |
| Owner | APN 0138291150000 | | | X |
| Owner | APN 0138291160000 | | | X |
| Owner | APN 0138291170000 | | | X |
| Owner | APN 0138291180000 | | | X |
| Owner | APN 0138291190000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138292010000 | | | X |
| Owner | APN 0138292020000 | | | X |
| Owner | APN 0138292030000 | | | X |
| Owner | APN 0138292040000 | | | X |
| Owner | APN 0138292050000 | | | X |
| Owner | APN 0138292060000 | | | X |
| Owner | APN 0138292070000 | | | X |
| Owner | APN 0138292080000 | | | X |
| Owner | APN 0138292090000 | | | X |
| Owner | APN 0138292100000 | | | X |
| Owner | APN 0138292110000 | | | X |
| Owner | APN 0138292120000 | | | X |
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| Owner | APN 0138292140000 | | | X |
| Owner | APN 0138292150000 | | | X |
| Owner | APN 0138292160000 | | | X |
| Owner | APN 0138292170000 | | | X |
| Owner | APN 0138292180000 | | | X |
| Owner | APN 0138292190000 | | | X |
| Owner | APN 0138292200000 | | | X |
| Owner | APN 0138293010000 | | | X |
| Owner | APN 0138293020000 | | | X |
| Owner | APN 0138293030000 | | | X |
| Owner | APN 0138293040000 | | | X |
| Owner | APN 0138293050000 | | | X |
| Owner | APN 0138293060000 | | | X |
| Owner | APN 0138293070000 | | | X |
| Owner | APN 0138293080000 | | | X |
| Owner | APN 0138293090000 | | | X |
| Owner | APN 0138293100000 | | | X |
| Owner | APN 0138293110000 | | | X |
| Owner | APN 0138293120000 | | | X |
| Owner | APN 0138293130000 | | | X |
| Owner | APN 0138293140000 | | | X |
| Owner | APN 0138293150000 | | | X |
| Owner | APN 0138293160000 | | | X |
| Owner | APN 0138293170000 | | | X |
| Owner | APN 0138293180000 | | | X |
| Owner | APN 0138293190000 | | | X |
| Owner | APN 0138293200000 | | | X |
| Owner | APN 0138294010000 | | | X |
| Owner | APN 0138294020000 | | | X |
| Owner | APN 0138294030000 | | | X |
| Owner | APN 0138294040000 | | | X |
| Owner | APN 0138294050000 | | | X |
| Owner | APN 0138294060000 | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Owner | APN 0138294070000 | | | X |
| Owner | APN 0138294080000 | | | X |
| Owner | APN 0138294090000 | | | X |
| Owner | APN 0138294120000 | | | X |
| Owner | APN 0138294130000 | | | X |
| Owner | APN 0138294140000 | | | X |
| Owner | APN 0138294150000 | | | X |
| Owner | APN 0138294160000 | | | X |
| Owner | APN 0138294170000 | | | X |
| Owner | APN 0138294180000 | | | X |
| Owner | APN 0138294190000 | | | X |
| Owner | APN 0138294200000 | | | X |
| Owner | APN 0138294210000 | | | X |
| Owner | APN 0138294220000 | | | X |
| Owner | APN 0138302030000 | | | X |
| Owner | APN 0138302210000 | | | X |
| Owner | APN 0138302220000 | | | X |
| Owner | APN 0138302230000 | | | X |
| Owner | APN 0138302240000 | | | X |
| Owner | APN 0138302250000 | | | X |
| Owner | APN 0138302260000 | | | X |
| Owner | APN 0138302270000 | | | X |
| Owner | APN 0138303010000 | | | X |
| Owner | APN 0138303020000 | | | X |
| Owner | APN 0138303030000 | | | X |
| Owner | APN 0138303040000 | | | X |
| Owner | APN 0138303220000 | | | X |
| Owner | APN 0138303230000 | | | X |
| Owner | APN 0138303240000 | | | X |
| **Other/Interested Individuals** | | | | |
| Rosemary Acosta | | | | X |
| Dipak Doshi | | | | X |
| Moises Garcia | | | | X |
| Wendell Jones | | | | X |
| Robert McBay | | | | X |
| Marqueda Lydia | | | | X |
| Dolores Razo | | | | X |
| Jess Vasquez | | | | X |
| Louise Morana | | | | X |
| Donna Rangel | | | | X |
| Jan Musquez | | | | X |
| George Flores | | | | X |
| Gloria Moyeda | | | | X |
| Ruth Ruiz | | | | X |
| James Funk | | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Wilbur Wilson | | | | X |
| Alfredo Encino | | | | X |
| Teresa Flores-Lopez | | | | X |
| Juan Lopez | | | | X |
| Victoria Casim | | | | X |
| Richard Villa | | | | X |
| Janena Alcantar | | | | X |
| Consuelo Lopez | | | | X |
| Marilyn Alcantar | | | | X |
| Esther Estrada | | | | X |
| Alicia Colburn | | | | X |
| Dolores Caldera | | | | X |
| Jimmy Mar | | | | X |
| Fermin Preciar | | | | X |
| Carmen Quiroga | | | | X |
| Teresa Enciso | | | | X |
| Edward and Nate Cardenass | | | | X |
| Martha Lemos | | | | X |
| Lila Flores | | | | X |
| Margaret Estrada | | | | X |
| Palo Smaf | | | | X |
| Jose L.K. Fonseca | | | | X |
| Carl Clemons | | | | X |
| Ruth E. Tovak | | | | X |
| Mayra Lopez | | | | X |
| Rafaela Preciado | | | | X |
| Carmen Lopez | | | | X |
| Mary Lopez | | | | X |
| Nick Gonzalez | | | | X |
| Rohan Kuruppu | | | | X |
| Charlie Gabriel | | | | X |
| Randy Wyatt | | | | X |
| Victoria Baker | | | | X |
| Celia Sandoval | | | | X |
| Dina Arneda | | | | X |
| Mark Hitchcock | | | | X |
| North West Pac Hampton | | | | X |
| Gina Tenorio | | | | X |
| Emma Torres | | | | X |
| A.T. Saavedra | | | | X |
| Frank and Vela Stallworth | | | | X |
| Jess and Betty Vasquez | | | | X |

| Name | Address | Received one or more of the following: | | |
|---|---|---|---|---|
| | | Document | CD | Notice |
| Lisa Martin | | | | X |
| Mike Burrows | | | | X |
| Gabriel Perez | | | | X |
| Esther Perez | | | | X |
| Amy Flores | | | | X |

# **Appendix A.** Programmatic Section 4(f) Evaluation

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# *Programmatic Section 4(f) Evaluation*

**Submitted Pursuant to:**
**49 U.S.C. 303**

## MOUNT VERNON AVENUE BRIDGE PROJECT

**Bridge No. 54C-0066**

**City of San Bernardino, California**

**08-SBd-0-Local Assistance**

***City of San Bernardino***

***California Department of Transportation, District 8***

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.

September 2010

For individuals with sensory disabilities, this document is available large print or computer disk. To obtain a copy in one of these alternate formats, please call or write the City of San Bernardino, Attn: Robert Eisenbeisz, Department Director/City Engineer Department of Engineering City of San Bernardino, 300 North "D" Street San Bernardino, CA 92418-0001 (909) 384-5111 Voice, or use the California Relay Service TTY number, (909) 383-6300.

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# 1 INTRODUCTION

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303 (including 23 USC 138, and 23 CFR 774) 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 is also needed.

# 2 DESCRIPTION OF PROPOSED PROJECT AND ALTERNATIVES

## 2-1 PROJECT PURPOSE AND NEED

### 2-1.2 Project Purpose

Replacement of the Mount Vernon Avenue Bridge is needed because the current facility exhibits structural and functional deficiencies. The purpose of the proposed project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards. This would

entail construction of a bridge with standard geometry to correct the current misalignment of the south approach, standard vertical clearance at West 3rd Street, and standard vertical and horizontal clearances at the BNSF yard. By implementing the project as expeditiously as possible under the circumstances, the City desires to restore a vitally important connector linking communities north and south of the BNSF railroad. The new bridge will be consistent with current rail and mass transit operations and facility needs.

### 2-1.3 Project Need

Replacement of the Mount Vernon Avenue Bridge is needed because the current facility exhibits the structural and functional deficiencies discussed in the following sections.

#### a. Seismically Deficient

The existing bridge was constructed in 1934 and incorporated steel girders salvaged from an earlier 1907 structure. As part of the Local Bridge Seismic Safety Retrofit Program, a seismic analysis and retrofit study were conducted in 1996. The Final Seismic Retrofit Strategy Report, issued in June 1997, determined that the bridge fell under Category 1, a category for bridges that could potentially collapse in a seismic event and threaten public safety.

#### b. Sufficiency Rating (SR)

Caltrans maintains the *National Bridge Inventory—Structure Inventory and Appraisal* for bridges both on and off the federal highway system in the state. The inventory includes an SR for each bridge. The SR is typically determined by three considerations: (1) structural adequacy and safety; (2) serviceability and functional obsolescence; and (3) essentiality for public use. A special reduction factor is considered to account for conditions related to detours, traffic safety features, and structure type. When a bridge has a deficient SR, it is placed on the federal EBL to receive high priority for retrofit/rehabilitation or replacement under the Highway Bridge Replacement and Rehabilitation (HBRR) Program. A *deficient* bridge is defined as having an SR $\leq$ 80 and a status flag as SD. Bridges with an SR $\leq$ 80 and SD or FO status are eligible for rehabilitation, while bridges with SR $\leq$ 50 and SD or FO status are eligible candidates for replacement. In 2002, the SR for the Mount Vernon Avenue Bridge was 45.6 with flags for both SD and FO. The major bridge deficiencies in 2002 were identified as poor deck condition, nonstandard deck geometry, and nonstandard underclearance at West 3rd Street. With the results of the recent 2004 bridge inspections, the SR for the Mount Vernon Avenue Bridge has dropped to 2.0. The very low SR for the bridge is the result of the following factors: low superstructure

capacity, poor substructure condition, serious deck condition, inadequate deck geometry, and substandard vertical clearance at West 3rd Street. Additionally, the capacity of the existing bridge railing does not meet current standards.

### c. Structurally Deficient (SD)

The existing bridge has been found to be SD because the deck is in poor condition with moderate and severe transverse cracks at various locations.

### d. Functionally Obsolete (FO)

The existing bridge is considered to be FO because of the nonstandard deck geometry, misaligned south approach, and nonstandard vertical clearance at West 3rd Street.

### e. Other Deficiencies

In addition to the previously described deficiencies, other serious conditions exist. The bridge was last painted in 1954. The paint condition index (PCI) dropped from 74.5 in 2000 to 67.6 in 2002. It was expected to fall even farther to less than 65.0 in 2006. Bridges on the EBL with a PCI of 65.0 or less qualify as a stand-alone painting project under HBRR guidelines. Finally, as explained in more detail in the following sections, the existing bridge has nonstandard vertical and horizontal clearances at the BNSF railroad yard.

### f. Project Costs

For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

For the Locally Preferred/Replacement Alternative (Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

## 2-2 PROJECT DESCRIPTION/ALTERNATIVES

The City, in association with the Department, proposes to replace the Mount Vernon Avenue Bridge (State Bridge No. 54C-0066) over the BNSF railroad facilities in the City of San Bernardino, County of San Bernardino, State of California. The existing Mount Vernon Avenue Bridge follows a generally north-south alignment along Mount Vernon Avenue and carries both vehicular and pedestrian traffic. The bridge is approximately 309.7 m (1,016 feet) long and 14.9 m (49 feet) wide with four 3.1 m (10 feet) traffic lanes (two in each direction) and no median or shoulders. The purpose of the proposed project is to provide a bridge that is structurally safe and meets current seismic, design, and roadway standards.

The alternatives are Alternative 1, No Build; Alternative 2, Retrofit/Rehabilitation Alternative; and Alternative 3, Locally Preferred/Replacement Alternative.

### 2-2.1 Common Design Features of the Build Alternatives

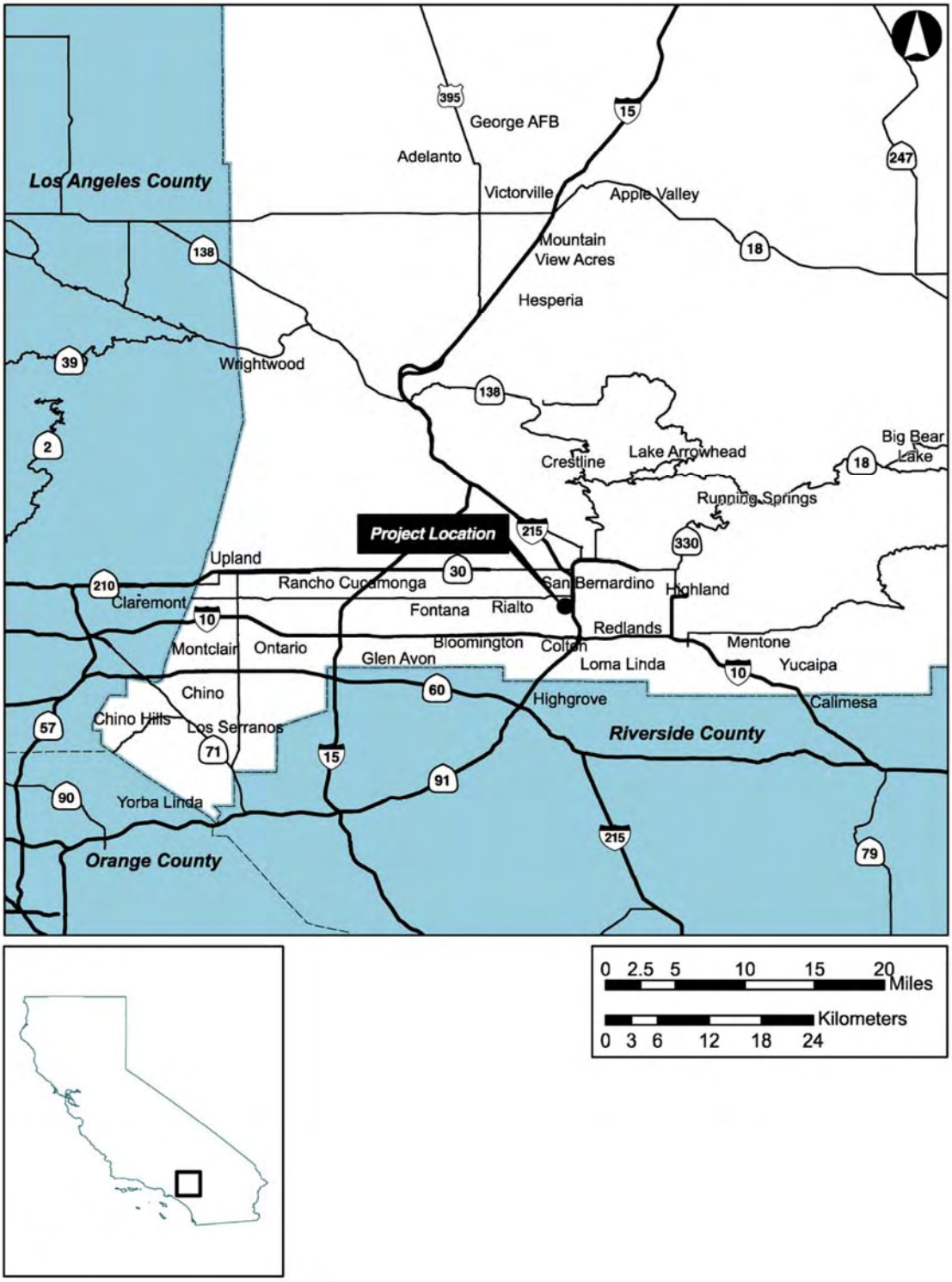
Both Build Alternatives would reconstruct the intersection at the north and south ends of the bridge. The existing alignment of the bridge would be retained. Because of the widening to the west, the service roadway located along the east side of the homes at the southwest end of the bridge would be closed. Subsequently, the alleyway located behind the homes at the southwest end of the bridge would be widened under both Build Alternatives.

### 2-2.2 Unique Features of the Build Alternatives

#### a. Retrofit/Rehabilitation Alternative (Alternative 2)

The Retrofit/Rehabilitation Alternative would seismically retrofit, rehabilitate, and widen the existing bridge to improve its structural safety and functionality. As part of this alternative, new footings would be excavated and new piles drilled. Widening and retrofitting the existing structure would involve improvements to the substructure to meet seismic standards. Anticipated additional work would include complete deck replacement, girder strengthening, removal of lead paint, repainting, installation of new railings and roadway lighting, replacement or retrofit/rehabilitation of expansion joints, and the addition of crash walls around the bridge piers. The existing roadway configuration and sidewalks would be improved to provide a 21.9-m (72-foot)-wide bridge with two 3.7-m (12-foot) lanes in each direction, a 1.2- m (4-foot) median, 1.2-m (4-foot) shoulders, and 1.5-m (5-foot) sidewalks. The sidewalks on the bridge would not meet American Disabilities Act (ADA) slope requirements following the

## Figure 1 – Regional Location




Source: County of San Bernardino GIS (2010).

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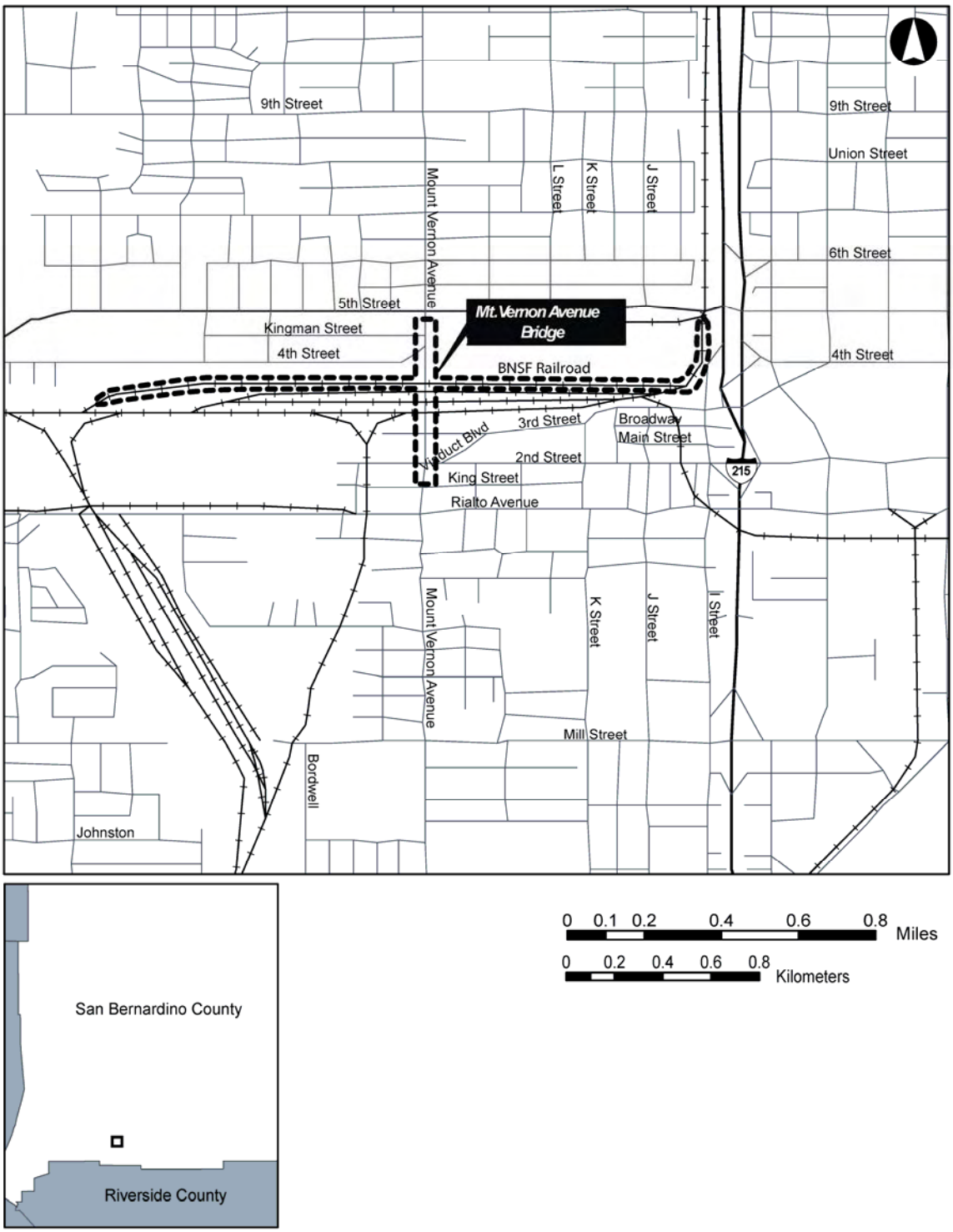
## Figure 2 – Project Vicinity




Source: County of San Bernardino GIS (2010).

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retrofit/rehabilitation. The modifications associated with this alternative would change the overall visual appearance of the bridge as a result of the materials that would be added to the bridge to bring it into compliance with current seismic standards. These modifications would likely result in an adverse impact on those features that make the bridge eligible for listing on the National Register of Historic Places (NRHP).

Since this alternative would not address the nonstandard vertical and horizontal clearances associated with the bridge, BNSF would likely oppose this alternative. In addition, this alternative would not replace all of the existing girders that have been determined to have neared their life span. The service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

The proposed improvements would also reconstruct the intersection at the north and south ends of the bridge. The existing alignment of the bridge would be retained under this alternative. Because of the widening to the west, the service roadway along the east side of the homes located at the southwest end of the bridge would be closed similar to Alternative 3. Subsequently, the alleyway located behind the homes at the southwest end of the bridge would be widened similar to Alternative 3. The project schedule would consist of the following milestones:

| ***Milestones*** | ***Date*** |
|---|---|
| Environmental Document Approved | late 2010 |
| Start of Construction | mid 2012 |
| End of Construction | mid 2014 |

The project is funded through the Federal Highway Bridge Replacement and Rehabilitation (HBRR) Program, seismic retrofit account, and Local City funds.

For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

### b. Locally Preferred/Replacement Alternative (Alternative 3)

The Locally Preferred/Replacement Alternative would involve removal of the existing bridge structure, construction of a new replacement bridge structure, and improvements to bridge

approaches and roadways in the project vicinity. The new replacement bridge would be 317.1 m (1,040 feet) long and 24.4 m (80 feet) wide with four 3.7-m (12-foot) lanes (two in each direction), a 1.2-m (4-foot)-wide median, and 2.4-m (8-foot)-wide shoulders. Sidewalks on each side of the new bridge would be 1.5 m (5 feet) wide, and would meet Americans ADA requirements for sidewalk width and slopes. Concrete barrier railings (1.1 m [3.5 feet) high) topped with fencing (1.9 m [6.1 feet] high) would be provided on each side of the new bridge.

*Design Speed.* The Build Alternative would be designed for speeds of 56.3 kilometers per hour (35 miles per hour) and up to 64.4 kilometers per hour (40 miles per hour) due to vertical clearance.

*Vertical Clearance/Horizontal Alignment/Street Geometrics.* The profile of the new replacement bridge would be raised to a maximum roadway surface elevation of 1,129.09 ft which would provide a maximum vertical clearance of approximately 10.963 m (35.970 ft), and would meet and exceed the 7.3 m (24 ft) minimum vertical clearance required by the BNSF railroad and the CPUC in all locations. Bents for the new bridge would include crash walls and would meet and exceed the minimum horizontal clearance requirements. This alternative would also provide for the minimum 4.6-m (15-foot) clearance over West 3rd Street. Southbound left-turn pockets are proposed at 2nd Street. At the Mount Vernon Avenue/2nd Street intersection, the free right turn from westbound 2nd Street to the northbound Mount Vernon Avenue would be replaced by a right-turn pocket.

*Horizontal Clearance:* Where required and/or feasible, the bents for the new bridge would include crash walls that would meet or exceed the minimum horizontal clearance requirements. The crash walls would be solid concrete without voids or openings; however, adequate clearances (approximately 0.15 to 0.23 m [0.5 to 0.75 foot]) would be left between the bent columns and the crash walls in order to allow the bridge to move freely under seismic loads without the columns coming into contact with the crash walls. The crash walls would extend about 0.15 m (0.5 foot) beyond the face of columns.

*Bridge Alignment/Street Geometrics:* To correct the misalignment with the south approach roadway, the bridge would be widened on the west side closer to some of the existing residential land uses within the project vicinity. This widening would require the Mount Vernon Avenue service road between West 2nd and West 3rd Streets to be closed.

*Service Roadway:* Because the bridge widening and realignment would require closure of the service road along the southwest end of the Mount Vernon Avenue Bridge, a parallel alleyway behind the residential parcels in this area would be widened to provide a replacement access road

for the neighboring residents and railroad facilities. The alleyway would be widened from the existing variable width of 3.7 to 4.3 meters (12 to 14 feet) to a width of 9.1 meters (30 feet). The widening of the alleyway would provide vehicular access to the homes. The widening would occur on the east side of the alley in order to avoid impacts on adjacent homes.

*Roadway Improvements:* Additional roadway improvements at the south end of the bridge would include minor restriping, repaving, and installing of curbs and gutters. At the north end of the new bridge, similar types of roadway improvements would be provided. Additionally, retaining walls or concrete walls would be constructed along both sides of the north approach between about Kingman Avenue and West 4th Street. These retaining location and dimensions are presented below (measurements shown in feet):

- Location 1: max height-19.23 min height-2.00 Length: 246.47
- Location 2: max height-31.51 min height-7.68 Length: 345.94
- Location 3: max height-07.68 min height-2.00 Length: 157.18
- Location 4: max height-06.90 min height-2.00 Length: 154.25
- Location 5: max height-06.90 min height-2.00 Length: 221.94
- Location 6: max height-31.51 min height-2.00 Length: 605.26

The walls would be landscaped with vegetation that has aerial rootlets to cover the wall, potentially with creeping fig. The intersection of West 4th Street and Mount Vernon Avenue has been reconstructed in a cul-de-sac configuration as part of a separate City public works project.

*Railroad Operations:* The BNSF rail yard provides service to four different and very active railroad operations—BNSF freight, BNSF storage, Metrolink, and Amtrak. Because of these important railroad services, the primary focus of the structure design would be to maintain railroad operations during the construction of the new bridge. In order to do this, BNSF would require that two temporary railroad tracks (*shoofly* tracks) be installed within the north side of their existing BNSF yard, on both sides of the bridge, parallel to the existing BNSF railroad tracks.

Construction methods that would minimize impacts on railroad operations would be employed for the new replacement bridge. Removal of the existing bridge would be performed prior to construction using overhead techniques when and where possible. The girders would be precast concrete bulb-tee girders (concrete deck). The bridge foundation would be formed by large diameter drilled shafts (commonly referred to as cast-in-steel-shell piles, or CISS) to avoid the substantial footprint area required for pile-group-type foundations. Minimizing the footprint of the substructure would reduce the impact to railroad operations. Columns would be supported

on the CISS piles, and where required and/or feasible, crash walls would be implemented. Construction of the replacement bridge would be carried out using standard techniques that are typical in California and would be staged in the railroad right-of-way using BNSF and Metrolink authorized work windows. The project schedule would consist of the following milestones:

| ***Milestones*** | ***Date*** |
|---|---|
| Environmental Document Approved | late 2010 |
| Start of Construction | mid 2012 |
| End of Construction | mid 2014 |

The project is funded through the Federal HBRR Program, seismic retrofit account, and Local City funds.

For the Locally Preferred/Replacement Alternative (Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

### c. No Build Alternative (Alternative 1)

Under the No Build Alternative, no new or modified bridge or other physical improvements would be constructed on Mount Vernon Avenue between West 2nd and West 5th Streets. The existing bridge would be left in its current condition, and no structural or functional deficiencies would be corrected. Ongoing maintenance would continue. The No Build Alternative does not assume that the existing bridge would undergo seismic retrofitting.

This option was studied by the City in 1996 and was later discontinued in favor of constructing a new bridge. On June 4th, 2004, Caltrans Structures Maintenance and Investigations staff recommended closure of the existing bridge, concluding that steel beam and girder cracking cause the bridge to be unsafe. The City closed the bridge and has since undertaken efforts to install temporary shoring per an agreement with BNSF.

The agreement with BNSF specifies that removal of the shoring must occur before the end of 2 years. The 2·year timeframe has passed for the removal of shoring outlined in the agreement between the City and BNSF has currently been exceeded by approximately 4 years. Subsequent to installation of the shoring, the bridge continues to undergo periodic inspection by both Caltrans and shoring designers . However, the end of the 2-year period has passed and BNSF has not requested removal of the shoring; therefore, the shoring is being examined and maintained to

ensure that the original load carrying capacity is retained. Recent investigation has determined that Bent 6, Span 6 (as per built plans) would require additional temporary shoring. Should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets.

Permanent closure of the bridge would result in an unreasonable social and economic burden on the local community. Accordingly, the No Build Alternative has been determined to be imprudent and infeasible and would not meet the project purpose and need.

### 2-2.3 Alternatives Considered but Eliminated from Further Discussion

In 1997, the *New Mount Vernon Bridge Concept Study Report* (DMJM, 1997) evaluated four conceptual alternative bridge alignments. Two of these alignments were dropped from consideration during the study based on their impacts and costs. Three bridge types were studied further for alternative alignments 1 through 4 and included the following:

- Bridge Type A—Precast segmental concrete box girders (two independent structures);
- Bridge Type B—Trapezoidal steel girders with cast-in-place concrete decks (two independent structures); and
- Bridge Type C—Precast segmental cable-stayed box girders (one single structure).

Four project-specific bridge criteria were evaluated for each of the three bridge types, including:

- maintenance of north/south vehicular traffic,
- minimized disruption to rail operations,
- seismic performance, and
- structure maintenance.

The alternative alignments and bridge types considered were as follows.

*Alternative Alignment 1:* This alternative was proposed as a new four-lane bridge, generally in the same location as the existing bridge. The horizontal alignment of this alternative would eliminate the existing curve in the bridge with minimal alterations to the intersections at West 2nd and West 4th Streets. However, adjusting the horizontal alignment would require the acquisition of properties fronting the bridge on the southwest side between West 2nd and West 3rd Streets. Advantages of this alternative alignment include minor impacts on BNSF rail operations, intermodal apron, and existing buildings. While this alternative would have some

impacts on existing utilities, the impacts would be less than those for the other alternative alignments evaluated. All three bridge types considered for this alternative alignment would require complete closure of the existing bridge to vehicular and pedestrian traffic during construction. Bridge Type C would result in the least impact on rail facilities and operations, but Type A, the precast segmental box girder, would also result in minimal impacts. All three bridge types would afford the same level of seismic performance. Bridge Type A would require the least maintenance of all the bridge types; Type B would have the highest cost due to periodic painting. Alternative Alignment 1, the only viable alternative, has been carried forward to the current studies.

*Alternative Alignment 2:* This alternative was proposed as a new four-lane bridge on an alignment west of the existing bridge. Once a new bridge was constructed, the existing bridge would have been demolished. Vehicular and pedestrian traffic could have been maintained on the existing bridge during construction of the new bridge. Construction outside of the existing bridge footprint would have required approval by the railroad operators. This alternative would have resulted in substantial impacts on BNSF intermodal facilities and operations, as well as Amtrak and Metrolink service. This alternative alignment also would have required relocating existing utilities, reconstructing both the West 2nd and West 4th Street intersections, and acquiring adjacent residences and businesses. All three bridge types considered for this alternative alignment would have allowed for vehicular and pedestrian traffic on the existing bridge during construction. Impacts on rail operations, seismic performance, and structure maintenance would be the same as those discussed for Alternative Alignment 1. Because this alternative would have required substantial alterations to the existing BNSF railroad facilities and the reconstruction of street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration.

*Alternative Alignment 3:* This alternative was proposed as a new four-lane bridge on an alignment east of the existing bridge. Traffic would have been maintained on the existing Mount Vernon Avenue Bridge during construction, as discussed for Alternative Alignment 2. Also similar to Alternative Alignment 2, this alternative would have had substantial impacts on rail facilities and operations, but east of the existing bridge. Of particular concern were potential impacts on the nearby locally significant Santa Fe smokestack located just east of the bridge at West 4th Street. Other disadvantages of this alternative alignment would have included reconstruction of both the West 2nd and West 4th Street intersections, impacts to the Metrolink parking lot, and relocation of existing utilities. Like Alternative Alignments 1 and 2, this alternative also would have required acquisition of residential and commercial properties. Because this alternative would have required altering the existing BNSF railroad facility,

modifying the existing Metrolink commuter parking lot, and reconstructing street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration with no additional evaluation of bridge types.

*Alternative Alignment 4:* This alternative was proposed as a new split bridge with two southbound lanes west of and two northbound lanes east of the existing bridge. The split alignment would have allowed for construction of the new bridges while the existing bridge remained in service. The existing bridge would have been demolished once the new bridges were in operation. This alternative would have had impacts similar to those for Alternative Alignments 2 and 3 (i.e., utility relocations and property acquisitions). It would have resulted in the least desirable intersections at West 2nd and West 4th Streets and would have had the highest impact on railroad facilities and operations. Because this alternative would have required altering the existing BNSF railroad facility and reconstructing street improvements in a less desirable alignment for intersections and approaches, this alternative was withdrawn from consideration with no additional evaluation of bridge types.

# 3 DESCRIPTION OF SECTION 4(F) PROPERTY

Resources subject to Section 4(f) consideration include publicly owned lands consisting of a public park/recreational area; 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. There are no publicly owned parks/recreational areas or wildlife and waterfowl refuges in the proposed project area. However, there are significant historic sites in the vicinity of the project area that are considered to be Section 4(f) resources. Under Section 4(f), a significant historic site is defined as on, or eligible for listing in the National Register of Historic Places. The resources that are on the list or eligible for listing are provided in Table 1:

**Table 1. Resources Listed or Eligible for Listing in the National Register of Historic Places**

| Name | Location | Use | Significance |
|---|---|---|---|
| Mount Vernon Avenue Bridge | Project site | Yes | Eligible for listing in the NRHP |
| Atchison, Topeka & Santa Fe Passenger and Freight Depot | 1170 West 3rd Street | **No** | Listed in the NRHP (February 2, 2001) |

Source: Supplemental Historic Property Survey Report (Jones & Stokes, 2007b).

This section will discuss only the Section 4(f) resources in which a “use” occurs. Use occurs when 1) the property is acquired for a transportation project, 2) there is an occupancy of land that

is adverse to the preservationist purpose of Section 4(f), or 3) there is a proximity impact that substantially impairs the purpose of the land.

As indicated by the table, a use of the Mount Vernon Avenue Bridge occurs as part of the project. A use of the Atchison, Topeka & Santa Fe Passenger and Freight Depot does not occur as part of the project and a detailed discussion of this resource is included under section 5, "Other Park, Recreational Facilities, Wildlife Refuges, and Historic Properties Evaluated Relative to Requirements of Section 4(f)."

## 3-1 MOUNT VERNON AVENUE BRIDGE

The Mount Vernon Avenue Bridge is eligible for listing in the NRHP under Criterion A at the state level of significance because it was an important element of historic State Route 66 during the Great Depression era, was heralded at the time of its construction as the gateway to San Bernardino, and served a vital strategic role in the nation's transportation system during World War II. It is also eligible for listing in the NRHP under Criterion C at the local level due to its restrained Moderne styling, as exemplified by the approach span columns and the innovative use of materials on a large scale as dictated by the economies of the Great Depression.

The bridge spans the BNSF railroad yard between 3rd and 4th Streets. It is a 22-span bridge totaling 1,016 feet in length and 49 feet in width, carrying four traffic lanes between concrete baluster railings. The substructure consists of closed-end backfilled reinforced-concrete cantilever abutments, framed reinforced-concrete six-column bents, and framed two-column steel bents, all supported on creosoted Douglas fir piles. The superstructure consists of a combination of cast-in-place reinforced-concrete arched-soffit deck slab spans and multiple simple plate-steel girder spans. Seven of the original 20 spun-concrete light poles remain, with modern aluminum poles having replaced the rest. Original pendant lights have been replaced by modern cobra-head lights.

The character-defining features of the bridges are 1) the light poles with the original globes (now missing), 2) the bridge railing, 3) the overhanging sidewalk deck, 4) the steel arched brackets supporting the bridge deck, 5) the steel supporting piers (bents 4 to 21), 6) the steel girders (between bents 3 and 21), 7) the concrete abutments (located at the north and south ends of the bridge), 8) the concrete bents (bent 1, 2, and 3), and 9) the stairwell on the southeast corner.

## 3-1.1 Impacts on Section 4(f) Property – Mount Vernon Avenue Bridge

### a. Retrofit/Rehabilitation Alternative (Alternative 2)

#### *Facilities, functions, and/or activities potentially affected*

There are no existing facilities (bike lanes, trails, or recreational facilities) affected by the project. No impacts would occur.

#### *Accessibility*

Under this alternative, the following would likely occur: (1) temporary impact to pedestrian access across the BNSF rail yard; (2) temporary a decrease in intersection LOS at three intersections (5th/H, 2nd/G, and Rialto/G), and alleyway improvements resulting in impacts to secondary residential access; and (3) temporary impact to secondary residential access due to alleyway improvements (approximately three months) in duration. These impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

#### *Visual*

Under Retrofit/Rehabilitation Alternative, the visual elements of the bridge would be affected because the materials used to bring the bridge up to current seismic standards would differ from historic materials. Bridge height, lane widths, and sidewalk configurations would not change. This alternative would include complete deck replacement, girder strengthening, removal of lead paint, repainting, installation of new railings and roadway lighting, replacement or retrofit/rehabilitation of expansion joints, and the addition of crash walls around the bridge priers.

The Retrofit/Rehabilitation Alternative would not cause physical destruction or damage to the Mount Vernon Avenue Bridge, nor would this alternative cause physical destruction or damage to this historic property. Some of the design elements and proposed actions associated with the retrofit/rehabilitation of the bridge would result in adverse effects on some of the bridge's character-defining features and would not be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Under this alternative, the Mount Vernon Avenue Bridge would be seismically retrofitted and rehabilitated in place. The proposed design components in this alterative would result in a finding of Adverse Effect. Based on the Finding of Effect study that was prepared for the project, it was concluded that Retrofit/Rehabilitation Alternative would have an adverse effect on the Mount Vernon Avenue Bridge under Section 106 of the National Historic Preservation Act.

***Noise***

Under this alternative, the following would likely occur: (1) a temporary increase in community noise due to use of heavy equipment during construction activities. This impact is not related to the historic value of the Mount Vernon Avenue Bridge.

***Air Quality***

Under this alternative, the following would likely occur: (1) disturbance of asbestos containing materials (ACMs); (2) increases in construction-related emissions; and (3) potential diesel health risk from construction activities. These impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

***Water Quality***

The following temporary construction-related impacts could occur (1) release of hazardous materials (this effect is unlikely as explained further in the Environmental Assessment for the project); (2) excavation and substantial earthwork, resulting in an increase in surface water runoff , erosion, and increased pollution to local surface waters due to increased sediment loadings or discharge of construction-related pollutants (this effect is unlikely as explained further in the Environmental Assessment for the project); and potential exposure to contaminated groundwater, if encountered. These temporary construction-related impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

This alternative is not expected to permanently nor substantially affect the quantity or quality of surface water in the study area. Although this alternative would result in a bridge that is wider than the existing structure, resulting in a slight increase in impervious surfaces and contributing to an increase in the amount of onsite runoff, BMPs would be implemented. Additionally, this alternative would not alter the existing drainage patterns beyond a potentially slight increase in surface runoff. No permanent impacts would occur.

***Vegetation*** Within the Mount Vernon Avenue Bridge project site and immediate vicinity, there are (1) no special-status plats; (2) no natural vegetation communities (vegetation consisted of severely disturbed ruderal and/or nonnative plant species); (3) no applicable habitat conservation plans; and (4) no applicable natural community conservation plan. No impacts would occur.

***Wildlife***

Within the Mount Vernon Avenue Bridge project site and immediate vicinity there are (1) no wildlife movement corridors; and (2) no applicable habitat conservation plans. Although not observed during field surveys, pallid bat and/or California western mastiff bat may experience permanent loss of suitable roosting and/or nesting habitat only if relevant features of bridge

design changes appreciably. This impact is not related to the historic value of the Mount Vernon Avenue Bridge.

### b. Locally Preferred/Replacement Alternative (Alternative 3)

#### *Facilities, functions, and/or activities potentially affected*

There are no existing facilities (bike lanes, trails, or recreational facilities) affected by the project. No impacts would occur.

#### *Accessibility*

Under this alternative, the following would likely occur: (1) temporary impact to pedestrian access across the BNSF rail yard; (2) temporary a decrease in intersection LOS at three intersections (5th/H, 2nd/G, and Rialto/G), and alleyway improvements resulting in impacts to secondary residential access; and (3) temporary impact to secondary residential access due to alleyway improvements (approximately three months) in duration. These impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

#### *Visual*

Under the Locally Preferred/Replacement Alternative, possible visible changes associated with a new structure would include the increase in elevation and width. Replacement sidewalks would differ from the existing sidewalk configurations as they would be designed to meet ADA standards and Caltrans' Design Information Bulletin (DIB) 82. In addition, vegetation could be removed to accommodate the increased width of the new bridge. The proposed structure would have a different architectural character than the current bridge; however, the City has made a commitment to make any replacement structure compatible with the existing historic property. In addition, the City has committed that the new bridge would make reference to the massing, scale, materials, and design of the existing bridge.

The Locally Preferred/Replacement alternative would demolish the historic property, which would constitute an adverse effect; however, the effect from this alternative could be alleviated to a greater extent than the effect of the Retrofit/Rehabilitation Alternative. Based on the proposed construction methods and the application of the Criteria of Adverse Effect, the Department has determined that there are historic properties that would be affected pursuant to Section 106 PA Stipulation IX.B, and that the project would have an adverse effect on the Mount Vernon Avenue Bridge.

#### *Noise*

Under this alternative, the following would likely occur: (1) a temporary increase in community noise due to use of heavy equipment during construction activities. This impact is not related to

the historic value of the Mount Vernon Avenue Bridge.

#### *Air Quality*

Under this alternative, the following would likely occur: (1) disturbance of asbestos containing materials (ACMs); (2) increases in construction-related emissions; and (3) potential diesel health risk from construction activities. These impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

#### *Water Quality*

The following temporary construction-related impacts could occur (1) release of hazardous materials (this effect is unlikely as explained further in the Environmental Assessment for the project); (2) excavation and substantial earthwork, resulting in an increase in surface water runoff , erosion, and increased pollution to local surface waters due to increased sediment loadings or discharge of construction-related pollutants (this effect is unlikely as explained further in the Environmental Assessment for the project); and potential exposure to contaminated groundwater, if encountered. These temporary construction-related impacts are not related to the historic value of the Mount Vernon Avenue Bridge.

This alternative is not expected to permanently nor substantially affect the quantity or quality of surface water in the study area. Although this alternative would result in a bridge that is wider than the existing structure, resulting in a slight increase in impervious surfaces and contributing to an increase in the amount of onsite runoff, BMPs would be implemented. Additionally, this alternative would not alter the existing drainage patterns beyond a potentially slight increase in surface runoff. No permanent impacts would occur.

Groundwater could be negatively affected by the foundation construction for the proposed project due to pile driving. Groundwater depth will be further analyzed during PS&E Final Design for the project. Regardless of groundwater depth, exposure to potential contaminated groundwater could result in substantial health effects; however, it is unlikely that an identified hazardous waste groundwater plume will extend underneath Mount Vernon Avenue Bridge.

#### *Vegetation*

Within the Mount Vernon Avenue Bridge project site and immediate vicinity, there are (1) no special-status plats; (2) no natural vegetation communities (vegetation consisted of severely disturbed ruderal and/or nonnative plant species); (3) no applicable habitat conservation plans; and (4) no applicable natural community conservation plan. No impacts would occur.

#### *Wildlife*

Within the Mount Vernon Avenue Bridge project site and immediate vicinity there are (1) no

wildlife movement corridors; and (2) no applicable habitat conservation plans. Although not observed during field surveys, pallid bat and/or California western mastiff bat may experience permanent loss of suitable roosting and/or nesting habitat only if relevant features of bridge design changes appreciably. This impact is not related to the historic value of the Mount Vernon Avenue Bridge.

### c. No Build Alternative (Alternative 1)

#### *Facilities, functions, and/or activities potentially affected*

The bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets. The elimination of the crossing would interfere with access to parks and recreational facilities.

#### *Accessibility*

The elimination of the bridge crossing would severely disrupt the local and regional circulation system; this alternative would result in an effect on traffic, transportation, pedestrian and bicycle facilities in the area surrounding Mount Vernon Avenue Bridge.

#### *Visual*

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts on Key Viewpoints and the visual setting/ aesthetic conditions would not occur.

#### *Noise*

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts from noise would not occur.

#### *Air Quality*

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts on air quality would not occur.

#### *Water Quality*

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts on water quality would not occur.

#### *Vegetation*

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts on vegetation would not occur.

***Wildlife***

Under the No Build Alternative, neither bridge modifications nor replacement would occur; therefore, impacts on wildlife would not occur.

## 3-1.2 Applicability of the Programmatic Section 4(f)

As an alternative to preparing a full individual Section 4(f) evaluation, a programmatic evaluation may be utilized. Programmatic Section 4(f) evaluations streamline the documentation and approval process and amount of interagency coordination that is required for an individual Section 4(f) evaluation. Draft and final evaluations do not need to be prepared and FHWA legal sufficiency review is not required. Interagency coordination is required only with the official(s) with jurisdiction and not with DOI, USDA, or HUD. If any of the following conditions exist, use of any of the programmatic applications do not apply:

- Construction of transportation facilities on new alignment;
- Projects for which an EIS is prepared (does not apply to the Net Benefit Programmatic);
- Specific conditions of each type of programmatic application are not met;
- Projects with one or more Section 4(f) uses that do not meet the criteria for use of any of the programmatic 4(f)s;
- Proximity impacts resulting in constructive use are involved.

The Department, as assigned by FHWA, has determined that certain highway projects may comply with the requirements of Section 4(f) under a nationwide programmatic evaluation rather than through an individual evaluation. Five nationwide programmatic Section 4(f) evaluations are available. One covers projects that use historic bridges. The second covers projects that use minor amounts of land from parks, recreational areas, and wildlife and waterfowl refuges. The third covers projects that use minor amounts of land from historic sites. The fourth covers bikeway projects. The fifth applies when there is a net benefit to a Section 4(f) property. For the historic bridge programmatic Section 4(f) Evaluation, the project must meet the conditions for all programmatic 4(f) applications (above) with regard to the type of project, lack of proximity impacts resulting in a constructive use, and the type of environmental document and all of the following conditions:

- the bridge is to be replaced or rehabilitated using federal funds;

- the bridge must listed on or eligible for listing on the National Register of Historic Places;
- the bridge cannot be a National Historic Landmark;
- Caltrans, as delegated by FHWA, determines that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation; and
- Caltrans, SHPO and the ACHP must have reached agreement through full implementation of the Section 106 process on project effects and a Memorandum of Agreement on mitigation measures.

The proposed project meets the applicability criteria for the Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges (1983) because:

- All build alternatives for the Mount Vernon Avenue Bridge Project include either replacement or rehabilitation which will be implemented using funds from the federal Highway Bridge Replacement and Rehabilitation (HBRR) Program;
- The Mount Vernon Avenue Bridge is eligible for listing in the National Register of Historic Places under Criterion A at the state level of significance and under Criterion C at the local level of significance;
- The Mount Vernon Bridge is not a National Historic Landmark;
- Caltrans, as delegated by FHWA, has determined that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation;
- Caltrans and SHPO, as delegated by ACHP, have finalized a Finding of Effect (FOE) for the Mount Vernon Avenue Bridge and have coordinated to prepare a list of mitigation measures in the draft Memorandum of Agreement (MOA) which will be sent the the SHPO for approval after public circulation of the MOA within the draft environmental document.

The historic bridges covered by this Programmatic Section 4(f) Evaluation are historic, yet also part of either a Federal-aid highway system or a state or local highway system. The programmatic evaluation can be used because, even though historic bridges are on or eligible for inclusion on the National Register of Historic Places, the bridges must perform as an integral part of a modern transportation system.

The programmatic evaluation acknowledges that the project will impair the historic integrity of the bridge either by rehabilitation or replacement/demolition. If the project meets the certain conditions as outlined in requirements for this programmatic evaluation, it will satisfy the

requirements of Section 4(f) and confirm there is (1) no feasible and prudent alternative and (2) that the project includes all possible planning to minimize harm.

Caltrans intends to approve a programmatic section 4(f) evaluation prior to approval of the FONSI. The text that follows is supporting documentation for Caltrans' future determination. Caltrans' anticipates that SHPO will be providing us their approval on the MOA after circulation of this environmental document to complete the Section 106 process and following that Caltrans will prepare and approve the programmatic section 4(f) evaluation.

### 3-1.3 Avoidance Alternatives and Other Findings

The following alternatives avoid any use of the historic bridge:

1. Do nothing.
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the National Historic Preservation Act (NHPA).
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

Each of these alternatives have been evaluated and determined not to be feasible and prudent.

***Build on new location without using the old bridge***. Investigations have been conducted to construct a bridge on a new location or parallel to the old bridge on a new location or parallel to the old bridge (allowing for a one-way couplet); however, for one or more of the following reasons, this alternative is not feasible and prudent.

- Terrain—The present bridge structure has already been located at the only feasible and prudent site, i.e., a gap in the landform, the narrowest point of the river canyon, etc. To build a new bridge at another site will result in extraordinary bridge and approach engineering and construction costs or extraordinary disruption to established traffic patterns.
- Adverse Social, Economic, or Environmental Effects—Building a new bridge away from the present site would result in social, economic, or environmental impacts of extraordinary magnitude. Impacts such as displacement of a significant number of families or businesses and serious disruption of established traffic patterns/access may individually or cumulatively weigh heavily against relocation to a new site.
- Engineering and Economy—Where difficulties associated with the new location are less extreme than those encountered above, a new site would not be feasible and prudent where cost and engineering difficulties reach extraordinary magnitude. Factors

supporting this conclusion include significantly increased roadway and structure costs, serious foundation problems, or extreme difficulty in reaching the new site with construction equipment. Additional design and safety factors to be considered include an ability to achieve minimum design standards or meet requirements of various permitting agencies such as those involved with navigation, pollution, and the environment.

- Preservation of Old Bridge—It is not feasible and prudent to preserve the existing bridge even if a new bridge were to be built at a new location. This could occur when the historic bridge is beyond rehabilitation for transportation or an alternative use, when no responsible party can be located to maintain and preserve the bridge, or when a permitting authority, such as the Coast Guard, requires removal or demolition of the old bridge.

It is not feasible and prudent to construct a new bridge adjacent to or away from the existing bridge due to the existing street configuration, substantial social and economic impacts, and infeasibility of bridge preservation. The existing bridge provides access from 2nd Street across the BNSF railroad to where historic State Route 66 jogs west from its southerly extension. The existing 2nd Street extends approximately two blocks west of the existing bridge in a residential neighborhood that is bisected by a rail line. Construction of a new bridge in this area is expected to involve acquisition of existing homes, resulting in displacement of residents and redirection of traffic from Mount Vernon Avenue through an existing residential neighborhood. Additionally, the location and design of the bridge would be further constrained by an existing rail spur.

The street grid does not exist east of historic State Route 66 since this area, adjacent to Interstate 215, is used for railroad storage/parking. Construction of a new bridge on land to the east would require an increase of several hundred feet over the existing storage/parking area to meet State Route 66 and would result in significant additional cost and engineering difficulties. Additionally, construction of a bridge to the east could result in adverse impacts to an additional 4(f) resource, the Atchison, Topeka & Santa Fe Passenger and Freight Depot, located at 1170 West 3rd Street.

Preservation of the existing bridge is not considered feasible due to the extent of deterioration. The bridge has been deemed unsafe and recommended for closure by Caltrans due to major structural deficiencies and temporary shoring has been installed by the City to allow safe use of the bridge. Per an agreement between the City and BNSF, removal of the shoring must occur before the end of 2 years as required by BNSF. However, the end of the 2-year period has passed and BNSF has not requested removal of the shoring; therefore, the shoring is being examined and maintained to ensure that the original load carrying capacity is retained. Recent

investigation has determined that Bent 6, Span 6 (as per built plans) would require additional temporary shoring. Should BNSF require the removal of shoring, the bridge would be closed and there would be no crossing on Mount Vernon Avenue between West 2nd and West 5th Streets. Following removal of the shoring, the bridge would be closed to traffic. The type of retrofit/rehabilitation required to make the bridge safe for pedestrians and traffic would result in alteration or demolition of character-defining features and result in an adverse impact to the historic bridge.

### 3-1.4 Measures to Minimize Harm to the Section 4(f) Property

As part of the Section 106 process, a Memorandum of Agreement (MOA) will be developed between the State Historic Preservation Officer (SHPO) and the Department to address the finding of adverse effect for the bridge. The MOA will provide stipulations that the City of San Bernardino will construct the replacement bridge with a designed developed in consultation with the SHPO to minimize the visual impact on the setting of the Depot. The draft MOA will be finalized after public review of the Environmental Assessment (EA). This MOA also requires concurrence of the Department local office (Caltrans District 8) and the City of San Bernardino. Architectural design of the proposed structures will be submitted to and approved by City officials prior to alteration of the existing historical resources.

The following mitigation measures were identified in the Draft Memorandum of Agreement, pursuant to Section 106 PA Stipulation XI, 36 CFR 800.6(a) and 800.6(b)(1), which will be submitted to SHPO after public review of the Environmental Assessment and Draft Programmatic Section 4(f) Evaluation. These measures are proposed pending concurrence from SHPO.

- CR-1: Prior to the start of any work that could adversely affect any characteristics that qualify the Mount Vernon Avenue Bridge as an historic property, the Department shall ensure that the recordation measures specified in Section A of the MOA are completed.
- CR-2: The City shall take a large-format (4” by 5” or larger negative size) photographs showing the Mount Vernon Avenue Bridge in context as well as details of its historic engineering features. Photographs shall be processed for archival permanence in accordance with the Historic American Engineering Record (HAER) photographic specifications. Views of the Mount Vernon Avenue Bridge shall include: (1) Contextual views showing the bridge in its setting; (2) Elevation views; (3) Views of the bridge’s

approaches and abutments; and (4) Detail views of significant engineering and design elements.

- CR-3: The City shall make a reasonable and good faith effort to locate historic construction drawings for the Mount Vernon Avenue Bridge. If these drawings are located, the City shall photographically reproduce plans, elevations and selected details form these drawings in accordance with HAER photographic specifications. If they are legible in this format, reduced size 8 ½" by 11") copies of the construction drawings may be included as pages of the report cited in subsection A.3. of the MOA rather than photographed and included as photographic documentation. The City shall promptly notify the Department if historic construction drawings for Bridge #54C-0066 cannot be located. In that event, the requirements of this paragraph shall not apply.
- CR-4: A written historical and descriptive report for the Mount Vernon Avenue Bridge will be completed. This report will provide a physical description of the bridge, discuss its construction and its significance under applicable National Register criteria, and address the historical context for its construction following the format and instructions in the September 1993 National Parks Service (NPS) HAER Guidelines for Preparing Written Historical and Descriptive Data guidelines for written documentation.
- CR-5: Upon completion, copies of the documentation prescribed in subsection A.3 of the MOA shall be retained by the Department, District 8, and offered to the California Room of the City's Feldhym Library.
- CR-6: the Department shall ensure that the City constructs the replacement bridge in accordance with a design developed in consultation with the SHPO and submitted to the SHPO for comments, to minimize the indirect visual impact (profile, scale, color, and material) of the replacement bridge on the setting of the adjacent National Register listed historic property, the Atchison, Topeka and Santa Fe Passenger and Freight Depot (Santa Fe Depot). The proposed bridge replacement design is depicted in Attachment B of the MOA and simulations for the replacement are included in Attachment C of the MOA. In addition, existing photographs of the Mount Vernon Avenue Bridge are located in Attachment D of the MOA.
- CR-7: the Department in consultation with the SHPO, shall ensure that the replacement bridge will be designed to included architectural details (bridge railing, lighting, concrete abutments, stairways) in order to convey the character-defining elements of the original historic structure and to be visually compatible with the adjacent Santa Fe Depot.
- CR-8: the Department shall ensure that the City replace any landscape elements (fan palm trees – Washingtonia robusta), which are 50 years or older and contribute to the historic setting of the bridge, which were removed as a result of the bridge replacement

project. Appropriate replacement trees should be planted in those planned landscaped areas northwest and southeast of the bridge alignment.

Additionally, the project proposes other aesthetic measures to ensure that the proposed replacement bridge is consistent in architecture, scale, and size to the existing bridge and surroundings, to the extent feasible.

- The following minimization measures are standard requirements which are required by the Department for all projects:
- Standard CR-A: If cultural materials 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.
- Standard CR-B: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Additionally, the project proposes other aesthetic measures to ensure that the proposed replacement bridge is consistent in architecture, scale, and size to the existing bridge and surroundings, to the extent feasible. Landscaping measures are also proposed:

- Bared soil will be landscaped with the department's recommended seed mix of locally adapted species to preclude the invasion of noxious weeds. The use of site-specific materials, which are adapted to local conditions, increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem.

The following minimization measures are standard requirements which are required by the Department for all projects:

- **Standard CR-A:** If cultural materials 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.

- **Standard CR-B:** If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable

### 3-1.5 Coordination

Consultation with the SHPO and other cultural resources stakeholders has been initiated. The Department, as assigned by FHWA, has obtained SHPO concurrence with the determination of eligibility and the finding of effect for this resource. Notification letters were sent to various local entities requesting information regarding cultural resources that may be located within the Area of Potential Effects (APE).

The following coordination has occurred to address cultural resources pursuant to Section 106 of the National Historic Preservation Act:

- August 2000 - The Area of Potential Effect (APE) for Cultural Resources was signed by the Department (District 8) Environmental Branch Chief.
- December 2000 - The APE for Cultural Resources was signed by the FHWA Transportation Engineer.
- August 2001 - A Historic Property Survey Report (HPSR) was prepared and submitted to the SHPO based on the study area delineated by the APE.
- March 2002 - SHPO concurrence on the HPSR.
- April 2004 - Due to expanded footprint, a supplemental records and literature search was requested from the San Bernardino Archaeological Information Center at the San Bernardino Museum.
- April 2004 - A revised APE for Cultural Resources was signed by the Department.
- June 2007 - A 1st Supplemental HPSR and Finding of Effect (FOE) was prepared and submitted to SHPO based on the revised APE.
- September 2007- SHPO concurrence was received on the HPSR and FOE.

- December 2009 - Informal review of a draft Memorandum of Agreement (MOA) occurred and the MOA will be formally submitted to the SHPO after public circulation of the draft environmental document.

# 4 LETTERS AND OTHER CORRESPONDENCE

Copies of letters and correspondence related to the coordination efforts done for the Programmatic Section 4(f) Evaluation are attached included on the following pages.

Preserving America's Heritage

December 12, 2008

Gregory P. King, Chief
Cultural and Community Studies Office
Division of Environmental Analysis
1120 N Street – P.O. Box 942874
Sacramento, CA 94274-0001

Ref: *Proposed Mount Vernon Avenue Bridge Replacement Project*
*San Bernardino County, California*

Dear Mr. King:

On November 17, 2008, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the California State Historic Preservation Office (SHPO) and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Carol Legard at 202 606-8522 or via e-mail at clegard@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Federal Permitting, Licensing and Assistance Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone:202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

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STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

**OFFICE OF HISTORIC PRESERVATION**
**DEPARTMENT OF PARKS AND RECREATION**
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SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

September 18, 2007 Reply To: FHWA000302A

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 Replacement of the Mt. Vernon Avenue Bridge, San Bernardino, 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 historic properties, specifically the Mount Vernon Ave Bridge, a property determined eligible for the National Register of Historic Places in 2002. 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,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

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# 5 LEAST HARM ANALYSIS AND CONCLUDING STATEMENT

If there is no prudent and feasible alternative to avoid harm to the Section 4(f) property, then only the alternative that causes the least overall harm in light of the preservation purposes of Section 4(f) can be chosen. The least overall harm is determined by balancing the:

1. Ability to mitigate adverse impacts to each Section 4(f) resource;
2. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features, even if harm is substantially equal;
3. Relative significance of each Section 4(f) property;
4. Views of the officials with jurisdiction over each Section 4(f) property;
5. Degree to which each alternative meets the purpose and need;
6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
7. Substantial differences in costs among alternatives.

The following discussion balances and weighs the ability of each of the alternatives to meet these criteria.

## a. Retrofit/Rehabilitation Alternative (Alternative 2)

***1. Ability to mitigate adverse impacts to each Section 4(f) resource***

The Retrofit/Rehabilitation Alternative (Alternative 2) would result in an adverse effect on the bridge because much of the historic building material would be removed and replaced. Furthermore, since the alternative includes widening of the bridge superstructure by 20 feet, modification of the original columns, and replacement of the deck, railings, and four spans, character-defining features would be altered or demolished.

***2. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features, even if harm is substantially equal***

Bridge retrofit/rehabilitation cannot be done in any other way that would avoid removal and replacement of historic building material. The modifications associated with this alternative would change the overall visual appearance of the bridge as a result of the materials that

would be added to the bridge to bring it into compliance with current seismic and structural standards.

3. ***Relative significance of each Section 4(f) property***

   Amongst all the build alternatives for the Mount Vernon Avenue Bridge project, the Mount Vernon Avenue Bridge, itself, is the only effected Section 4(f) resource.

4. ***Views of the officials with jurisdiction over each Section 4(f) property***

   The Finding of Effect report prepared for the project has demonstrated that the existing bridge cannot be retrofitted and rehabilitated without altering the historic character of the bridge, and the proposed alterative would significantly damage the integrity of this historic property.

5. ***Degree to which each alternative meets the purpose and need***

   Implementation of this alternative would not fully address the structural issues associated with the existing bridge, nor would it bring the bridge into compliance with current design and safety codes. Due to the existing configuration of the bridge vertical bridge clearances would not be increased as required by BNSF for safety purposes.

6. ***After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and***

   With the exception of cultural resources, the magnitude of the additional project impacts are similar for both alternatives.

7. ***Substantial differences in costs among alternatives***

   For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

   For the Locally Preferred/Replacement Alternative (Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

The cost of Alternative 3 exceeds the cost for Alternative 2, However, when considering which alternative is the more reasonable expenditure of public funds, it is necessary to consider that Alternative 2 would result in additional costs 15 to 20 years after it is constructed because the limited service life of retrofit/rehabilitation efforts. Alternative 3 would have the lowest overall cost of the two alternatives.

### b. Locally Preferred/Replacement Alternative (Alternative 3)

***1. Ability to mitigate adverse impacts to each Section 4(f) resource***

Under the Locally Preferred/Replacement Alternative, possible visible changes associated with a new structure would include the increase in elevation and width. Replacement sidewalks would differ from the existing sidewalk configurations as they would be designed to meet ADA standards and Caltrans' Design Information Bulletin (DIB) 82. In addition, vegetation could be removed to accommodate the increased width of the new bridge. The proposed structure would have a different architectural character than the current bridge; however, the City has made a commitment to make any replacement structure compatible with the existing historic property. In addition, the City has committed that the new bridge would make reference to the massing, scale, materials, and design of the existing bridge.

The Locally Preferred/Replacement alternative would demolish the historic property, which would constitute an adverse effect; however, the effect from this alternative could be alleviated to a greater extent than the effect of the Retrofit/Rehabilitation Alternative. Based on the proposed construction methods and the application of the Criteria of Adverse Effect, the Department has determined that there are historic properties that would be affected pursuant to Section 106 PA Stipulation IX.B, and that the project would have an adverse effect on the Mount Vernon Avenue Bridge.

***2. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features, even if harm is substantially equal***

The Locally Preferred/Replacement Alternative would provide improvements to the transportation infrastructure in order to promote physical connectivity, and would reflect high aesthetic values and architectural style. The project would provide for streetscape improvements that would uniquely identify the architecturally or historically significant residential neighborhoods since the replacement bridge would be constructed to be compatible with the existing historic resources. The project would also maintain and rehabilitate roadways, sidewalks, and pedestrian facilities within the study area. The replacement bridge would not conflict with previous mitigation for the Mount Vernon Avenue Corridor that

requires development adjacent to a place, structure, or object of historic significance to be designed so that permitted uses and architectural design would protect the visual setting of the historic site (Mount Vernon Corridor Redevelopment Project Final Program EIR Mitigation Measure H4d).

***3. Relative significance of each Section 4(f) property***

Amongst all the build alternatives for the Mount Vernon Avenue Bridge project, the Mount Vernon Avenue Bridge, itself, is the only effected Section 4(f) resource.

***4. Views of the officials with jurisdiction over each Section 4(f) property***

Furthermore, the proposed Locally Preferred/Replacement Alternative would demolish the historic property, which would also constitute an adverse effect, but the effect would be substantially more adverse than the retrofit/rehabilitation alternative (see the previous Alternative 2, Retrofit/Rehabilitation Alternative impact discussion). Based on the Finding of Effect report that was prepared for the proposed project, it was concluded that the Locally Preferred/Replacement Alternative would have an adverse effect on the bridge under Criteria 2(i), 2(ii), and 2(v). Based on the proposed construction alternatives and the application of the criteria of adverse effect, the Department has determined that there are historic properties that would be affected pursuant to Section 106 PA Stipulation IX.B, and that the undertaking would have an adverse effect on the Mount Vernon Avenue Bridge.

The Department, as assigned by FHWA, requested concurrence from SHPO in this finding of an Adverse Effect pursuant to the Section 106 Programmatic Agreement (PA), Stipulation XC, and has consulted with SHPO regarding the resolution of adverse effects, pursuant to Section 106 PA, Stipulation XI and 36 CFR 800.6(a), and 800.6(b)(1). SHPO concurred on the finding of adverse effect on September 18, 2007.

***5. Degree to which each alternative meets the purpose and need***

Implementation of the Locally Preferred/Replacement alternative is consistent with the project purpose and need.

***6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)***

With the exception of cultural resources, the magnitude of the additional project impacts are similar for both alternatives.

***7. Substantial differences in costs among alternatives***

For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. With this project cost, the service life of the bridge would likely be extended only by a limited 15 to 20 years beyond completion of the retrofit/rehabilitation.

For the Locally Preferred/Replacement Alternative (Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

The cost of Alternative 3 exceeds the cost for Alternative 2, However, when considering which alternative is the more reasonable expenditure of public funds, it is necessary to consider that Alternative 2 would result in additional costs 15 to 20 years after it is constructed because the limited service life of retrofit/rehabilitation efforts. Alternative 3 would have the lowest overall cost of the two alternatives.

## c. No Build (Alternative 1)

***1. Ability to mitigate adverse impacts to each Section 4(f) resource***

Under the No-Build Alternative, the use of the Section 4(f) resource would be avoided. However, it would not correct the situation that caused the bridge to be considered structurally and seismically deficient and would result in permanent closure of the bridge to pedestrian and motorist traffic. Because the existing bridge does not meet the requirements of the current seismic codes and has been subject to steel beam and girder cracking, it is considered a safety hazard for the motorists and pedestrians that use the bridge and has been recommended for closure by Caltrans. Permanent closure of the bridge would result in an unreasonable social and economic burden on the local community which cannot be minimized or mitigated.

***2. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features, even if harm is substantially equal***

The No-Build Alternative would result in no structural or physical changes to the bridge. Under this alternative, the bridge would continue to deteriorate and eventually result in the loss of the historic property itself.

***3. Relative significance of each Section 4(f) property***

Amongst all the alternatives for the Mount Vernon Avenue Bridge project, the Mount Vernon Avenue Bridge, itself, is the only effected Section 4(f) resource.

***4. Views of the officials with jurisdiction over each Section 4(f) property***

The No Build Alternative as been withdrawn from further consideration; therefore, there is no additional input from officials with jurisdiction over the historic resource.

***5. Degree to which each alternative meets the purpose and need***

The No Build Alternative as been withdrawn from further consideration because it does not meet the project purpose and need. Implementation of this alternative does not address the seismic and structural deficiencies in the bridge that render it unsafe for public use.

- Maintenance—The No-Build Alternative does not correct the situation that causes the bridge to be structurally and seismically deficient or deteriorated. These deficiencies can lead to sudden collapse and potential injury or loss of life. Normal maintenance is not considered adequate to remedy the situation.
- Safety—The No-Build Alternative does not correct the situation that causes the bridge to be considered deficient.

These deficiencies either (1) pose serious and unacceptable safety hazards to the traveling public or (2) places intolerable restrictions on transport and travel due to potential closure of the bridge.

***6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and***

Permanent closure of the bridge would result in an unreasonable social and economic burden on the local community.

***7. Substantial differences in costs among alternatives***

Permanent closure of the bridge would result in an unreasonable social and economic burden on the local community.

For the Retrofit/Rehabilitation Alternative (Alternative 2), the total project cost would be $31,110,375. The cost assumes $24,888,300 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities. For the Locally Preferred/Replacement Alternative

(Alternative 3), the total project cost would be $40,656,250. The cost assumes $31,800,000 for construction, $2,708,000 for preliminary bridge design, $4,878,000 for final bridge design, $575,000 for right-of-way, $504,000 for environmental and $150,000 for utilities.

# 6 OTHER PARK, RECREATIONAL FACILITIES, WILDLIFE REFUGES, AND HISTORIC PROPERTIES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F)

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found 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 eligible historic properties, 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.

Archaeological and historic sites within the Section 106 area of potential effects (APE) and all public and private parks, recreational facilities, and wildlife refuges within approximately 0.5 mile of have been analyzed to determine whether they are protected Section 4(f) resources and whether the project would "use" the properties.

***Trails***

There is an existing proposal for "Local Multi-Purpose Trail" on Mount Vernon Avenue, both on the bridge and the adjacent northern and southern segments of Mount Vernon Avenue (November 2005 City of San Bernardino General Plan, Page 8-13); therefore, the multi-purpose trail was subject to Section 4(f) consideration. However, currently there is no existing trail that is officially designated on Mount Vernon Avenue Bridge, nor the adjacent northern and southern segments of Mount Vernon Avenue. Additionally, both the existing bridge and proposed replacement bridge are wide enough to accommodate any future development of the Local Multi-Purpose Trail; therefore, a "use" of the proposed Section 4(f) resource does not occur and provisions of Section 4(f) are not triggered.

***Parks***

Viaduct Park, located at North Mount Vernon Avenue immediately south of West 2nd Street, is to the immediate southeast of the project area and was also considered as a Section 4(f) resource.

The last known use for Viaduct Park was in 1986 when the Santa Fe Engine 3751 was removed from display at the park. Currently, there are no improvements on Viaduct Park, nor is it landscaped/maintained by the City for park use. Additionally, Viaduct Park does not appear in the City's General Plan Table PRT-2, Existing City Parks and Recreation Facilities; therefore, a "use" of Viaduct Park as a potential Section 4(f) Resource does not occur and provisions of Section 4(f) are not triggered.

Active parks in the project vicinity are:

- La Plaza Park located at 685 Mount Vernon Avenue, approximately 0.40 km (0.25 mile) north of the project site;
- Ninth Street Park located at 2931 Garner, approximately 0.77 km (0.48 mile) north of the project site; and
- Nunez Park located at 1717 West 5th Street, approximately 0.83 km (0.51 mile) west of the project site.

The project will not require acquisition or temporary construction easements on any of these properties nor will the project result in temporary access impacts due available detour routes and the provision of free Omnitrans bus passes provided by the City of San Bernardino. A "use" of these parks would not occur as a result of the proposed project and provisions of Section 4(f) are not triggered.

***Cultural Resources***

The historic sites considered for significance are shown on the Area of Potential Effects (APE) map (signed by Caltrans on August 22, 2000, and by FHWA on December 23, 2000) and supplemental APE map (with Architectural APE, signed on May 25, 2006). The supplemental Architectural APE includes the proposed width of the rehabilitated or replacement bridge and the maximum right-of-way for the proposed project.

A total of 26 properties were identified in the Historic Property Survey Reports (HPSR) within the APE (P.S. Preservation Service 2001, JSA 2004). In accordance with FHWA guidance, Section 4(f) requirements are only applicable to *significant* historic sites (i.e., those sites on or eligible for the National Register of Historic Places [NRHP] or sites otherwise determined significant by the FHWA Administrator [23 CFR Section 774.11(e)]). Of the 26 properties, two existing properties were found to be listed or eligible for listing in the NRHP as historic resources:

- Mount Vernon Avenue Bridge and
- Atchison, Topeka & Santa Fe Passenger and Freight Depot.

This section discusses only the Section 4(f) resources in which a "use" does not occur. A use of the Atchison, Topeka & Santa Fe Passenger and Freight Depot does not occur as part of the project. A use of the Mount Vernon Avenue Bridge does occur as part of the project, and a discussion of this resource was included under Section 3, "List and Description of Section 4(f) Proper

On March 1, 2002, SHPO provided concurrence on the HPSR which included a no effect finding for the Atchison, Topeka & Santa Fe Passenger and Freight Depot. Atchison, Topeka & Santa Fe Passenger and Freight Depot is located at 1170 West 3rd Street, approximately 310 meters (1,020 feet) east of the Mount Vernon Avenue Bridge. It was constructed between 1918 and 1921, the period of significance. The Santa Fe Depot has a three-story central block with 2 two-story wings to either side. The Mission Revival style is evident in the single and grouped arched windows, towers, and domes; rounded balconettes with metal railings; a quatrefoil window in the third-story front-gabled end; and shaped parapets. The building was recently restored after having fallen into disrepair and is currently occupied in part by the San Bernardino Associated Governments (SANBAG). Metrolink and Greyhound will be utilizing some of the office space in the future.

The Santa Fe Depot was listed in the NRHP under Criterion C on February 2, 2001, as an outstanding example of Mission Revival-style architecture. Structures listed in the NRHP are automatically listed on the California Register of Historical Resources (CRHR).

As defined in 23 CFR Section 774.17, the "use" of a protected Section 4(f) resource occurs when any of the following conditions are met.

- When land is permanently incorporated into a transportation facility (direct use);
- When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in §774.13(d) (temporary use).
- When there is a constructive use of a Section 4(f) property as determined by the criteria in §774.15 (constructive use).

***Direct Use***—A direct use of a Section 4(f) resource takes place when the property is permanently incorporated into a proposed transportation facility/project (23 CFR Section 771.17). 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 (23 CFR Section 771.135[p][7]).

The depot is not located within the project footprint for retrofit/rehabilitation or replacement of the Mount Vernon Avenue Bridge and will not be incorporated into the project or project alternatives through partial or full acquisition. Additionally, no permanent change to the depot is proposed. Therefore, implementation of the project or project alternatives will not result in a direct use of this 4(f) resource and provisions of Section 4(f) are not triggered.

***Temporary Use***—A temporary use of a Section 4(f) resource occurs when there is a temporary occupancy of property that is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. Under the FHWA regulations (23 CFR Section 774.13[b]), 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) and not involve a change in ownership of the property.
- The scope of work must be minor, with only minimal changes to the protected resource.
- There are no permanent adverse physical effects on the protected resource, and there will be no temporary or permanent interference with activities or purpose of the resource.
- The property being used must be fully restored to a condition that is at least as good as that which existed prior to the proposed project.
- There must be documented agreement of the appropriate officials having jurisdiction over the resource regarding the foregoing requirements.

The proposed project and project alternatives do not involve temporary occupancy or change in property ownership of the depot property. Therefore, implementation of the project or project alternatives will not result in an indirect use of this 4(f) resource. and provisions of Section 4(f) are not triggered.

***Constructive Use***—A constructive use of a Section 4(f) resource happens 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) so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired (23 CFR Section 774.15). Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished. This determination is made through the following practices:

- identification of the current activities, features, or attributes of the resource that may be sensitive to proximity impacts;

- analysis of the potential proximity impacts on the resource; and
- consultation with the appropriate officials having jurisdiction over the resource (23 CFR Section 774.5).

The proposed project will not cause a constructive use of The Santa Fe Depot because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic site.

# 7 ADDITIONAL REFERENCES

- 23 CFR 774: Parks, Recreation Areas, Wildlife And Waterfowl Refuges, And Historic Sites (Section 4(F))
- 23 CFR 771.135: FHWA Environmental Impact and Related Procedures; Section 4(f) Technical Advisory T6640.8A, Guidance for Preparing and Processing
- Section 4(f) Policy Paper, March 1, 2005
- Section 4(f) Checklist (FHWA Western Resource Center) FHWA Interim Guidance, August 22, 1994. Applying Section 4(f) on Transportation Enhancement Projects and National Recreation Trail Projects
- FHWA Guidance on Section 4(f) De Minimis

# 8 LIST OF PREPARERS

Charles Smith, Southern California Business Development Leader

Jean Lafontaine, Senior Transportation Environmental Planner

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# **Appendix B.** Title VI Policy Statement

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**DEPARTMENT OF TRANSPORTATION**
OFFICE OF THE DIRECTOR
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SACRAMENTO, CA 94273-0001
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*Flex your power!*
*Be energy efficient!*

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
CINDY McKIM
Director

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# **Appendix C.** Avoidance, Minimization, and/or Mitigation Measure Summary

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| Environmental Commitments Record | | | | | |
|---|---|---|---|---|---|
| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **RELOCATIONS (Section 2.1.3.2 in Environmental Document)** | | | | | |
| **R-1** | In accordance with the federal Uniform Act, compensation for partial acquisition will be provided to eligible recipients. The Uniform Act provides for fair and equitable treatment of persons whose property will be acquired as a result of federally funded projects. The programs and assistance provided under the Uniform Act will be available to all eligible recipients without discrimination. For partial acquisition, compensation will be provided to eligible recipients for the portion of the property acquired. Additional compensation may be provided for any demonstrated damage to the remainder property. If it is determined that the remainder property will have little or no value or utility (i.e., an uneconomic remnant), then the property owner will have the option of either accepting full purchase of the remnant or keeping it. | City | Following PS&E final design and prior to construction | | |
| **R-2** | An encroachment permit application will be submitted to the CPUC and BNSF during PS&E final design. | City | During PS&E final design | | |
| **ENVIRONMENTAL JUSTICE (Section 2.1.3.3 in Environmental Document)** | | | | | |
| **EJ-1** | Actively and effectively engage all segments of the affected community with mechanisms to reduce cultural, language, and economic barriers to participation. | City, Resident Engineer, and Contractor | Following PS&E final design , prior to construction and during construction | | |
| **UTILITIES/EMERGENCY SERVICES (Section 2.1.4 in Environmental Document)** | | | | | |
| **UT-1** | Implement a construction management program that maintains access to and from the project area community through signage, detours, flagmen, etc. | City, Resident Engineer, and Contractor | Prior to any grading or construction activities | | |
| **UT-2** | Coordinate with emergency services providers to ensure that alternative response routes to and from the project area community are in place during construction of the proposed project. | City, Resident Engineer, and Contractor | Prior to any grading or construction activities | | |
| **UT-3** | Consult with local school officials to identify safe pedestrian and vehicular routes for students traveling to and from schools in the project area community during construction of the proposed project. | City, Resident Engineer, and Contractor | Prior to any grading or construction activities | | |
| **UT-4** | The City will coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction. | City, Resident Engineer, and Contractor | Prior to any grading or construction activities | | ` |

| Environmental Commitments Record | | | | | |
|---|---|---|---|---|---|
| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **UT-5** | The potential for disruption or obstruction of emergency services access in the project area to occur as a result of construction activities will be avoided with the preparation of a Traffic Management Plan (TMP) and an Access Management Plan (AMP). These plans will be written by the Department's traffic operations staff. The TMP will include a public awareness campaign to ensure that the public is aware of when and where any traffic closures or detours, or utility disruptions, if any, will occur. The AMP will be designed in coordination with emergency services personnel and local school officials to ensure that the communities within the project vicinity will remain accessible during the construction phase. | City, Resident Engineer, and Contractor | Prior to any grading or construction (prepare) / During any grading or construction (implement) | | |
| **TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES (Section 2.1.5 in Environmental Document)** | | | | | |
| **TR-1** | Notices of the bridge closure, including corresponding vehicle/pedestrian detours, shall be provided and posted at both approaches to the bridge in advance of the scheduled bridge closure. A public awareness campaign and or community outreach/public involvement program will be conducted to ensure that the public is aware of when and where any traffic closures or detours would occur Emergency response personnel and local school officials will be notified at least two weeks in advance of any planned street closures (including partial and/or full closures) or traffic diversions | City | During PS&E final design and construction | | |
| **TR-2** | The City of San Bernardino will make arrangements to provide free bus passes to residents of the area surrounding the bridge. These passes would be valid for travel on Omnitrans buses that serve the area.<br>This will provide mobility to area residents affected by the bridge closure since there will be no pedestrian access across the BNSF rail yard during between mid 2012 and mid 2014. The bus passes will provide alternative, motorized means for pedestrians to travel across the rail yard during that time. | City | During any grading and construction activities | | |
| **TR-3** | A Construction Management Program will be developed and implemented to maintain access to and from the project area community through signage, detours, flagmen, etc. Since construction activities would include construction-related traffic changes from trucks and equipment entering and exiting the project construction area. | City | During PS&E final design and construction | | |

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| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **TR-4** | A Traffic Management Plan (TMP) will be developed and implemented. The TMP will include a requirement to maintain access to all businesses and residences during project construction. Temporary improvements should be implemented prior to closure of the existing bridge and remain in place until the new bridge is opened to traffic. The temporary improvements should be removed and the intersections returned to their existing configurations after the new bridge is opened to traffic. Temporary circulation improvements will be included at the following locations to improve operations:<br>Location #7. 5th Street / H Street<br>• Restripe the northbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.<br>• Change the phasing on the northbound and southbound approaches to split phase.<br>Location #16. 2nd Street / G Street<br>• Restripe the northbound approach to add an additional left-turn lane by narrowing the lanes.<br>• Change the northbound left-turn phasing from permitted + protected to protected.<br>• Restripe the southbound approach as one left-turn lane, one through lane and one exclusive right-turn lane.<br>• Add a southbound right-turn overlap phase.<br>Location #22. Rialto Avenue / G Street<br>• Restripe the eastbound approach as one exclusive left-turn lane, one shared left/through lane and a shared through/right-turn lane.<br>• Change the phasing on the eastbound and westbound approaches to split phase. | City | During PS&E final design and construction | | |
| **TR-5** | Transit Route 1 is adjacent to the southern end of the project and traverses from Mount Vernon Avenue to 2nd Street via Viaduct, 3rd, and J Streets. Since the bridge closure would be on Mount Vernon Avenue between 2nd and 4th Streets, Transit Route 1 may be re-routed to 3rd Street via West King Street, North Giovanola Avenue, and 2nd Street, eliminating a small section of the route along Viaduct Street. To temporarily re-route Transit Route 1, coordination with Omnitrans for input on the TMP would occur. | City | During PS&E final design and construction | | |
| **CULTURAL RESOURCES (Section 2.1.7 in Environmental Document)** | | | | | |
| **MOA CR-1** | Prior to the start of any work that could adversely affect any characteristics that qualify the Mount Vernon Avenue Bridge as an historic property, the Department shall ensure that the recordation measures specified in Section A of the MOA are completed. | City | Incorporate recommendations during PS&E final design and implement during construction | | |

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| **MOA CR-2** | The City shall take a large-format (4" by 5" or larger negative size) photographs showing the Mount Vernon Avenue Bridge in context as well as details of its historic engineering features. Photographs shall be processed for archival permanence in accordance with the Historic American Engineering Record (HAER) photographic specifications. Views of the Mount Vernon Avenue Bridge shall include: (1) Contextual views showing the bridge in its setting; (2) Elevation views; (3) Views of the bridge's approaches and abutments; and (4) Detail views of significant engineering and design elements. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **MOA CR-3** | The City shall make a reasonable and good faith effort to locate historic construction drawings for the Mount Vernon Avenue Bridge. If these drawings are located, the City shall photographically reproduce plans, elevations and selected details form these drawings in accordance with HAER photographic specifications. If they are legible in this format, reduced size 8 ½" by 11") copies of the construction drawings may be included as pages of the report cited in subsection A.3. of the MOU rather than photographed and included as photographic documentation. The City shall promptly notify the Department if historic construction drawings for Bridge #54C-0066 cannot be located. In that event, the requirements of this paragraph shall not apply. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **MOA CR-4** | A written historical and descriptive report for the Mount Vernon Avenue Bridge will be completed. This report will provide a physical description of the bridge, discuss its construction and its significance under applicable National Register criteria, and address the historical context for its construction following the format and instructions in the September 1993 National Parks Service (NPS) HAER Guidelines for Preparing Written Historical and Descriptive Data guidelines for written documentation. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **MOA CR-5** | Upon completion, copies of the documentation prescribed in subsection A.3 of the MOA shall be retained by the Department, District 8, and offered to the California Room of the City's Feldhym Library. | Resident Engineer and Contractor | During all ground-disturbing and construction activities | | |
| **MOA CR-6** | The Department shall ensure that the City constructs the replacement bridge in accordance with a design developed in consultation with the SHPO and submitted to the SHPO for comments, to minimize the indirect visual impact (profile, scale, color, and material) of the replacement bridge on the setting of the adjacent National Register listed historic property, the Atchison, Topeka and Santa Fe Passenger and Freight Depot (Santa Fe Depot). The proposed bridge replacement design is depicted in Attachment B of the MOA and simulations for the replacement are included in Attachment C of the MOA. In addition, existing photographs of the Mount Vernon Avenue Bridge are located in Attachment D of the MOA. | Resident Engineer, Contractor, the Department | During all ground-disturbing and construction activities | | |
| **MOA CR-7** | The Department in consultation with the SHPO, shall ensure that the replacement bridge will be designed to included architectural details (bridge railing, lighting, concrete abutments, stairways) in order to convey the character-defining elements of the original historic structure and to be visually compatible with the adjacent Santa Fe Depot. | City and the Department | Incorporate recommendations during PS&E final design and implement during construction | | |

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| **MOA CR-8** | The Department shall ensure that the City replace any landscape elements (fan palm trees – Washingtonia robusta), which are 50 years or older and contribute to the historic setting of the bridge, which were removed as a result of the bridge replacement project. Appropriate replacement trees should be planted in those planned landscaped areas northwest and southeast of the bridge alignment. | City and the Department | Incorporate recommendations during PS&E final design and implement during construction | | |
| **Standard CR-A** | If cultural materials 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. | Resident Engineer and Contractor | During all ground-disturbing and construction activities | | |
| **Standard CR-B** | If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact District 8 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. | Resident Engineer and Contractor | During all ground-disturbing and construction activities | | |
| **Water Quality and Stormwater Runoff (Section 2.2.1 in Environmental Document)** | | | | | |
| **WQ-1** | During the PS&E final design phase of the project, a Geotechnical Report would be prepared to determine if groundwater would be impacted. If groundwater would be impacted, then it would be tested to determine if it's contaminated. | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | Incorporate recommendations during PS&E final design and implement during construction | | |
| **WQ-2** | The project will have an addition of more than 5,000 square feet of impervious surface; therefore, in accordance with RWQCB Order Number R8-2002-0012, NPDES Permit No. CAS618036, a Water Quality Management Plan (WQMP) will be necessary to establish post construction Best Management Practices (BMP's). | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | Incorporate recommendations during PS&E final design and implement during construction | | |
| **WQ-3** | A SWPPP, which will identify water quality BMPs, will be required to address short-term construction effects associated with soil erosion and discharge of other construction-related pollutants. | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | Incorporate recommendations during PS&E final design and implement during construction | | |
| **Geology/Soils/Seismicity/Topography (Section 2.2.2 in Environmental Document)** | | | | | |
| **GEO-1** | Detailed earthwork recommendations will be provided in the design geotechnical report, and these recommendations will be incorporated into the project specifications. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **GEO-2** | The depth of the groundwater table below the site, and the potential for liquefaction, will be further evaluated during the PS&E final design phase. | City | Incorporate recommendations during PS&E final design and implement during construction | | |

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| **GEO-3** | Erosion control measures will also include the use of berms to direct runoff away from exposed soils and slopes, and proper grading techniques will be utilized. | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | During all grading and construction activities | | |
| **GEO-4** | For fill slopes, surface water runoff shall be directed to suitable outlets to reduce the likelihood of surficial erosion of the slopes. | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | During all grading and construction activities | | |
| **GEO-5** | Slopes shall be planted with vegetation as soon as feasible after the completion of grading to reduce the amount of erosion on the slope face. | Resident Engineer and Contractor | During all grading and construction activities | | |
| **GEO-6** | A 3-m (10-foot) buffer, using fencing or flags, will be established around the drainage channel. Appropriate erosion or runoff controls will be implemented to prevent siltation effects on the nearby wetlands. | City (during PS&E final design) / Resident Engineer and Contractor (during construction) | During all grading and construction activities | | |
| **GEO-7** | Due to its proximity to the San Andreas Fault, the bridge would be seismically designed to consider a maximum credible earthquake of magnitude of 8.0 on the Richter scale. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **HAZARDOUS WASTE/MATERIALS (Section 2.2.4 in Environmental Document)** | | | | | |
| **HAZ-1** | Work on BNSF property requires the completion and submittal of fees for an environmental access permit submitted to the Permit Department of BNSF. | Resident Engineer and Contractor | During PS&E final design. | | |
| **HAZ-2** | Due to the possibility that contaminated groundwater may be encountered, a Geotechnical Report will be prepared determine if groundwater will be impacted. If groundwater will be impacted, then it will be tested to determine if it's contaminated. | Resident Engineer and Contractor | During PS&E final design. | | |
| **HAZ-3** | If contaminated groundwater is encountered, a contaminated groundwater contingency plan should be implemented and should include procedures for segregation, sampling, and chemical analysis. Contaminated groundwater must be disposed of in accordance with dewatering requirements per the National Pollutant Discharge Elimination System (NPDES) process. In the event that disposal requirements are not required as part of the NPDES process, contaminated groundwater will be profiled for disposal and will be transported with appropriate hazardous or non-hazardous waste manifests by a state-certified hazardous material hauler to a state-certified disposal or recycling facility licensed to accept and treat the type of waste indicated by the profiling process. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |

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| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **HAZ-4** | If demolition construction activities will impact soil beneath the two former gasoline stations, soil samples should be collected and analyzed for petroleum hydrocarbons and VOCs during the PS&E final design phase. | Resident Engineer and Contractor | During PS&E final design. | | |
| **HAZ-5** | For work in the immediate vicinity of Mount Vernon Avenue Bridge, soil (and groundwater if encountered) beneath the bridge within the proposed demolition and construction zones should be sampled and analyzed for chemicals of concern (COCs) including petroleum hydrocarbons, metals, volatile organic compounds (VOCs), polychlori-nated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and chlorinated herbicides. Testing should be done during the PS&E final design phase to reduce the impact on BNSF operations. The testing should be done in one mobilization as requested by BNSF. | Resident Engineer and Contractor | During PS&E final design. | | |
| **HAZ-6** | For work in the immediate vicinity of the shoofly track area, soil (and groundwater if encountered) beneath the proposed shoofly track area should be sampled and analyzed for petroleum hydrocarbons, metals, VOCs, PCBs, SVOCs, and chlorinated herbicides. All testing should be done during the PS&E final design phase to reduce the impact on BNSF operations. The testing should be done in one mobilization as requested by BNSF. | Resident Engineer and Contractor | During PS&E final design. | | |
| **HAZ-7** | A soil monitoring plan should be prepared prior to construction and should be implemented during all phases of construction. Disturbed soils should be monitored for visual evidence of contamination (e.g., staining or discoloration). If visual evidence of contamination is observed, the soil should be monitored for the presence of Volatile Organic Compounds (VOCs) using appropriate field instruments such as organic vapor measurement with photoionization detectors (PIDs) or flame ionization detectors (FIDs). | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |
| **HAZ-8** | If the monitoring procedures indicate the possible presence of contaminated soil, a contaminated soil contingency plan should be implemented and should include procedures for segregation, sampling, and chemical analysis of soil. Contaminated soil will be profiled for disposal and will be transported with appropriate hazardous or non-hazardous waste manifests by a state-certified hazardous material hauler to a state-certified disposal or recycling facility licensed to accept and treat the type of waste indicated by the profiling process. The contaminated soil contingency plan should be developed and in place during all construction activities. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |
| **HAZ-9** | A hazardous materials contingency plan should be prepared to address the potential for discovery of unidentified USTs, septic systems, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes encountered during construction. This contingency plan should address UST decommissioning, field screening and materials testing methods, mitigation and contaminant management requirements, and health and safety requirements. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |

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| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **HAZ-10** | The identified ACMs will not be disturbed. Prior to renovation or demolition work that will disturb identified ACMs, a licensed Cal/OSHA-Certified Asbestos Consultant and abatement removal contractor should remove the ACMs. A Notification will be sent to South Coast Air Quality Management District (SCAQMD) 10 working days prior to any ACM removal or demolition activities as per Rule 1403. In addition the Notification will include applicable fees as per Rule 301. | Resident Engineer and Contractor | Prior to demolition activities | | |
| **HAZ-11** | The identified LBPs will not be disturbed. Any LBPs in a non-intact condition will be abated and the component properly encapsulated. Prior to demolition work that will disturb identified LBPs, a licensed lead abatement removal contractor will remove the LBPs. | Resident Engineer and Contractor | Prior to demolition activities | | |
| **HAZ-12** | Applicable laws and regulations will be followed, including those provisions requiring notification to building occupants, renovation contractors, and workers of the presence of asbestos and LBP. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |
| **HAZ-13** | Per Caltrans requirements, projects involving the removal of yellow traffic striping, thermoplastic paint, will be performed in accordance with Caltrans Department Standard Special Provision (SSP) XE 14-001. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |
| **HAZ-14** | The OSHA regulations for construction found in Title 29 CFR part 1926 include occupational exposure to lead under the standard number 1926.62. Additional requirements are found in the California standard 8 CCR Section 1532.1. Any employer covered by these standards is obligated to initially determine if any employee may be exposed to lead at or above the action level (29 CFR 1926.62(d)(1)(i) and 8 CCR 1532.1(d)). Additionally, the employer is obligated to prepare a project specific Lead Compliance Plan (LCP) in accordance with 29 CFR 1926.62 (e)(2). It is recommended that a LCP be developed and implemented for construction related activities associated with this project site. | Resident Engineer and Contractor | Prior to demolition or grading activities, and during all excavation and construction activities | | |
| **AIR QUALITY (Section 2.2.5 in Environmental Document)** | | | | | |
| **AQ-1** | The identified ACMs will not be disturbed. Prior to renovation or demolition work that will disturb identified ACMs, a licensed Cal/OSHA-Certified Asbestos Consultant and abatement removal contractor should remove the ACMs. A Notification will be sent to South Coast Air Quality Management District (SCAQMD) 10 working days prior to any ACM removal or demolition activities as per Rule 1403. In addition the Notification will include applicable fees as per Rule 301. | Resident Engineer and Contractor | Prior to renovation or demolition activities | | |
| **AQ-2** | Implementation of Construction Minimization Measures to Reduce Fugitive Dust Emissions. Even though the project's emissions will not exceed the SCAQMD's significance thresholds for construction, as required by the SCAQMD's Fugitive Dust Rule 403, the project proponent must implement the applicable PM10-reducing construction practices shown in Table 2-15 during construction of the proposed project.<br>Table 2-15. List of Best Available Control Measures from SCAQMD Fugitive Dust Rule 403 | Resident Engineer and Contractor | Prior to ground disturbance, renovation or demolition activities | | |

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| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| | **Backfilling**<br>*Control Measure*<br>• Stabilize backfill material when not actively handling; and<br>• Stabilize backfill material during handling; and<br>• Stabilize soil at completion of activity.<br>*Guidance*<br>• Mix backfill soil with water prior to moving.<br>• Dedicate water truck or high capacity hose to backfilling equipment.<br>• Empty loader bucked slowly so that no dust plumes are generated.<br>• Minimize drop height from loader bucket.<br>**Clearing and Grading**<br>*Control Measure*<br>• Maintain stability of soil through prewatering of site prior to clearing/grubbing; and<br>• Stabilize soil during clearing and grubbing activities; and<br>• Stabilize soil immediately after clearing and grubbing activities.<br>*Guidance*<br>• Maintain live perennial vegetation where possible.<br>• Apply water in sufficient quantity to prevent generation of dust plumes.<br>**Clearing forms**<br>*Control Measure*<br>• Use water spray to clear forms; or<br>• Use sweeping and water spray to clear forms; and<br>• Use vacuum system to clear forms.<br>*Guidance*<br>• Use of high-pressure air to clear forms may cause exceedance of Rule requirements.<br>**Crushing**<br>*Control Measure*<br>• Stabilize surface soils prior to operation of support equipment; and<br>• Stabilize material after crushing.<br>*Guidance*<br>• Follow permit conditions for crushing equipment.<br>• Prewater material prior to loading into crusher.<br>• Monitor crusher emissions opacity.<br>• Apply water to crushed material to prevent dust plumes.<br>**Cut and fill**<br>*Control Measure*<br>• Prewater soils prior to cut and fill activities; and<br>• Stabilize soils during and after cut and fill activities.<br>*Guidance*<br>• For large sites, prewater with sprinklers or water trucks and allow time for penetration.<br>• Use water trucks/pulls to water solids to depth of cut prior to subsequent | | | | |

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| | cuts.<br>**Demolition-mechanical/manual**<br>*Control Measure*<br>• Stabilize wind erodible surfaces to reduce dust; and<br>• Stabilize surface soils where support equipment and vehicles will operate; and<br>• Stabilize loose soil and demolition debris; and<br>• Comply with SCAQMD Rule 1403.<br>*Guidance*<br>• Apply water in sufficient quantities to prevent the generation of visible dust plumes.<br>**Disturbed soils**<br>*Control Measure*<br>• Stabilize disturbed soil throughout the construction site; and<br>• Stabilize disturbed soil between structures.<br>*Guidance*<br>• Limit vehicular traffic and disturbances on soils where possible.<br>• If interior block walls are planned, install as early as possible.<br>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.<br>**Earth-moving activities**<br>*Control Measure*<br>• Preapply water to depth of proposed cuts; and<br>• Reapply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and<br>• Stabilize solids once earth-moving activities are complete.<br>*Guidance*<br>• Grade each project phase separately, timed to coincide with construction phase.<br>• Upwind fencing can prevent material movement on site.<br>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.<br>**Importing/exporting of bulk materials**<br>*Control Measure*<br>• Stabilize material while loading to reduce fugitive dust emissions; and<br>• Maintain at least 6 inches of freeboard on haul vehicles; and<br>• Stabilize material while transporting to reduce fugitive dust emissions; and<br>• Stabilize material while unloading to reduce fugitive dust emissions; and<br>• Comply with Vehicle Code Section 23114.<br>*Guidance*<br>• Use tarps or suitable enclosures on haul trucks.<br>• Check belly-dump truck seals regularly and remove any trapped rocks to | | | | |

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| | prevent spillage.<br>• Comply with track out prevention/mitigation requirements.<br>• Provide water while loading and unloading to reduce visible dust plumes.<br>**Landscaping**<br>*Control Measure*<br>• Stabilize soils, materials, slopes.<br>*Guidance*<br>• Apply water to materials to stabilize.<br>• Maintain materials in a crusted condition.<br>• Maintain effective cover over materials.<br>• Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes.<br>• Hydroseed prior to rainy season.<br>**Road Shoulder Maintenance**<br>*Control Measure*<br>• Apply water to unpaved shoulders prior to clearing; and<br>• Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.<br>*Guidance*<br>• Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs.<br>• Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.<br>**Screening**<br>*Control Measure*<br>• Prewater material prior to screening; and<br>• Limit fugitive dust emissions to opacity and plume length standards; and<br>• Stabilize material immediately after screening.<br>*Guidance*<br>• Dedicate water truck or high capacity hose to screening operation.<br>• Drop material through the screen slowly and minimize drop height.<br>• Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.<br>**Staging areas**<br>*Control Measure*<br>• Stabilize staging areas during use; and<br>• Stabilize staging area soils at project completion.<br>*Guidance*<br>• Limit size of staging area.<br>• Limit vehicle speeds to 15 miles per hour.<br>• Limit number and size of staging area entrances/exits.<br>**Stockpiles/Bulk Material/Handling**<br>*Control Measure* | | | | |

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| | • Stabilize stockpiled materials.<br>• Stockpiles within 100 yards of offsite occupied buildings must not be greater than 8 feet in height, or must have a road bladed to the top to allow water truck access, or must have an operational water irrigation system that is capable of complete stockpile coverage<br>*Guidance*<br>• Add or remove material from the downwind portion of the storage pile.<br>• Maintain storage piles to avoid steep sides or faces.<br>**Traffic areas for construction activities**<br>*Control Measure*<br>• Stabilize all off-road traffic and parking areas; and<br>• Stabilize all haul routes; and<br>• Direct construction traffic over established haul routes.<br>*Guidance*<br>• Apply gravel/paving to all haul routes as soon as possible to all future roadway areas.<br>• Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.<br>**Trenching**<br>*Control Measure*<br>• Stabilize surface soils where trencher or excavator and support equipment will operate; and<br>• Stabilize solids at the completion of trenching activities.<br>*Guidance*<br>• Prewatering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pretrench to 18 inches, then soak soils via the pretrench and resume trenching.<br>• Washing mud and soils from equipment at the conclusion of trenching activities can prevent crushing and drying of soil on equipment.<br>**Truck loading**<br>*Control Measure*<br>• Prewater material prior to loading; and<br>• Ensure that freeboard exceeds 6 inches (CVC 23114).<br>*Guidance*<br>• Empty loader bucket such that no visible dust plumes are created.<br>• Ensure that the loader bucket is close to the truck to minimize drop height when loading.<br>**Turf Overseeding**<br>*Control Measure*<br>• Apply sufficient water immediately prior to conducing turf vacuuming activities to meet opacity and plume length standards; and<br>• Cover haul vehicles prior to exiting the site.<br>*Guidance*<br>• Haul waste material immediately off site. | | | | |

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| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| | **Unpaved roads/parking lots**<br>*Control Measure*<br>• Stabilize soils to meet the applicable performance standards; and<br>• Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.<br>*Guidance*<br>• Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements<br>**Vacant Land**<br>*Control Measure*<br>• In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures<br>*Guidance*<br>• N/A | | | | |
| **NOISE (Section 2.2.6 in Environmental Document)** | | | | | |
| **N-1** | Retaining walls will be landscaped, potentially with creeping fig, to attenuate any secondary noise reflection along both sides of the north bridge approach between Kingman Avenue and West 4th Street which accommodate an approximate 9.87 and 1.43 foot change in roadway elevation. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **N-2** | To minimize potential construction noise effects, the construction contractor will adhere to BMPs to minimize construction noise levels, including the following BMP:s:<br>1. Construction activities adjacent to residential units will be limited as necessary to prevent noise impacts. (14.8.1, City of San Bernardino General Plan).<br>2. Construction activities will employ feasible and practical techniques that minimize the noise impacts on adjacent uses. (14.8.2, City of San Bernardino General Plan).<br>3. No person shall be engaged or employed, or cause any other person to be engaged or employed, in any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours of 7:00 a.m. and 8:00 p.m. (San Bernardino Municipal Code Section 8.54.070) (Ord. MC-1246, 5-21-07).<br>4. The operation or use between the hours of 10 p.m. and 7 a.m. of any pile driver, steam shovel, pneumatic hammers, derrick, steam or electric hoist, power driven saw, or any other tool or apparatus, the use of which is attended by loud and excessive noise, is prohibited, except with the | Resident Engineer and Contractor | During all grading and construction activities | | |

| Environmental Commitments Record | | | | | |
|---|---|---|---|---|---|
| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| | approval of the Mayor and Common Council (San Bernardino Municipal Code Section 8.54.020(L)).<br>5. The creation of loud and excessive noise in connection with the loading or unloading of motor trucks and other vehicles is prohibited (San Bernardino Municipal Code Section 8.54.020(I)).<br>6. The unnecessary or excessive blowing of whistles, sounding of horns, ringing of bells or use of signaling devices by operators of railroad locomotives, motor trucks, and other transportation equipment is prohibited (San Bernardino Municipal Code Section 8.54.020(H)).<br>7. The shouting and crying of peddlers, hawkers and vendors which disturbs the peace and quiet of any considerable number of persons or neighborhood is prohibited (San Bernardino Municipal Code Section 8.54.020(J)).<br>8. All construction activities shall be conducted in accordance with Department provisions in 14-8.02 (Noise Control), of the Standard Specifications and Special Provisions (SSP) S5-310, in order to ensure that noise generated during construction activities is minimized. The SSP will be edited specifically for this project during the PS&E final design phase. This includes the provisions that the contractor shall ensure that all equipment shall have sound-control devices that are no less effective than those provided on the original equipment, and no equipment shall have an unmuffled exhaust.<br>9. Adherence to local ordinances and codes relating to construction equipment, sound levels, and hours of operation is required.<br>10. Installation and maintenance of effective mufflers on construction equipment is required.<br>11. Positioning equipment and staging areas as far from residences as possible is required.<br>12. Unnecessary idling of equipment is prohibited.<br>13. These BMP's will be incorporated into either the standard specifications or special provisions which are prepared for the construction contractor during PS&E final design. | | | | |
| **BIOLOGICAL RESOURCES (SECTION 2.3 IN ENVIRONMENTAL DOCUMENT)** | | | | | |
| **BIO-1** | Work on the bridge will take place only between October 1 and April 1 (non-breeding season) unless absence of California western mastiff bat is confirmed on the project site within 1 month of initial project construction. This minimizes the risk of destruction or failure of a large, active maternity colony. | City | Survey to be completed within 30 days prior to the commencement of construction | | |
| **BIO-2** | Prior to any work that may result in potential disturbance to bats during the non-breeding season, measures will be taken to ensure any California western mastiff bats are passively relocated from those areas of the bridge that will be physically modified and where mortality of bats is a concern. Measures may include excluding access to roost sites under the bridge as conducted under the direction and concurrence of a qualified bat biologist. | City | Prior to the commencement of construction | | |

| Environmental Commitments Record | | | | | |
|---|---|---|---|---|---|
| **No.** | **Task and Brief Description** | **Responsible Party** | **Timing / Phase** | **Action Taken to Comply with Task** | **Date** |
| **BIO-3** | For the bridge retrofit/rehabilitation alternative, it may be feasible to replace any lost habitat for California western mastiff bat with artificial roosts during construction efforts, minimizing the need for relocation from the area. A qualified bat biologist must approve the design and placement of the artificial roosts. The feasibility of this measure may vary with details and timing of project construction. Supplemental concrete panels or other types of bat roost structures should retain as closely as possible the original configuration of occupied crevices, including widths. If California western mastiff bat were known to be present, the new bridge design or retrofit design should incorporate permanent structural features that provide such habitat as well. | City | Incorporate recommendations during PS&E final design and implement during construction | | |
| **BIO-4** | Bared soil will be landscaped with the department's recommended seed mix of locally adapted species to preclude the invasion of noxious weeds. The use of site-specific materials, which are adapted to local conditions, increases the likelihood that revegetation will be successful and maintains the genetic integrity of the local ecosystem. | Resident Engineer and Contractor | Following all ground-disturbing or construction activities | | |
| **BIO-5** | Seed purity shall be certified by a planting seed labeled under the California Food and Agricultural Code, or that has been tested within 1 year by a seed laboratory certified by the Association of Official Seed Analysts or by a seed technologist certified by the Society of Commercial Seed Technologists. | Resident Engineer and Contractor | During all ground-disturbing or construction activities | | |
| **BIO-6** | Before mobilizing to arrive at the site and before leaving the site, construction equipment will be cleaned of mud and other debris that may contain invasive plants and/or seeds and inspected to reduce the potential spreading of noxious weeds. | Resident Engineer and Contractor | During all ground-disturbing or construction activities | | |
| **BIO-7** | Trucks with loads carrying vegetation shall be covered and vegetative materials removed from the site shall be disposed of in accordance with all applicable laws and regulations. | Resident Engineer and Contractor | During all ground-disturbing or construction activities, and following construction | | |

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# **Appendix D.** List of Acronyms

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# **Appendix D.** List of Acronyms

| | |
|---|---|
| ACHP | Advisory Council on Historic Preservation |
| ACM | asbestos-containing material |
| ADA | Americans with Disabilities Act |
| ADT | Average Daily Traffic |
| AMP | Access Management Plan |
| AMR | American Medical Response |
| AOE | Area of Effect |
| APE | Area of Potential Effect |
| AQMP | Air Quality Management Plan |
| AST | above-ground storage tank |
| ASTM | American Society for Testing and Materials |
| BMP | best management practice |
| BNSF | Burlington Northern Santa Fe |
| bridge | Mount Vernon Avenue Bridge |
| Bridge No. 54C-0066 | Mount Vernon Avenue Bridge |
| CAAA | Clean Air Act Amendments |
| CAAQS | California Ambient Air Quality Standards |
| Caltrans | California Department of Transportation |
| CDFG | California Department of Fish and Game |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act of 1980 |
| CERFA | Community Environmental Response Facilitation Act of 1992 |
| CFR | Code of Federal Regulations |
| CIA | Community Impact Assessment |
| CIDH | Cast-in-Drilled-Hole Piles |
| City | City of San Bernardino |
| CMP | corrugated metal pipe |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| CO | Commercial Office |
| COCs | chemicals of concern |
| Corps | U.S. Army Corps of Engineers |
| County | County of San Bernardino |
| CPUC | California Public Utilities Commission |
| CRHR | California Register of Historic Resources |
| CWA | Clean Water Act |
| dB | decibels |
| Department | California Department of Transportation |
| Department local office | Caltrans District 8 |
| Detour Analysis | Pedestrian and Vehicular Detour Analysis |

| | |
|---|---|
| DHS | California Department of Health Services |
| DIB | Design Information Bulletin |
| DOF | Department of Finance |
| DTSC | Department of Toxic Substances Control |
| EA | Environmental Assessment |
| EBL | Eligible Bridge List |
| EHS | San Bernardino County Environmental Health Services |
| EMT | Emergency Medical Technician |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FOE | Finding of Effect |
| FAE | Finding of Adverse Effect |
| FEMA | Federal Emergency Management Agency |
| FESA | Federal Endangered Species Act |
| FHWA | Federal Highway Administration |
| FIFRA | Federal Insecticide, Fungicide, and Rodenticide Act |
| FIRM | Flood Insurance Rate Maps |
| FirstSearch | Environmental FirstSearch |
| FO | Functionally Obsolete |
| FONSI | Finding of No Significant Impact |
| FSTIP | Federal Statewide Transportation Improvement Program |
| FTA | Federal Transit Administration |
| GC-1 | General Commercial-1 |
| GC-2 | General Commercial-2 |
| HABS | Historic American Building Survey |
| HAER | Historic American Engineering Record |
| HBRR | Highway Bridge Replacement and Rehabilitation Program |
| HPSR | Historic Property Survey Report |
| I-10 | Interstate 10 |
| I-210 | Interstate 210 |
| I-215 | Interstate 215 |
| IH | Industrial Heavy |
| IL | Industrial Light |
| Inco | Inco Service Station |
| ISA | Initial Site Assessment |
| ISTEA | Intermodal Surface Transportation Efficiency Act of 1991 |
| kg | kilograms |
| kph | kilometers per Hour |
| LBP | lead-based paint |
| Leq | equivalent noise level |
| LOS | level of service |
| LRP | Long-Range Transportation Plan |
| LUST | leaking underground storage tank |

| | |
|---|---|
| Metrolink | Southern California Regional Rail Authority |
| mg | milligram |
| MLD | Most Likely Descendent |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| mph | miles per hour |
| MPO | Metropolitan Planning Organization |
| NAAQS | National Ambient Air Quality Standards |
| NAC | Noise Abatement Criteria |
| NAHC | Native American Heritage Commission |
| NEPA | National Environmental Policy Act |
| NES | Natural Environment Study |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| NO2 | nitrogen dioxide |
| NOAA | National Oceanic and Atmospheric Administration |
| NOAA Fisheries | National Marine Fisheries Service |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| O3 | Ozone |
| OSHA | Occupational Safety and Health Act |
| PA | Programmatic Agreement |
| PAC | Project Area Committee |
| Pb | lead-based paint |
| PCBs | polychlorinated biphenyls |
| PCE | Passenger Car Equivalent |
| PCI | paint condition index |
| PDT | Project Development Team |
| PFO | Potential for Occurrence |
| PFR | Preliminary Foundation Report |
| PM | particulate matter |
| ppm | parts per million |
| PS&E | Plans, Specifications, and Estimates |
| RAP | Relocation Assistance Program |
| RCRA | Resource Conservation and Recovery Act |
| Region 8 | RWQCB, Santa Ana Region |
| ROG | reactive organic gases |
| RS | Residential Suburban |
| RTIP | 2008 Cost-constrained Regional Transportation Improvement Plan |
| RTP | 2008 Regional Transportation Plan |
| RWQCB | Regional Water Quality Control Board |
| SAFETEA-LU | Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users |

| | |
|---|---|
| SANBAG | San Bernardino Associated Governments |
| Santa Fe Depot | Atchison, Topeka and Santa Fe Passenger and Freight Depot |
| SB36X | Seismic Safety Retrofit Program |
| SBCUSD | San Bernardino City Unified School District |
| SBFD | San Bernardino Fire Department |
| SBMWD | San Bernardino Municipal Water Department |
| SBPD | City of San Bernardino Police Department |
| SCAB | South Coast Air Basin |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SD | Structurally Deficient |
| shoofly tracks | temporary railroad tracks |
| SHPO | State Office of Historic Preservation |
| SIP | State Implementation Plan |
| SLIC | spills, leaks, investigations, and cleanup |
| SO2 | sulfur dioxide |
| Sound32 | Department version of the FHWA Noise Prediction Model |
| SR | Sufficiency Rating |
| SR 30 | State Route 30 |
| SR 330 | State Route 330 |
| SRA | Source Receptor Area |
| STAMINA 2.0/OPTIMA | FHWA Noise Prediction Model |
| State Bridge No. 54C-0066 | Mount Vernon Avenue Bridge |
| SWDR | stormwater data report |
| SWLF | solid waste landfill sites |
| SWPPP | stormwater pollution prevention plan |
| SWRCB | State Water Resources Control Board |
| TCRP | Traffic Congestion Relief Program |
| TEA-21 | Transportation Equity Act for the 21st Century |
| TIP | Transportation Improvement Program |
| TMP | traffic management plan |
| TNAP | traffic noise analysis protocol |
| TSCA | Toxic Substances Control Act |
| Uniform Act | Uniform Relocation Assistance and Property Acquisition Act |
| UPRR | Union Pacific Railroad |
| U.S.C. | United States Code |
| USDOT | U.S. Department of Transportation |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | underground storage tank |
| VES | vapor extraction system |
| WDID | waste discharge identification number |

| | |
|---|---|
| WQMP | Water Quality Management Plan |
| µg/m3 | micrograms per cubic meter |

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# **Appendix E.** List of Technical Studies/References

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# **Appendix F.** Draft Memorandum of Agreement

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**MEMORANDUM OF AGREEMENT**
**BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER REGARDING THE REPLACEMENT OF THE MOUNT VERNON AVENUE BRIDGE, SAN BERNARDINO COUNTY, CALIFORNIA**

**WHEREAS,** the Federal Highway Administration (FHWA) has assigned and the California Department of Transportation (Caltrans) has assumed FHWA responsibility for the 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 replacement of the Mount Vernon Avenue Bridge (#54C–0066) located on Mount Vernon Avenue between 2nd and 5th Street (Undertaking), in the City of San Bernardino, San Bernardino County, California, will have an adverse effect on the Mount Vernon Avenue Bridge, which Caltrans has determined, in conclusion with the State Historic Preservation Officer (SHPO), to be eligible for inclusion in the National Register of Historic Places (National Register) and therefore, a historic property as defined at 36 CFR§800.16 (l)(1);

**WHEREAS,** Caltrans has consulted with the SHPO pursuant to stipulation 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 regulation that implements Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Section 470f), as amended, regarding the Undertaking's effect on the historic property, and has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding pursuant to 36 CFR§800.16(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 Mount Vernon Avenue Bridge during the Undertaking's implementation, and has further determined that it will resolve the adverse effect of the Undertaking on the subject historic property through the execution and implementation of this MOA; and

**WHEREAS,** Caltrans District 8 (District 8) and the City of San Bernardino (City) have participated in the consultation and has been invited to concur in this MOA; 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 effects of the Undertaking on historic properties, and 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 measures are implemented:

## I. AREA OF POTENTIAL EFFECTS

A. The Area of Potential Effects (APE) for the Undertaking is depicted in Attachment A of the Finding of Effect (FOE). The APE was established to include all cultural resources that would be directly or indirectly affected by the Undertaking. The APE included the maximum existing and proposed right-of-way, project construction easements (temporary and permanent), staging areas, and temporary or permanent changes in access (ingress or egress).

B. If modifications to the Undertaking subsequent to the execution of this MOA necessitate the revision of the APE, Caltrans will consult with District 8 and the SHPO to facilitate mutual agreement on the subject revisions. If Caltrans, District 8 and the SHPO cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with Stipulation IV.D below. If Caltrans, District 8 and the SHPO reach mutual agreement on the proposed revisions, Caltrans will submit a final map of the revisions, consistent with the requirements of stipulation VII1.A and attachment XVI.A 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 Mt. Vernon Avenue Bridge as an historic property, Caltrans shall ensure that the recordation measures specified in section A of this stipulation are completed.

1. The City shall take large-format (4" by 5" or larger negative size) photographs showing the Mt. Vernon Avenue Bridge in context as well as details of its historic engineering features. Photographs shall be processed for archival permanence in accordance with the Historic American Engineering Record (HAER) photographic specifications. Views of the Mt. Vernon Avenue Bridge shall include:

   a. Contextual views showing the bridge in its setting;

   b. Elevation views;

c. Views of the bridge's approaches and abutments;

d. Detail views of significant engineering and design elements.

2. The City shall make a reasonable and good faith effort to locate historic construction drawings for the Mt. Vernon Avenue Bridge. If these drawings are located, the City shall photographically reproduce plans, elevations and selected details from these drawing in accordance with HAER photographic specifications. If they are legible in this format, reduced size (8 1/2" by 11") copies of construction drawings may be included as pages of the report cited in subsection A.3 of this stipulation rather than photographed and included as photographic documentation. The City shall promptly notify Caltrans if historic construction drawings for Bridge #53-0739 cannot be located. In that event, the requirements of this paragraph shall not apply.

3. A written historical and descriptive report for the Mt. Vernon Avenue Bridge will be completed. This report will provide a physical description of the bridge, discuss its construction and its significance under applicable National Register criteria, and address the historical context for its construction following the format and instructions in the September 1993 National Parks Service (NPS) *HAER Guidelines for Preparing Written Historical and Descriptive Data* guidelines for written documentation.

4. Upon completion, copies of the documentation prescribed in subsection A.3 of this stipulation shall be retained by Caltrans District 8, and offered to California Room of the City's Feldhym Library

B. Caltrans shall ensure that the City constructs the replacement bridge in accordance with a design developed in consultation with the SHPO and submitted to the SHPO for comments, to minimize the indirect visual impact (profile, scale, color, and material) of the replacement bridge on the setting of the adjacent National Register listed historic property, the Atchison, Topeka and Santa Fe Passenger and Freight Depot (Santa Fe Depot). The proposed bridge replacement design is depicted in Attachment B and simulations for the replacement are included in Attachment C. In addition, existing photographs of the Mt. Vernon Avenue Bridge are located in Attachment D.

C. Caltrans, in consultation with the SHPO, shall ensure that the replacement bridge will be designed to include architectural details (bridge railing, lighting, concrete abutments, stairways) in order to convey the character-defining elements of the original historic structure and to be visually compatible with the adjacent Santa Fe Depot.

D. Caltrans shall ensure that the City replace any landscape elements (fan palm trees –

*Washington Filifera and Washingtonia robusta*), which are 50 years or older and contribute to the historic setting of the bridge, which were removed as a result of the bridge replacement project. Appropriate replacement trees should be planted in those planned landscaped areas northwest and southeast of the bridge alignment.

## III. DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines after the 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).

## IV. ADMINISTRATIVE PROVISIONS

### A. Standards

1. Professional Qualifications. All activities prescribed by Stipulations I.B, II., and III of this MOA shall be carried out under the authority of Caltrans or under the direct supervision of a person or persons meeting at a minimum the Secretary of Interior's Professional Qualifications Standards (PQS; 48 FR 44738-39, September 29, 1983) in the appropriate disciplines. However, nothing in this stipulation may be interpreted to preclude Caltrans or any agent or contractor thereof from using the properly supervised services of person who do not meet the PQS.

2. Historic Preservation Standards. Written documentation of activities prescribed by Stipulations I.B, II.A, and II.B of this MOA shall conform to the *Secretary of the Interior's Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740) as well as to applicable standards and guidelines established by the SHPO.

### B. 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 any 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 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 Part 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 B.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.

**C. Amendments**

Any MOA party may propose that this MOA be amended, whereupon all signatory parties shall consult for no more than 30 days to consider such amendment. Caltrans may extend this consultation period. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with section D of this stipulation, below.

**D. Termination**

1. If this MOA is not amended as provided for in section C of this stipulation, or if either signatory party 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 Part 800.16(y).

2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.

3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other parties in writing. Termination hereunder shall render this MOA without further force or effect.

4. If this MOA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall comply with the requirements of 36 CFR Part 800.3-800.6.

**E. Duration of the MOA**

1. Unless terminated pursuant to section D of this stipulation, or unless it is superseded by an amended MOA, this MOA will be in effect following execution by the signatory parties until Caltrans, in consultation with the other signatory parties, determines that all of its stipulations have been satisfactorily fulfilled.

2. The terms of this MOA shall be satisfactorily fulfilled within seven (7) years following the date of execution by the signatory parties. If Caltrans determines

that this requirement cannot be met, the MOA parties will consult to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment of the MOA or termination. In the event of termination, Caltrans will comply with section D.4 of this stipulation, if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

3. If the Undertaking has not been implemented within seven (7) years following execution of this MOA, this MOA shall automatically terminate and have no further force or effect. In such event, Caltrans shall notify the other signatory parties in writing and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800.

**F. Effective Date**

This MOA will take effect on the date that it has been executed by Caltrans and the SHPO.

**EXECUTION** of this MOA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR§800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36CFR§800.6(c), that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

## SIGNATORY PARTIES:

### CALIFORNIA DEPARTMENT OF TRANSPORTATION

By:_____Date:_____
Jay Norvell
Chief, Division of Environmental Analysis

### CALIFORNIA STATE HISTORIC PRESERVATION OFFICER:

By:_____Date:_____
Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

## CONCURRING PARTIES:

### CALIFORNIA DEPARTMENT OF TRANSPORTATION

By:_____Date:_____
Raymond W. Wolfe, PhD
Director, District 8, San Bernardino

### CITY OF SAN BERNARDINO

By:_____Date:_____
Robert Eisenbeisz
City Engineer
City of San Bernardino

**ATTACHMENT A:**

**Bridge Replacement Sheets (1-4)**

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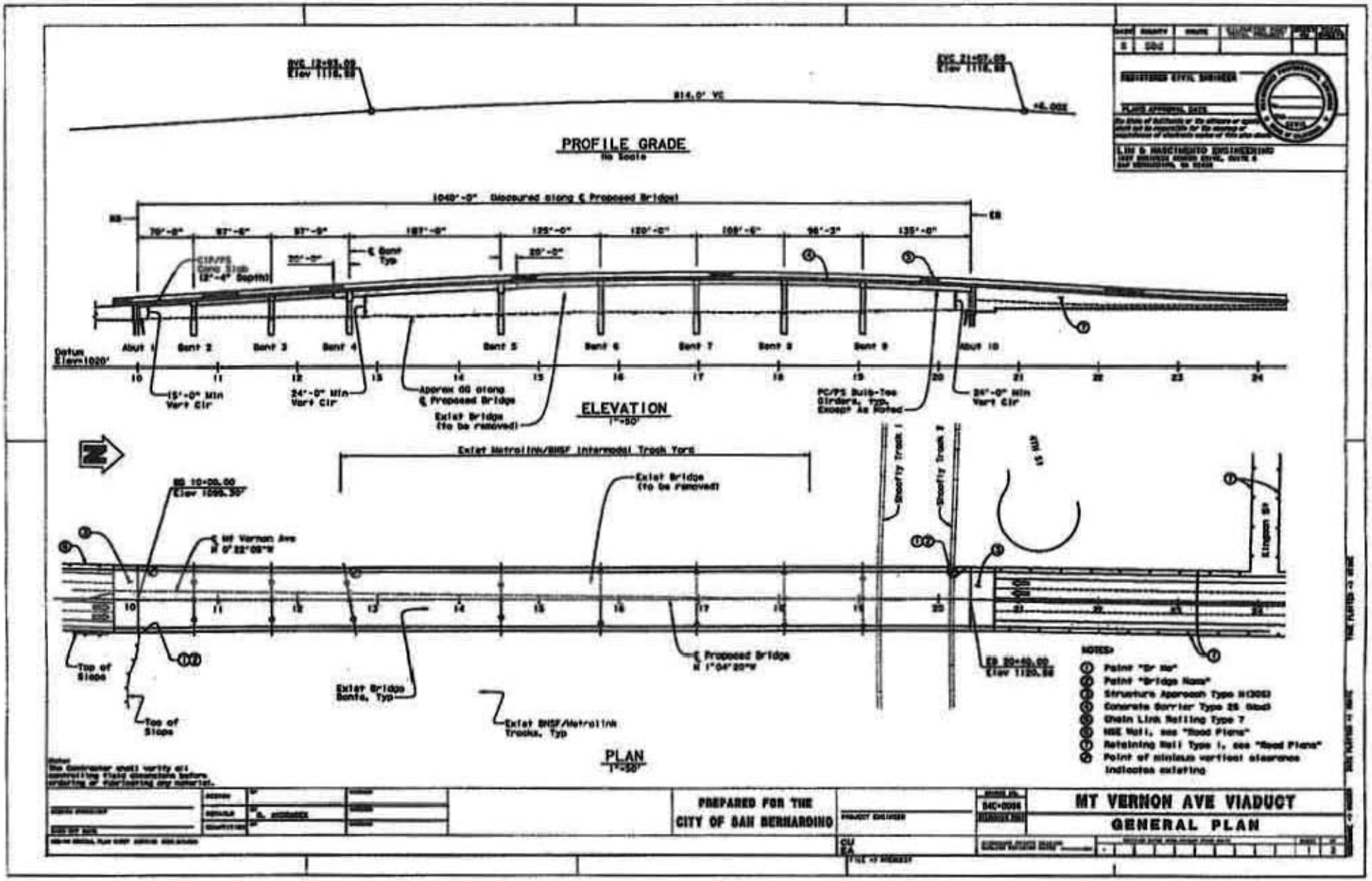
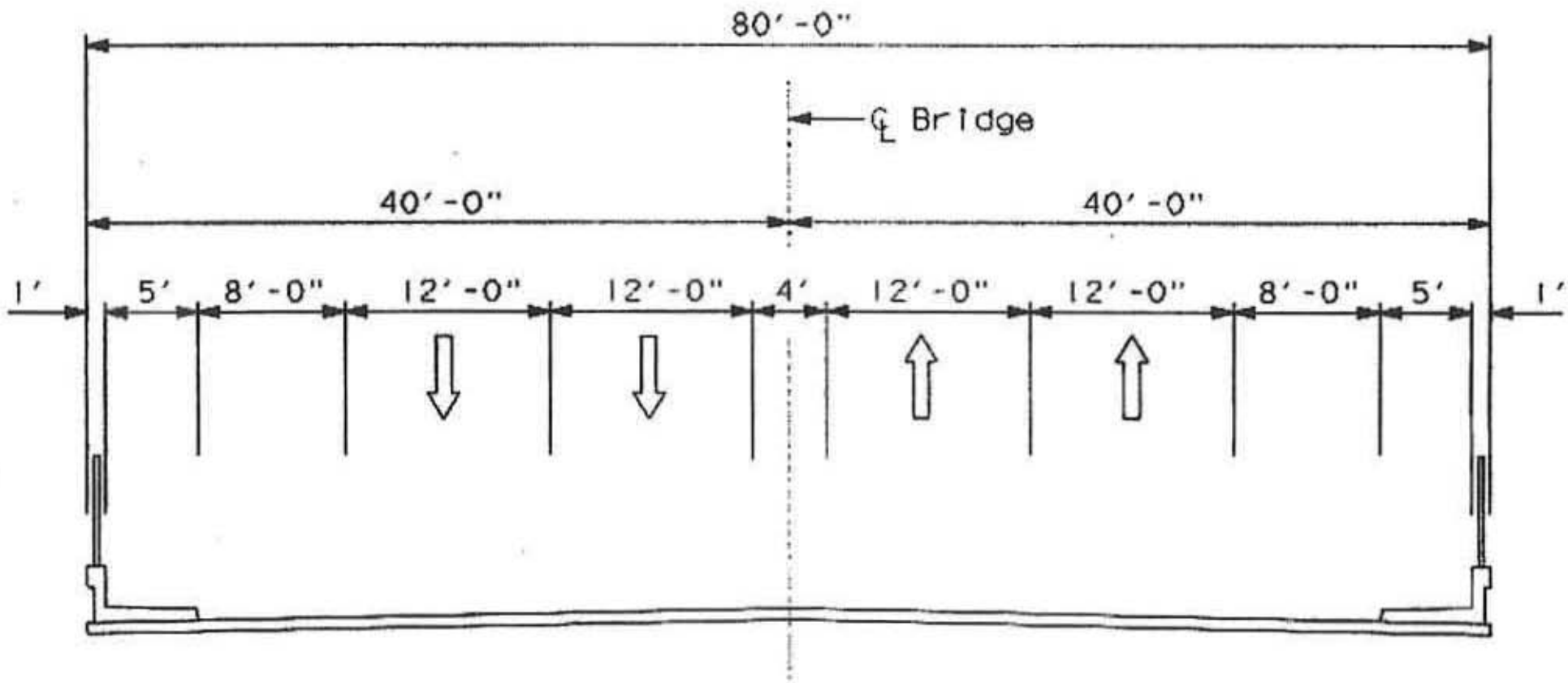
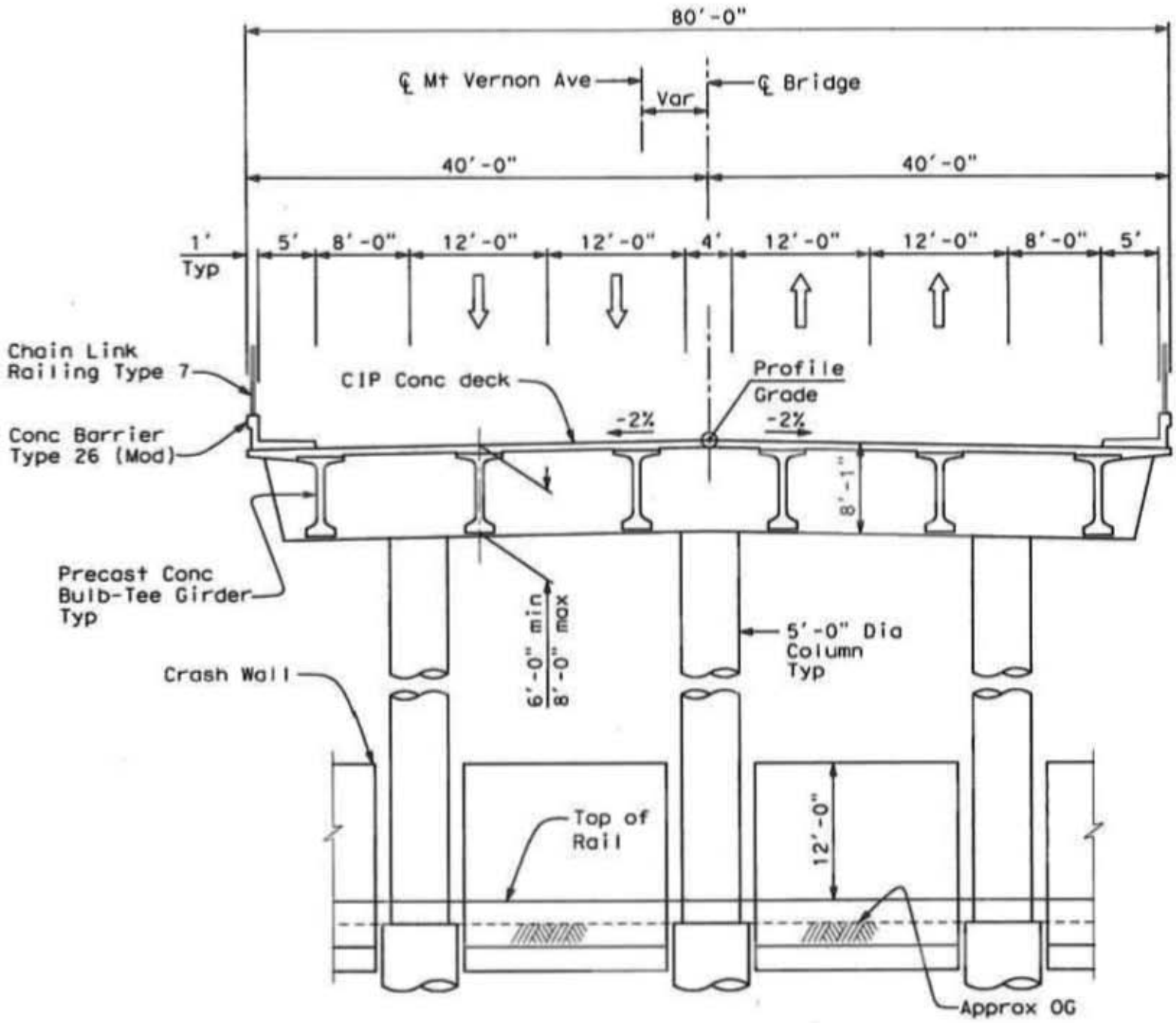
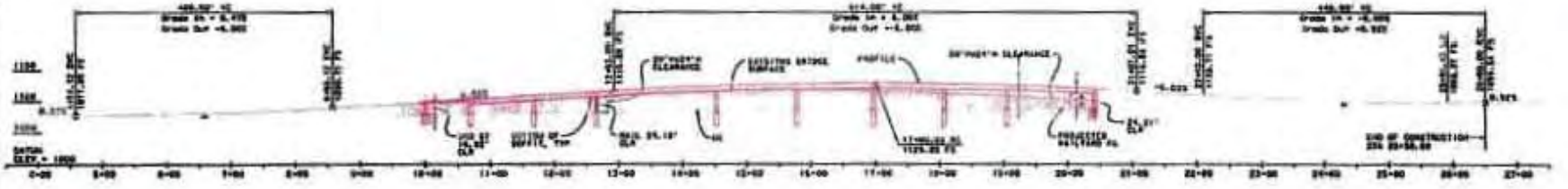

PROFILE GRADE
No Scale
814.0' VC
1040'-0" (Measured along ℄ Proposed Bridge)
ELEVATION
1"=50'
Abut 1
Bent 2
Bent 3
Bent 4
Bent 5
Bent 6
Bent 7
Bent 8
Bent 9
Abut 10
Datum Elev=1020'
15'-0" Min Vert Clr
24'-0" Min Vert Clr
Approx GG along ℄ Proposed Bridge
Exist Bridge (to be removed)
PC/PS Bulb-Tee Girders, Typ. Except As Noted
24'-0" Min Vert Clr
Exist Metrolink/BNSF Intermodal Track Yard
Exist Bridge (to be removed)
Mt Vernon Ave
Top of Slope
Exist Bridge Bents, Typ
Exist BNSF/Metrolink Tracks, Typ
℄ Proposed Bridge
PLAN
1"=50'
NOTES:
Paint "Br No"
Paint "Bridge Name"
Structure Approach Type II(30S)
Concrete Barrier Type 25 (Mod)
Chain Link Railing Type 7
MSE Wall, see "Road Plans"
Retaining Wall Type 1, see "Road Plans"
Point of minimum vertical clearance indicates existing
PREPARED FOR THE
CITY OF SAN BERNARDINO
MT VERNON AVE VIADUCT
GENERAL PLAN
LIN & HASHIMOTO ENGINEERING



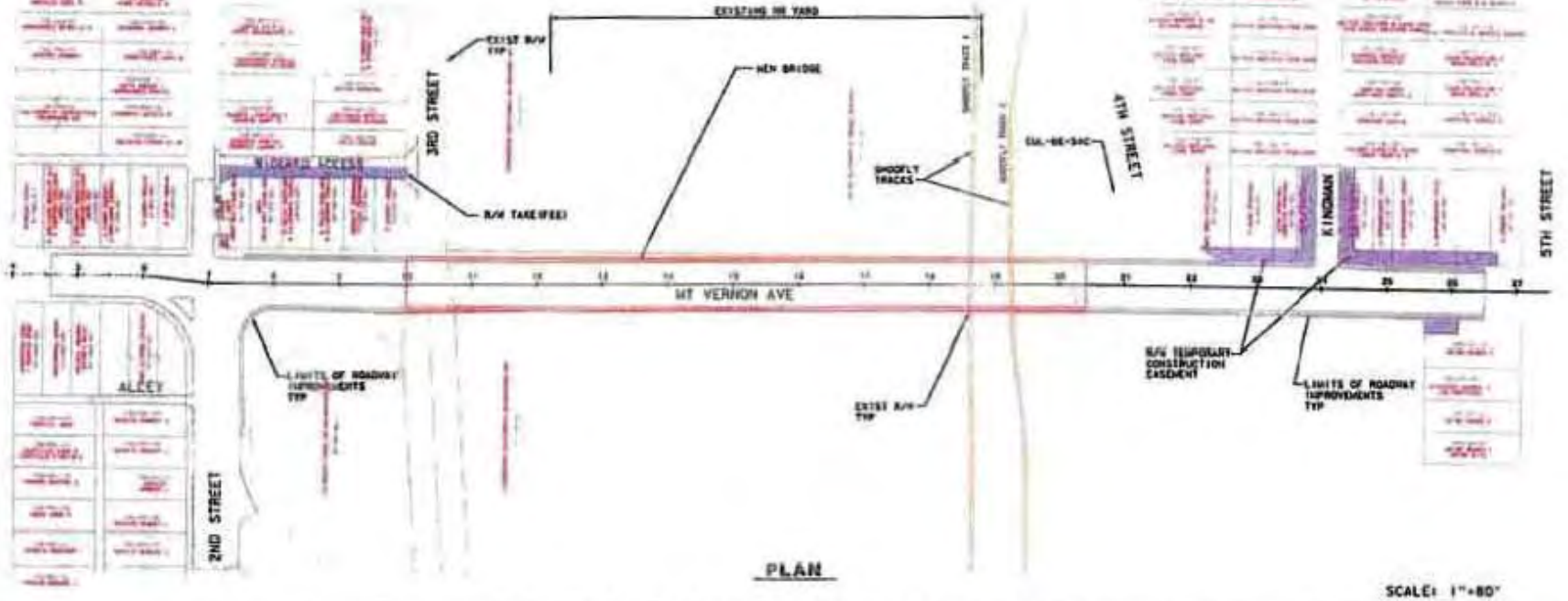

TYPICAL SECTION




TYPICAL SECTION
BENT 2 THRU BENT 9



ELEVATION




PLAN

SCALE: 1"=80'

CITY OF SAN BERNARDINO

REVISED BY | DATE REVISED

CALCULATED/DESIGNED BY | CHECKED BY

REGISTERED CIVIL ENGINEER

DATE APPROVED

LIM & NASCIMENTO ENGINEERING CORPORATION

## ATTACHMENT B:

## Photo Simulations for Alternative 3 (Replacement)

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Alternative 3 (Replacement)
Photo Simulation 1

Before: Looking north at the bridge from 2nd Street

After

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Alternative 3 (Replacement)
Photo Simulation 2

Before: looking west from the depot to the bridge

After

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Alternative 3 (Replacement)
Photo Simulation 3

Before: Looking southeast from 4th Street and Mount Vernon Ave

After

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## ATTACHMENT C:

## Additional Photographs

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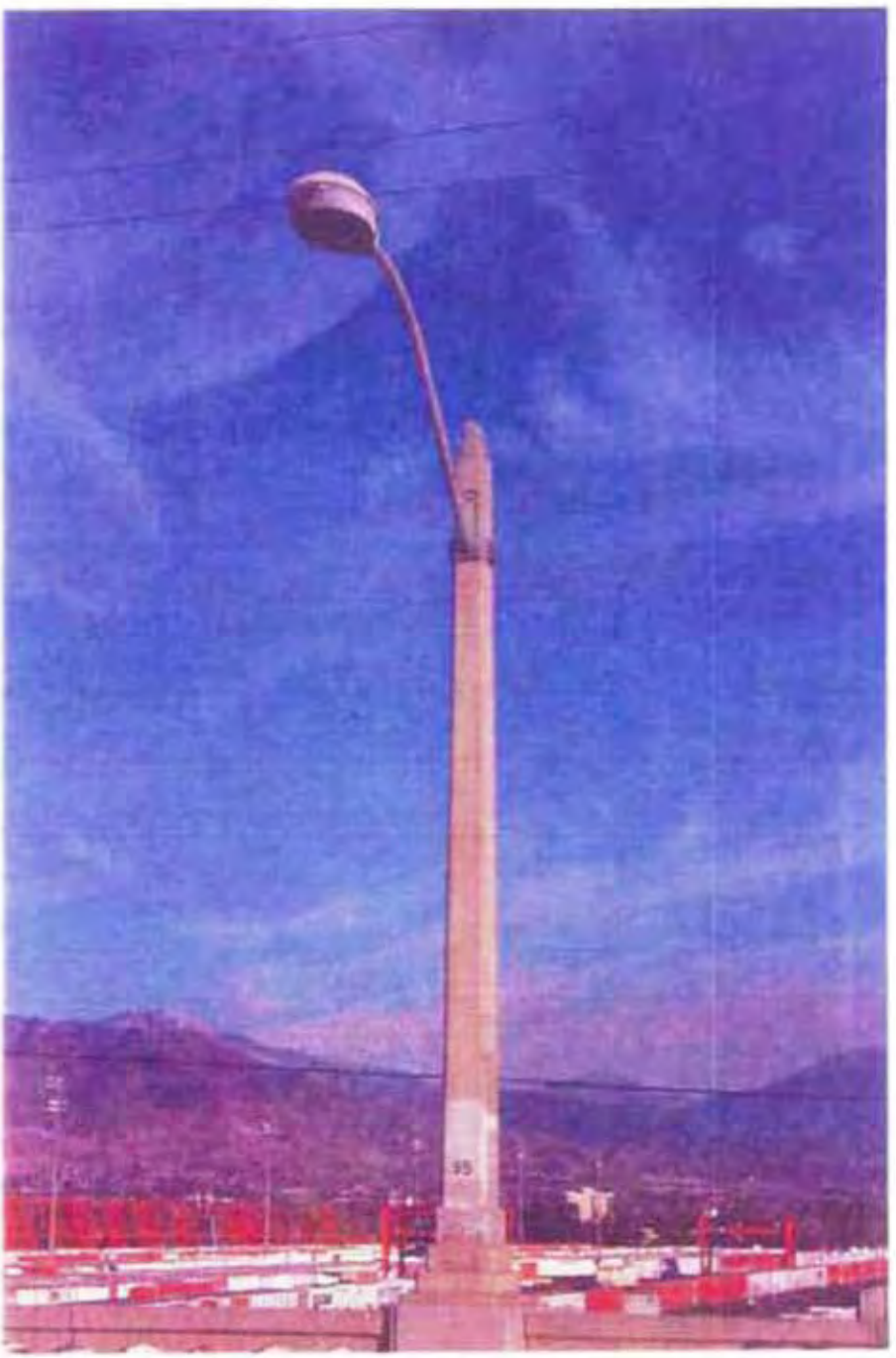
Image 1

Looking directly west from the ATSF Depot, January 15, 2004.

Image 2

Looking south along the east side of the bridge, January 15, 2004. At the center of the image is the stairwell at the southeast corner of the bridge, a character-defining feature. To the far right are Abutment 1, and Bent 2 and 3, all character-defining features.

Image 3



An example of an original light pole, with a modern "cobra" lamp, January 15, 2004. The pole is part of a character-defining feature.

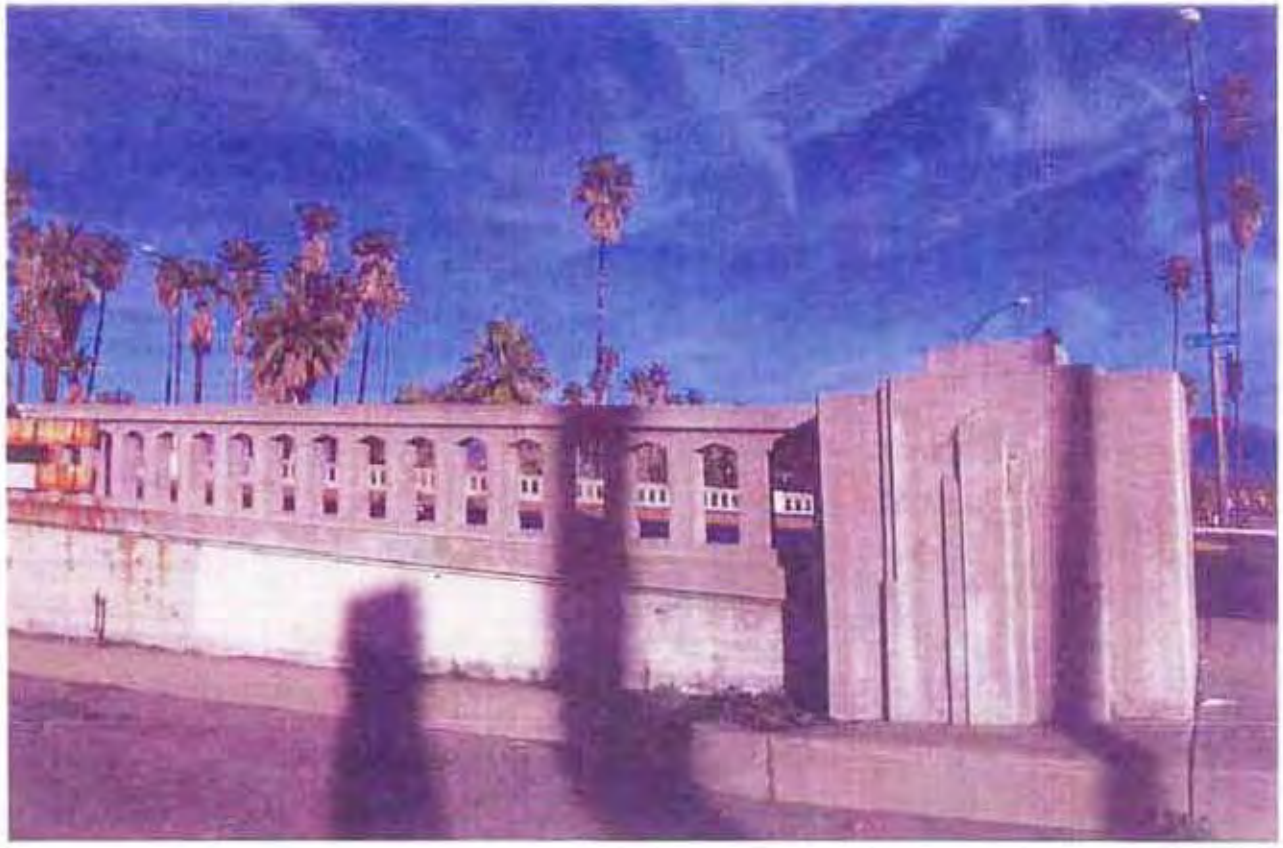
Image 4

Looking north along the bridge's east side, near the stairwell, taken January 15, 2004.

Image 5

This image was taken looking south/southeast along North Mount Vernon Ave, January 15, 2004. It shows some of the bridge railing and the over hanging sidewalk deck, which are both character-defining features.

Image 6



Looking east at the intersection of Mount Vernon Avenue Bridge and 2nd Street, taken on January 15, 2004. This image shows part of the bridge railing, a character-defining feature of the bridge.

Image 7

The bridge railing, which is a character-defining feature. This image was taken on January 15, 2004.

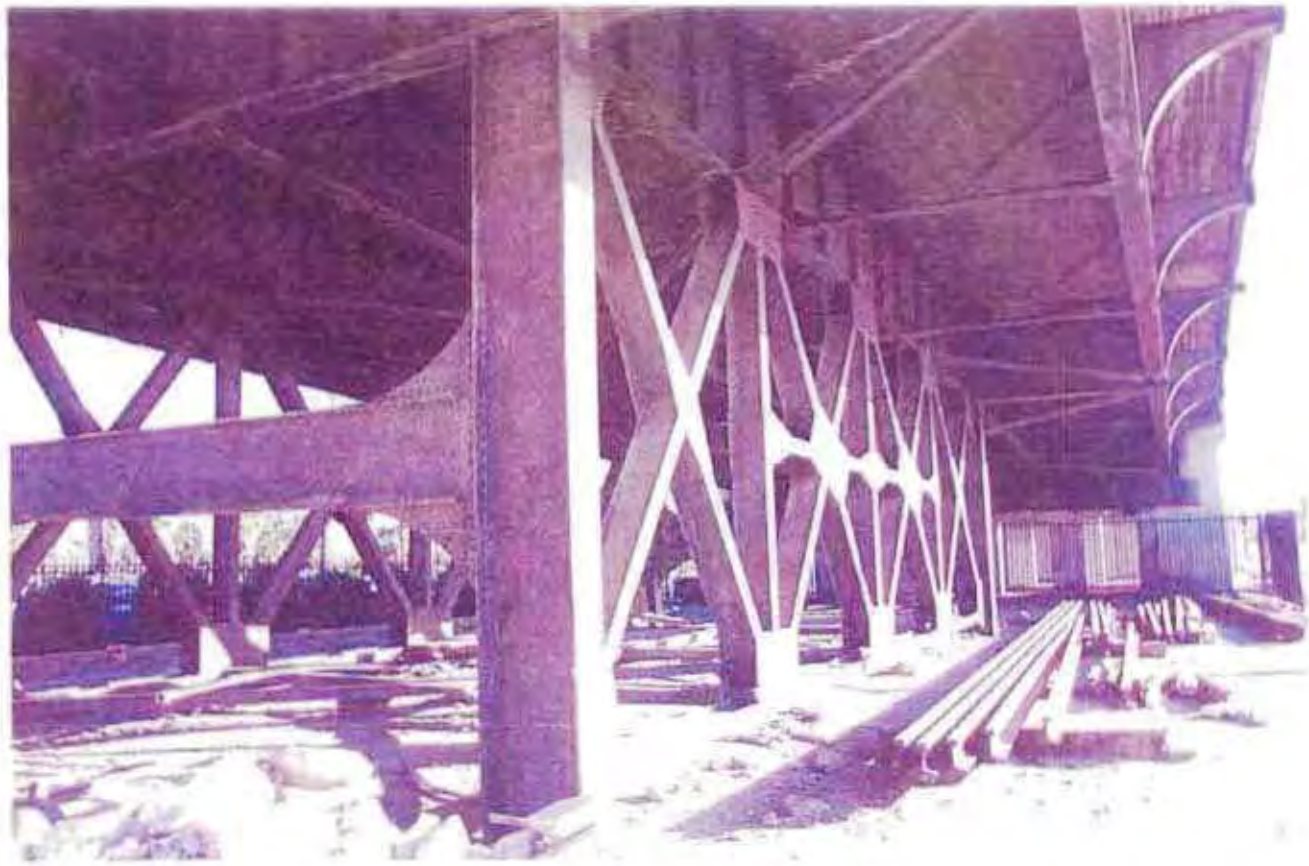
Image 8

Looking north from the west side of the bridge near the Abutment 1, taken on January 15, 2004. This shows part of the existing lot where staging and construction will occur. Piers 4-7, which are character-defining features, are visible at the far right of the image.

Image 9

Looking north on the bridge, from the intersection of Mount Vernon Avenue and 2nd Street, taken on January 15, 2004. Some of the bridge railing, a character-defining feature of the bridge, can be viewed in this image.

Image 10



Looking northwest at the steel arched brackets, which support the bridge deck and are character-defining features. Image taken on January 15, 2004.

Image 11

Looking south/southeast at the bridge, January 15, 2004.

Figure 1: View East Along Third Street Toward Viaduct Blvd (Depot on Left)

Figure 2: Grouping of Fan Palms Along Ditch, View Southeast

Figure 3: Concrete/Arroyo Stone Lined Ditch, View Southeast From Third St.

Figure 4: Ditch and Adjoining Rock Features, Looking East Toward Viaduct Blvd.

Figure 5: Bridge Staircase, Drinking Fountain, and Stone Retaining Wall

# **Appendix G.** LOS Calculation Worksheets

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# AM PEAK HOUR

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 629 | 94 | 122 | 392 | 53 | 159 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 723 | 108 | 140 | 451 | 61 | 183 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | | |
| Median storage veh) | | | | | 0 | |
| Upstream signal (ft) | | | | 832 | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 831 | | 1283 | 416 |
| vC1, stage 1 conf vol | | | | | 777 | |
| vC2, stage 2 conf vol | | | | | 506 | |
| vCu, unblocked vol | | | 831 | | 1283 | 416 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 83 | | 69 | 69 |
| cM capacity (veh/h) | | | 810 | | 196 | 592 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 |
|---|---|---|---|---|---|---|---|
| Volume Total | 482 | 349 | 140 | 225 | 225 | 61 | 183 |
| Volume Left | 0 | 0 | 140 | 0 | 0 | 61 | 0 |
| Volume Right | 0 | 108 | 0 | 0 | 0 | 0 | 183 |
| cSH | 1700 | 1700 | 810 | 1700 | 1700 | 196 | 592 |
| Volume to Capacity | 0.28 | 0.21 | 0.17 | 0.13 | 0.13 | 0.31 | 0.31 |
| Queue Length 95th (ft) | 0 | 0 | 16 | 0 | 0 | 31 | 33 |
| Control Delay (s) | 0.0 | 0.0 | 10.4 | 0.0 | 0.0 | 31.4 | 13.8 |
| Lane LOS | | | B | | | D | B |
| Approach Delay (s) | 0.0 | | 2.5 | | | 18.2 | |
| Approach LOS | | | | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.5 | | |
| Intersection Capacity Utilization | 42.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 0.95 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.97 | | | 0.93 | | | 0.92 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.98 | | | 0.98 | |
| Satd. Flow (prot) | 1615 | 3419 | | 1615 | 3301 | | | 1638 | | | 3078 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.87 | | | 0.84 | |
| Satd. Flow (perm) | 1615 | 3419 | | 1615 | 3301 | | | 1453 | | | 2633 | |
| Volume (vph) | 102 | 542 | 1 | 1 | 292 | 88 | 1 | 0 | 1 | 97 | 0 | 107 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 115 | 609 | 1 | 1 | 328 | 99 | 1 | 0 | 1 | 109 | 0 | 120 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 1 | 0 | 0 | 96 | 0 |
| Lane Group Flow (vph) | 115 | 610 | 0 | 1 | 399 | 0 | 0 | 1 | 0 | 0 | 133 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 5.9 | 25.7 | | 1.0 | 20.8 | | | 7.1 | | | 7.1 | |
| Effective Green, g (s) | 7.9 | 27.7 | | 3.0 | 22.8 | | | 9.1 | | | 9.1 | |
| Actuated g/C Ratio | 0.17 | 0.60 | | 0.07 | 0.50 | | | 0.20 | | | 0.20 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 279 | 2068 | | 106 | 1643 | | | 289 | | | 523 | |
| v/s Ratio Prot | c0.07 | c0.18 | | 0.00 | 0.12 | | | | | | | |
| v/s Ratio Perm | | | | | | | | 0.00 | | | c0.05 | |
| v/c Ratio | 0.41 | 0.29 | | 0.01 | 0.24 | | | 0.00 | | | 0.25 | |
| Uniform Delay, d1 | 16.9 | 4.4 | | 20.0 | 6.6 | | | 14.7 | | | 15.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 1.0 | 0.1 | | 0.0 | 0.1 | | | 0.0 | | | 0.3 | |
| Delay (s) | 17.9 | 4.4 | | 20.0 | 6.6 | | | 14.7 | | | 15.7 | |
| Level of Service | B | A | | C | A | | | B | | | B | |
| Approach Delay (s) | | 6.6 | | | 6.7 | | | 14.7 | | | 15.7 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.30 | | |
| Actuated Cycle Length (s) | 45.8 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 40.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | | | 0.93 | | | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.99 | | | 0.99 | |
| Satd. Flow (prot) | 1615 | 3415 | | 1615 | 3415 | | | 1658 | | | 1706 | |
| Flt Permitted | 0.51 | 1.00 | | 0.37 | 1.00 | | | 0.92 | | | 0.96 | |
| Satd. Flow (perm) | 874 | 3415 | | 631 | 3415 | | | 1536 | | | 1658 | |
| Volume (vph) | 5 | 645 | 6 | 14 | 356 | 4 | 7 | 7 | 14 | 2 | 3 | 2 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 6 | 725 | 7 | 16 | 400 | 4 | 8 | 8 | 16 | 2 | 3 | 2 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 6 | 732 | 0 | 16 | 404 | 0 | 0 | 17 | 0 | 0 | 5 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 70.6 | 70.6 | | 70.6 | 70.6 | | | 2.9 | | | 2.9 | |
| Effective Green, g (s) | 72.6 | 72.6 | | 72.6 | 72.6 | | | 4.9 | | | 4.9 | |
| Actuated g/C Ratio | 0.89 | 0.89 | | 0.89 | 0.89 | | | 0.06 | | | 0.06 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 779 | 3042 | | 562 | 3042 | | | 92 | | | 100 | |
| v/s Ratio Prot | | c0.21 | | | 0.12 | | | | | | | |
| v/s Ratio Perm | 0.01 | | | 0.03 | | | | c0.01 | | | 0.00 | |
| v/c Ratio | 0.01 | 0.24 | | 0.03 | 0.13 | | | 0.18 | | | 0.05 | |
| Uniform Delay, d1 | 0.5 | 0.6 | | 0.5 | 0.6 | | | 36.4 | | | 36.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 1.0 | | | 0.2 | |
| Delay (s) | 0.5 | 0.7 | | 0.5 | 0.6 | | | 37.4 | | | 36.3 | |
| Level of Service | A | A | | A | A | | | D | | | D | |
| Approach Delay (s) | | 0.7 | | | 0.6 | | | 37.4 | | | 36.3 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 1.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.23 | | |
| Actuated Cycle Length (s) | 81.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 29.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.98 | | 1.00 | 0.97 | | 1.00 | 0.98 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3343 | | 1615 | 3319 | | 1615 | 3354 | | 1615 | 3343 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.41 | 1.00 | | 0.55 | 1.00 | |
| Satd. Flow (perm) | 1615 | 3343 | | 1615 | 3319 | | 699 | 3354 | | 931 | 3343 | |
| Volume (vph) | 40 | 523 | 93 | 32 | 283 | 70 | 26 | 212 | 31 | 143 | 328 | 58 |
| Peak-hour factor, PHF | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Adj. Flow (vph) | 49 | 638 | 113 | 39 | 345 | 85 | 32 | 259 | 38 | 174 | 400 | 71 |
| RTOR Reduction (vph) | 0 | 18 | 0 | 0 | 27 | 0 | 0 | 16 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 49 | 733 | 0 | 39 | 403 | 0 | 32 | 281 | 0 | 174 | 450 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 2.2 | 16.0 | | 2.2 | 16.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Effective Green, g (s) | 4.2 | 18.0 | | 4.2 | 18.0 | | 17.0 | 17.0 | | 17.0 | 17.0 | |
| Actuated g/C Ratio | 0.09 | 0.40 | | 0.09 | 0.40 | | 0.38 | 0.38 | | 0.38 | 0.38 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 150 | 1331 | | 150 | 1322 | | 263 | 1261 | | 350 | 1257 | |
| v/s Ratio Prot | c0.03 | c0.22 | | 0.02 | 0.12 | | | 0.08 | | | 0.13 | |
| v/s Ratio Perm | | | | | | | 0.05 | | | c0.19 | | |
| v/c Ratio | 0.33 | 0.55 | | 0.26 | 0.30 | | 0.12 | 0.22 | | 0.50 | 0.36 | |
| Uniform Delay, d1 | 19.2 | 10.5 | | 19.1 | 9.3 | | 9.2 | 9.6 | | 10.8 | 10.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.3 | 0.5 | | 0.9 | 0.1 | | 0.2 | 0.1 | | 1.1 | 0.2 | |
| Delay (s) | 20.5 | 11.0 | | 20.0 | 9.4 | | 9.4 | 9.7 | | 11.9 | 10.3 | |
| Level of Service | C | B | | B | A | | A | A | | B | B | |
| Approach Delay (s) | | 11.6 | | | 10.3 | | | 9.7 | | | 10.8 | |
| Approach LOS | | B | | | B | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 10.8 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 45.2 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 51.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.99 | | | 1.00 | | | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.95 | | | 0.97 | |
| Satd. Flow (prot) | 1615 | 3415 | | 1615 | 3389 | | | 1710 | | | 1666 | |
| Flt Permitted | 0.50 | 1.00 | | 0.34 | 1.00 | | | 0.75 | | | 0.83 | |
| Satd. Flow (perm) | 847 | 3415 | | 577 | 3389 | | | 1358 | | | 1423 | |
| Volume (vph) | 9 | 691 | 6 | 2 | 369 | 16 | 1 | 0 | 0 | 38 | 0 | 18 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 10 | 785 | 7 | 2 | 419 | 18 | 1 | 0 | 0 | 43 | 0 | 20 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 10 | 792 | 0 | 2 | 435 | 0 | 0 | 1 | 0 | 0 | 46 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 54.4 | 54.4 | | 54.4 | 54.4 | | | 7.3 | | | 7.3 | |
| Effective Green, g (s) | 56.4 | 56.4 | | 56.4 | 56.4 | | | 9.3 | | | 9.3 | |
| Actuated g/C Ratio | 0.81 | 0.81 | | 0.81 | 0.81 | | | 0.13 | | | 0.13 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 685 | 2763 | | 467 | 2750 | | | 181 | | | 190 | |
| v/s Ratio Prot | | c0.23 | | | 0.13 | | | | | | | |
| v/s Ratio Perm | 0.01 | | | 0.00 | | | | 0.00 | | | c0.03 | |
| v/c Ratio | 0.01 | 0.29 | | 0.00 | 0.16 | | | 0.01 | | | 0.24 | |
| Uniform Delay, d1 | 1.3 | 1.7 | | 1.3 | 1.5 | | | 26.2 | | | 27.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.0 | 0.0 | | | 0.0 | | | 0.7 | |
| Delay (s) | 1.3 | 1.7 | | 1.3 | 1.5 | | | 26.2 | | | 27.7 | |
| Level of Service | A | A | | A | A | | | C | | | C | |
| Approach Delay (s) | | 1.7 | | | 1.5 | | | 26.2 | | | 27.7 | |
| Approach LOS | | A | | | A | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 2.9 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.28 | | |
| Actuated Cycle Length (s) | 69.7 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 30.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1700 | 1800 | 1700 | 1800 |
| Total Lost time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | 0.98 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 3352 | | 1615 | 3420 | 1615 | 1530 |
| Flt Permitted | 1.00 | | 0.29 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 3352 | | 489 | 3420 | 1615 | 1530 |
| Volume (vph) | 702 | 107 | 7 | 414 | 71 | 10 |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 807 | 123 | 8 | 476 | 82 | 11 |
| RTOR Reduction (vph) | 10 | 0 | 0 | 0 | 0 | 9 |
| Lane Group Flow (vph) | 920 | 0 | 8 | 476 | 82 | 2 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | Perm | | | Perm |
| Protected Phases | 2 | | | 6 | 8 | |
| Permitted Phases | | | 6 | | | 8 |
| Actuated Green, G (s) | 47.7 | | 47.7 | 47.7 | 7.8 | 7.8 |
| Effective Green, g (s) | 49.7 | | 49.7 | 49.7 | 9.8 | 9.8 |
| Actuated g/C Ratio | 0.78 | | 0.78 | 0.78 | 0.15 | 0.15 |
| Clearance Time (s) | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 2624 | | 383 | 2677 | 249 | 236 |
| v/s Ratio Prot | c0.27 | | | 0.14 | c0.05 | |
| v/s Ratio Perm | | | 0.02 | | | 0.00 |
| v/c Ratio | 0.35 | | 0.02 | 0.18 | 0.33 | 0.01 |
| Uniform Delay, d1 | 2.1 | | 1.5 | 1.7 | 23.9 | 22.7 |
| Progression Factor | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | | 0.0 | 0.0 | 0.8 | 0.0 |
| Delay (s) | 2.1 | | 1.5 | 1.8 | 24.7 | 22.7 |
| Level of Service | A | | A | A | C | C |
| Approach Delay (s) | 2.1 | | | 1.8 | 24.5 | |
| Approach LOS | A | | | A | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 3.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.34 | | |
| Actuated Cycle Length (s) | 63.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 35.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.97 | | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1615 | 3420 | 1530 | 1615 | 3333 | | 1615 | 3316 | | 1615 | 3420 | 1530 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.54 | 1.00 | | 0.62 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1615 | 3420 | 1530 | 1615 | 3333 | | 926 | 3316 | | 1051 | 3420 | 1530 |
| Volume (vph) | 24 | 383 | 300 | 67 | 217 | 44 | 25 | 58 | 15 | 58 | 288 | 216 |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 28 | 440 | 345 | 77 | 249 | 51 | 29 | 67 | 17 | 67 | 331 | 248 |
| RTOR Reduction (vph) | 0 | 0 | 225 | 0 | 18 | 0 | 0 | 13 | 0 | 0 | 0 | 177 |
| Lane Group Flow (vph) | 28 | 440 | 120 | 77 | 282 | 0 | 29 | 71 | 0 | 67 | 331 | 71 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | Perm | Prot | | | pm+pt | | | pm+pt | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | | 8 | | | 4 | | 4 |
| Actuated Green, G (s) | 2.2 | 15.6 | 15.6 | 4.5 | 17.9 | | 12.9 | 10.9 | | 16.3 | 12.6 | 12.6 |
| Effective Green, g (s) | 4.2 | 17.6 | 17.6 | 6.5 | 19.9 | | 16.9 | 12.9 | | 20.3 | 14.6 | 14.6 |
| Actuated g/C Ratio | 0.08 | 0.35 | 0.35 | 0.13 | 0.39 | | 0.33 | 0.25 | | 0.40 | 0.29 | 0.29 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 134 | 1187 | 531 | 207 | 1308 | | 363 | 844 | | 484 | 985 | 441 |
| v/s Ratio Prot | 0.02 | c0.13 | | c0.05 | 0.08 | | 0.01 | 0.02 | | c0.02 | c0.10 | |
| v/s Ratio Perm | | | 0.08 | | | | 0.02 | | | 0.04 | | 0.05 |
| v/c Ratio | 0.21 | 0.37 | 0.23 | 0.37 | 0.22 | | 0.08 | 0.08 | | 0.14 | 0.34 | 0.16 |
| Uniform Delay, d1 | 21.7 | 12.4 | 11.7 | 20.2 | 10.2 | | 11.5 | 14.4 | | 9.5 | 14.2 | 13.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.8 | 0.2 | 0.2 | 1.1 | 0.1 | | 0.1 | 0.0 | | 0.1 | 0.2 | 0.2 |
| Delay (s) | 22.5 | 12.6 | 11.9 | 21.4 | 10.3 | | 11.6 | 14.4 | | 9.7 | 14.4 | 13.7 |
| Level of Service | C | B | B | C | B | | B | B | | A | B | B |
| Approach Delay (s) | | 12.7 | | | 12.6 | | | 13.7 | | | 13.6 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 13.0 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.33 | | |
| Actuated Cycle Length (s) | 50.7 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 42.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Util. Factor | | | | | 0.91 | | 1.00 | 0.95 | | | 0.95 | |
| Frt | | | | | 1.00 | | 1.00 | 1.00 | | | 0.90 | |
| Flt Protected | | | | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | | | | 4897 | | 1615 | 3420 | | | 3088 | |
| Flt Permitted | | | | | 1.00 | | 0.34 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | | | | 4897 | | 586 | 3420 | | | 3088 | |
| Volume (vph) | 0 | 0 | 0 | 0 | 115 | 3 | 23 | 89 | 0 | 0 | 234 | 429 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 131 | 3 | 26 | 101 | 0 | 0 | 266 | 488 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 148 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 132 | 0 | 26 | 101 | 0 | 0 | 606 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | | Perm | | | Perm | | | | | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | | 2 | | | | | |
| Actuated Green, G (s) | | | | | 7.0 | | 27.8 | 27.8 | | | 27.8 | |
| Effective Green, g (s) | | | | | 9.0 | | 29.8 | 29.8 | | | 29.8 | |
| Actuated g/C Ratio | | | | | 0.21 | | 0.70 | 0.70 | | | 0.70 | |
| Clearance Time (s) | | | | | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 1030 | | 408 | 2381 | | | 2150 | |
| v/s Ratio Prot | | | | | c0.03 | | | 0.03 | | | c0.20 | |
| v/s Ratio Perm | | | | | | | 0.04 | | | | | |
| v/c Ratio | | | | | 0.13 | | 0.06 | 0.04 | | | 0.28 | |
| Uniform Delay, d1 | | | | | 13.7 | | 2.1 | 2.0 | | | 2.5 | |
| Progression Factor | | | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.1 | | 0.1 | 0.0 | | | 0.1 | |
| Delay (s) | | | | | 13.8 | | 2.1 | 2.0 | | | 2.5 | |
| Level of Service | | | | | B | | A | A | | | A | |
| Approach Delay (s) | | 0.0 | | | 13.8 | | | 2.1 | | | 2.5 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.24 | | |
| Actuated Cycle Length (s) | 42.8 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 31.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | 1.00 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 0.99 | | | 1.00 | | 1.00 | 0.86 | | 1.00 | 0.98 | |
| Flt Protected | | 1.00 | | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 3382 | | | 3343 | | 1615 | 1552 | | 1615 | 3354 | |
| Flt Permitted | | 1.00 | | | 0.83 | | 0.48 | 1.00 | | 0.73 | 1.00 | |
| Satd. Flow (perm) | | 3382 | | | 2854 | | 809 | 1552 | | 1247 | 3354 | |
| Volume (vph) | 0 | 48 | 4 | 37 | 44 | 0 | 10 | 3 | 32 | 164 | 405 | 60 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 0 | 50 | 4 | 39 | 46 | 0 | 10 | 3 | 33 | 171 | 422 | 62 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 0 | 51 | 0 | 0 | 85 | 0 | 10 | 29 | 0 | 171 | 477 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | | 4.8 | | | 4.8 | | 36.7 | 36.7 | | 36.7 | 36.7 | |
| Effective Green, g (s) | | 6.8 | | | 6.8 | | 38.7 | 38.7 | | 38.7 | 38.7 | |
| Actuated g/C Ratio | | 0.14 | | | 0.14 | | 0.78 | 0.78 | | 0.78 | 0.78 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 465 | | | 392 | | 632 | 1213 | | 975 | 2622 | |
| v/s Ratio Prot | | 0.01 | | | | | | 0.02 | | | c0.14 | |
| v/s Ratio Perm | | | | | c0.03 | | 0.01 | | | 0.14 | | |
| v/c Ratio | | 0.11 | | | 0.22 | | 0.02 | 0.02 | | 0.18 | 0.18 | |
| Uniform Delay, d1 | | 18.7 | | | 19.0 | | 1.2 | 1.2 | | 1.4 | 1.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.3 | | 0.0 | 0.0 | | 0.1 | 0.0 | |
| Delay (s) | | 18.8 | | | 19.3 | | 1.2 | 1.2 | | 1.5 | 1.4 | |
| Level of Service | | B | | | B | | A | A | | A | A | |
| Approach Delay (s) | | 18.8 | | | 19.3 | | | 1.2 | | | 1.4 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.18 | | |
| Actuated Cycle Length (s) | 49.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 32.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.94 | | 1.00 | 0.97 | | | 0.93 | | 1.00 | 0.97 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3221 | | 1615 | 3325 | | | 3180 | | 1615 | 3318 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | 0.64 | 1.00 | |
| Satd. Flow (perm) | 1615 | 3221 | | 1615 | 3325 | | | 3180 | | 1081 | 3318 | |
| Volume (vph) | 31 | 114 | 72 | 39 | 36 | 8 | 0 | 79 | 70 | 9 | 173 | 43 |
| Peak-hour factor, PHF | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Adj. Flow (vph) | 38 | 141 | 89 | 48 | 44 | 10 | 0 | 98 | 86 | 11 | 214 | 53 |
| RTOR Reduction (vph) | 0 | 52 | 0 | 0 | 6 | 0 | 0 | 62 | 0 | 0 | 32 | 0 |
| Lane Group Flow (vph) | 38 | 178 | 0 | 48 | 48 | 0 | 0 | 122 | 0 | 11 | 235 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 1.1 | 10.9 | | 1.2 | 11.0 | | | 6.6 | | 6.6 | 6.6 | |
| Effective Green, g (s) | 3.1 | 12.9 | | 3.2 | 13.0 | | | 8.6 | | 8.6 | 8.6 | |
| Actuated g/C Ratio | 0.10 | 0.42 | | 0.10 | 0.42 | | | 0.28 | | 0.28 | 0.28 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 163 | 1353 | | 168 | 1408 | | | 891 | | 303 | 929 | |
| v/s Ratio Prot | 0.02 | c0.06 | | c0.03 | 0.01 | | | 0.04 | | | c0.07 | |
| v/s Ratio Perm | | | | | | | | | | 0.01 | | |
| v/c Ratio | 0.23 | 0.13 | | 0.29 | 0.03 | | | 0.14 | | 0.04 | 0.25 | |
| Uniform Delay, d1 | 12.7 | 5.5 | | 12.7 | 5.2 | | | 8.3 | | 8.0 | 8.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.7 | 0.0 | | 0.9 | 0.0 | | | 0.1 | | 0.0 | 0.1 | |
| Delay (s) | 13.4 | 5.5 | | 13.6 | 5.2 | | | 8.3 | | 8.1 | 8.7 | |
| Level of Service | B | A | | B | A | | | A | | A | A | |
| Approach Delay (s) | | 6.6 | | | 9.2 | | | 8.3 | | | 8.7 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.18 | | |
| Actuated Cycle Length (s) | 30.7 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 27.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | 2.0 | | 2.0 | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 1.00 | | 0.97 | | 1.00 | | 0.95 | | | 0.95 | |
| Frt | | 0.96 | | 1.00 | | 0.85 | | 0.94 | | | 1.00 | |
| Flt Protected | | 0.98 | | 0.95 | | 1.00 | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1699 | | 2949 | | 1530 | | 3225 | | | 3369 | |
| Flt Permitted | | 0.98 | | 0.75 | | 1.00 | | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1699 | | 2325 | | 1530 | | 3225 | | | 3369 | |
| Volume (vph) | 3 | 4 | 3 | 94 | 0 | 93 | 5 | 239 | 147 | 136 | 339 | 3 |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Adj. Flow (vph) | 4 | 5 | 4 | 121 | 0 | 119 | 6 | 306 | 188 | 174 | 435 | 4 |
| RTOR Reduction (vph) | 0 | 4 | 0 | 0 | 0 | 98 | 0 | 107 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 9 | 0 | 121 | 0 | 21 | 0 | 393 | 0 | 0 | 612 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Split | | | custom | | custom | Split | | | Split | | |
| Protected Phases | 4 | 4 | | | | | 2 | 2 | | 6 | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | | 0.9 | | 6.1 | | 6.1 | | 10.6 | | | 13.4 | |
| Effective Green, g (s) | | 2.9 | | 8.1 | | 8.1 | | 12.6 | | | 15.4 | |
| Actuated g/C Ratio | | 0.06 | | 0.17 | | 0.17 | | 0.27 | | | 0.33 | |
| Clearance Time (s) | | 4.0 | | 4.0 | | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | 3.0 | | 3.0 | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 105 | | 401 | | 264 | | 865 | | | 1104 | |
| v/s Ratio Prot | | c0.01 | | | | | | c0.12 | | | c0.18 | |
| v/s Ratio Perm | | | | c0.05 | | 0.01 | | | | | | |
| v/c Ratio | | 0.09 | | 0.30 | | 0.08 | | 0.45 | | | 0.55 | |
| Uniform Delay, d1 | | 20.8 | | 17.0 | | 16.3 | | 14.3 | | | 13.0 | |
| Progression Factor | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.4 | | 0.4 | | 0.1 | | 0.4 | | | 0.6 | |
| Delay (s) | | 21.2 | | 17.4 | | 16.4 | | 14.7 | | | 13.6 | |
| Level of Service | | C | | B | | B | | B | | | B | |
| Approach Delay (s) | | 21.2 | | | 16.9 | | | 14.7 | | | 13.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.7 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.42 | | |
| Actuated Cycle Length (s) | 47.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 44.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #12 K Street and 2nd Street [2009 Analysis]

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.202 |
| Loss Time (sec): | 0 (Y+R=4.0 sec) | Average Delay (sec/veh): | 8.5 |
| Optimal Cycle: | 0 | Level Of Service: | A |

| Street Name: | K Street | | | | | | 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lanes: | 0 0 1! | 0 0 | | 0 0 1! | 0 0 | | 1 0 1 | 1 0 | | 1 0 1 | 1 0 | |
| Volume Module: >> Count Date: 21 Oct 2009 << AM Peak Period | | | | | | | | | | | | |
| Base Vol: | 16 | 3 | 41 | 8 | 25 | 12 | 8 | 258 | 13 | 39 | 128 | 21 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 16 | 3 | 41 | 8 | 25 | 12 | 8 | 258 | 13 | 39 | 128 | 21 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| PHF Volume: | 17 | 3 | 44 | 9 | 27 | 13 | 9 | 276 | 14 | 42 | 137 | 22 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 17 | 3 | 44 | 9 | 27 | 13 | 9 | 276 | 14 | 42 | 137 | 22 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 17 | 3 | 44 | 9 | 27 | 13 | 9 | 276 | 14 | 42 | 137 | 22 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.27 | 0.05 | 0.68 | 0.18 | 0.55 | 0.27 | 1.00 | 1.90 | 0.10 | 1.00 | 1.72 | 0.28 |
| Final Sat.: | 190 | 36 | 487 | 120 | 376 | 181 | 649 | 1368 | 69 | 637 | 1221 | 205 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.09 | 0.09 | 0.09 | 0.07 | 0.07 | 0.07 | 0.01 | 0.20 | 0.20 | 0.07 | 0.11 | 0.11 |
| Crit Moves: | **** | | | | **** | | | **** | | | **** | |
| Delay/Veh: | 8.1 | 8.1 | 8.1 | 8.3 | 8.3 | 8.3 | 8.2 | 8.8 | 8.8 | 8.6 | 8.3 | 8.1 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 8.1 | 8.1 | 8.1 | 8.3 | 8.3 | 8.3 | 8.2 | 8.8 | 8.8 | 8.6 | 8.3 | 8.1 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A |
| ApproachDel: | 8.1 | | | 8.3 | | | 8.8 | | | 8.3 | | |
| Delay Adj: | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| ApprAdjDel: | 8.1 | | | 8.3 | | | 8.8 | | | 8.3 | | |
| LOS by Appr: | A | | | A | | | A | | | A | | |
| AllWayAvgQ: | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |

Note: Queue reported is the number of cars per lane.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 0.95 | | | 0.95 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.99 | | | 0.87 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | 1615 | 3414 | | 1615 | 3383 | | | 2972 | | | 3352 | |
| Flt Permitted | 0.63 | 1.00 | | 0.54 | 1.00 | | | 0.94 | | | 0.85 | |
| Satd. Flow (perm) | 1070 | 3414 | | 919 | 3383 | | | 2809 | | | 2883 | |
| Volume (vph) | 5 | 328 | 4 | 39 | 170 | 13 | 4 | 17 | 134 | 119 | 292 | 18 |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 5 | 349 | 4 | 41 | 181 | 14 | 4 | 18 | 143 | 127 | 311 | 19 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 8 | 0 | 0 | 80 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 5 | 352 | 0 | 41 | 187 | 0 | 0 | 85 | 0 | 0 | 453 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 8.7 | 8.7 | | 8.7 | 8.7 | | | 9.5 | | | 9.5 | |
| Effective Green, g (s) | 10.7 | 10.7 | | 10.7 | 10.7 | | | 11.5 | | | 11.5 | |
| Actuated g/C Ratio | 0.41 | 0.41 | | 0.41 | 0.41 | | | 0.44 | | | 0.44 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 437 | 1394 | | 375 | 1382 | | | 1233 | | | 1265 | |
| v/s Ratio Prot | | c0.10 | | | 0.06 | | | | | | | |
| v/s Ratio Perm | 0.00 | | | 0.04 | | | | 0.03 | | | c0.16 | |
| v/c Ratio | 0.01 | 0.25 | | 0.11 | 0.14 | | | 0.07 | | | 0.36 | |
| Uniform Delay, d1 | 4.6 | 5.1 | | 4.8 | 4.9 | | | 4.3 | | | 4.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.1 | 0.0 | | | 0.0 | | | 0.2 | |
| Delay (s) | 4.6 | 5.2 | | 4.9 | 4.9 | | | 4.3 | | | 5.1 | |
| Level of Service | A | A | | A | A | | | A | | | A | |
| Approach Delay (s) | | 5.2 | | | 4.9 | | | 4.3 | | | 5.1 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.29 | | |
| Actuated Cycle Length (s) | 26.2 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 44.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1600 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | | 2.0 | 2.0 | | |
| Lane Util. Factor | 0.95 | | 0.97 | 1.00 | | |
| Frt | 0.96 | | 1.00 | 1.00 | | |
| Flt Protected | 1.00 | | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3278 | | 2949 | 1800 | | |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3278 | | 2949 | 1800 | | |
| Volume (vph) | 449 | 172 | 212 | 234 | 0 | 0 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 473 | 181 | 223 | 246 | 0 | 0 |
| RTOR Reduction (vph) | 44 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 610 | 0 | 223 | 246 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | Prot | | | |
| Protected Phases | 2 | | 1 | 6 | | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 19.4 | | 7.5 | 34.9 | | |
| Effective Green, g (s) | 21.4 | | 9.5 | 34.9 | | |
| Actuated g/C Ratio | 0.61 | | 0.27 | 1.00 | | |
| Clearance Time (s) | 4.0 | | 4.0 | 4.0 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 2010 | | 803 | 1800 | | |
| v/s Ratio Prot | c0.19 | | c0.08 | 0.14 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.30 | | 0.28 | 0.14 | | |
| Uniform Delay, d1 | 3.2 | | 10.0 | 0.0 | | |
| Progression Factor | 1.00 | | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.1 | | 0.2 | 0.0 | | |
| Delay (s) | 3.3 | | 10.2 | 0.0 | | |
| Level of Service | A | | B | A | | |
| Approach Delay (s) | 3.3 | | | 4.9 | 0.0 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 3.9 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.29 | | |
| Actuated Cycle Length (s) | 34.9 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 83.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.91 | 1.00 | | 1.00 | 0.88 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1615 | 3420 | | | 4914 | 1530 | | 1710 | 2693 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1615 | 3420 | | | 4914 | 1530 | | 1710 | 2693 | | | |
| Volume (vph) | 246 | 210 | 0 | 0 | 291 | 183 | 193 | 0 | 1155 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 267 | 228 | 0 | 0 | 316 | 199 | 210 | 0 | 1255 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 165 | 0 | 0 | 596 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 267 | 228 | 0 | 0 | 316 | 34 | 0 | 210 | 659 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | | | Perm | Perm | | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | 8 | | | |
| Permitted Phases | | | | | | 6 | 8 | | | | | |
| Actuated Green, G (s) | 11.1 | 22.2 | | | 7.1 | 7.1 | | 22.4 | 22.4 | | | |
| Effective Green, g (s) | 13.1 | 24.2 | | | 9.1 | 9.1 | | 24.4 | 24.4 | | | |
| Actuated g/C Ratio | 0.25 | 0.46 | | | 0.17 | 0.17 | | 0.46 | 0.46 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 402 | 1573 | | | 850 | 265 | | 793 | 1249 | | | |
| v/s Ratio Prot | c0.17 | 0.07 | | | c0.06 | | | | c0.24 | | | |
| v/s Ratio Perm | | | | | | 0.02 | | 0.12 | | | | |
| v/c Ratio | 0.66 | 0.14 | | | 0.37 | 0.13 | | 0.26 | 0.53 | | | |
| Uniform Delay, d1 | 17.8 | 8.2 | | | 19.2 | 18.4 | | 8.6 | 10.0 | | | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 4.1 | 0.0 | | | 0.3 | 0.2 | | 0.2 | 0.4 | | | |
| Delay (s) | 21.9 | 8.3 | | | 19.5 | 18.6 | | 8.8 | 10.4 | | | |
| Level of Service | C | A | | | B | B | | A | B | | | |
| Approach Delay (s) | | 15.6 | | | 19.2 | | | 10.2 | | | 0.0 | |
| Approach LOS | | B | | | B | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 13.1 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 52.6 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 83.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 0.96 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 4842 | | 1615 | 4838 | | 1615 | 3281 | | 1615 | 3299 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.54 | 1.00 | | 0.68 | 1.00 | |
| Satd. Flow (perm) | 1615 | 4842 | | 1615 | 4838 | | 920 | 3281 | | 1151 | 3299 | |
| Volume (vph) | 110 | 1025 | 111 | 27 | 277 | 32 | 95 | 81 | 30 | 89 | 137 | 42 |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 117 | 1090 | 118 | 29 | 295 | 34 | 101 | 86 | 32 | 95 | 146 | 45 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 12 | 0 | 0 | 27 | 0 | 0 | 36 | 0 |
| Lane Group Flow (vph) | 117 | 1198 | 0 | 29 | 317 | 0 | 101 | 91 | 0 | 95 | 155 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | pm+pt | | | pm+pt | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 7.3 | 35.9 | | 3.0 | 31.6 | | 14.8 | 9.0 | | 14.6 | 8.9 | |
| Effective Green, g (s) | 9.3 | 37.9 | | 5.0 | 33.6 | | 18.8 | 11.0 | | 18.6 | 10.9 | |
| Actuated g/C Ratio | 0.13 | 0.54 | | 0.07 | 0.48 | | 0.27 | 0.16 | | 0.27 | 0.16 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 216 | 2637 | | 116 | 2336 | | 326 | 519 | | 359 | 517 | |
| v/s Ratio Prot | c0.07 | c0.25 | | 0.02 | 0.07 | | c0.03 | 0.03 | | 0.03 | c0.05 | |
| v/s Ratio Perm | | | | | | | 0.05 | | | 0.04 | | |
| v/c Ratio | 0.54 | 0.45 | | 0.25 | 0.14 | | 0.31 | 0.18 | | 0.26 | 0.30 | |
| Uniform Delay, d1 | 28.2 | 9.6 | | 30.5 | 10.0 | | 19.8 | 25.4 | | 19.9 | 26.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 2.8 | 0.1 | | 1.1 | 0.0 | | 0.5 | 0.2 | | 0.4 | 0.3 | |
| Delay (s) | 30.9 | 9.7 | | 31.7 | 10.0 | | 20.3 | 25.5 | | 20.2 | 26.3 | |
| Level of Service | C | A | | C | A | | C | C | | C | C | |
| Approach Delay (s) | | 11.6 | | | 11.7 | | | 23.1 | | | 24.3 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 14.4 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 69.6 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 51.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.96 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3291 | | 1615 | 3298 | | 1615 | 1800 | 1530 | 1615 | 1777 | |
| Flt Permitted | 0.62 | 1.00 | | 0.47 | 1.00 | | 0.61 | 1.00 | 1.00 | 0.62 | 1.00 | |
| Satd. Flow (perm) | 1062 | 3291 | | 806 | 3298 | | 1041 | 1800 | 1530 | 1055 | 1777 | |
| Volume (vph) | 32 | 306 | 103 | 54 | 137 | 43 | 79 | 153 | 140 | 68 | 145 | 13 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 36 | 346 | 116 | 61 | 154 | 48 | 89 | 172 | 157 | 76 | 163 | 15 |
| RTOR Reduction (vph) | 0 | 37 | 0 | 0 | 21 | 0 | 0 | 0 | 104 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 36 | 425 | 0 | 61 | 181 | 0 | 89 | 172 | 53 | 76 | 173 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 17.8 | 17.8 | | 17.8 | 17.8 | | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | |
| Effective Green, g (s) | 19.8 | 19.8 | | 19.8 | 19.8 | | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | |
| Actuated g/C Ratio | 0.55 | 0.55 | | 0.55 | 0.55 | | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 587 | 1820 | | 446 | 1824 | | 349 | 603 | 513 | 354 | 596 | |
| v/s Ratio Prot | | c0.13 | | | 0.05 | | | 0.10 | | | c0.10 | |
| v/s Ratio Perm | 0.03 | | | 0.08 | | | 0.09 | | 0.03 | 0.07 | | |
| v/c Ratio | 0.06 | 0.23 | | 0.14 | 0.10 | | 0.26 | 0.29 | 0.10 | 0.21 | 0.29 | |
| Uniform Delay, d1 | 3.7 | 4.1 | | 3.9 | 3.8 | | 8.7 | 8.7 | 8.2 | 8.5 | 8.8 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.1 | 0.0 | | 0.4 | 0.3 | 0.1 | 0.3 | 0.3 | |
| Delay (s) | 3.7 | 4.2 | | 4.0 | 3.8 | | 9.0 | 9.0 | 8.3 | 8.8 | 9.0 | |
| Level of Service | A | A | | A | A | | A | A | A | A | A | |
| Approach Delay (s) | | 4.1 | | | 3.9 | | | 8.7 | | | 9.0 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.25 | | |
| Actuated Cycle Length (s) | 35.8 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 42.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 0.91 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.98 | |
| Satd. Flow (prot) | 1615 | 3420 | 3420 | 1530 | 1614 | |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 1.00 | 0.98 | |
| Satd. Flow (perm) | 1016 | 3420 | 3420 | 1530 | 1614 | |
| Volume (vph) | 16 | 535 | 204 | 24 | 15 | 27 |
| Peak-hour factor, PHF | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Adj. Flow (vph) | 20 | 652 | 249 | 29 | 18 | 33 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 5 | 29 | 0 |
| Lane Group Flow (vph) | 20 | 652 | 249 | 24 | 22 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Actuated Green, G (s) | 61.3 | 61.3 | 61.3 | 61.3 | 6.7 | |
| Effective Green, g (s) | 63.3 | 63.3 | 63.3 | 63.3 | 8.7 | |
| Actuated g/C Ratio | 0.83 | 0.83 | 0.83 | 0.83 | 0.11 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 846 | 2849 | 2849 | 1274 | 185 | |
| v/s Ratio Prot | | c0.19 | 0.07 | | c0.01 | |
| v/s Ratio Perm | 0.02 | | | 0.02 | | |
| v/c Ratio | 0.02 | 0.23 | 0.09 | 0.02 | 0.12 | |
| Uniform Delay, d1 | 1.1 | 1.3 | 1.1 | 1.1 | 30.2 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | |
| Delay (s) | 1.1 | 1.4 | 1.2 | 1.1 | 30.5 | |
| Level of Service | A | A | A | A | C | |
| Approach Delay (s) | | 1.3 | 1.2 | | 30.5 | |
| Approach LOS | | A | A | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 2.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.21 | | |
| Actuated Cycle Length (s) | 76.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 25.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3351 | | 1615 | 3358 | | 1615 | 3344 | | 1615 | 3329 | |
| Flt Permitted | 0.61 | 1.00 | | 0.38 | 1.00 | | 0.36 | 1.00 | | 0.48 | 1.00 | |
| Satd. Flow (perm) | 1041 | 3351 | | 646 | 3358 | | 604 | 3344 | | 813 | 3329 | |
| Volume (vph) | 103 | 393 | 61 | 43 | 153 | 21 | 30 | 290 | 51 | 47 | 403 | 87 |
| Peak-hour factor, PHF | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Adj. Flow (vph) | 132 | 504 | 78 | 55 | 196 | 27 | 38 | 372 | 65 | 60 | 517 | 112 |
| RTOR Reduction (vph) | 0 | 18 | 0 | 0 | 15 | 0 | 0 | 20 | 0 | 0 | 26 | 0 |
| Lane Group Flow (vph) | 132 | 564 | 0 | 55 | 208 | 0 | 38 | 417 | 0 | 60 | 603 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 11.4 | 11.4 | | 11.4 | 11.4 | | 11.7 | 11.7 | | 11.7 | 11.7 | |
| Effective Green, g (s) | 13.4 | 13.4 | | 13.4 | 13.4 | | 13.7 | 13.7 | | 13.7 | 13.7 | |
| Actuated g/C Ratio | 0.43 | 0.43 | | 0.43 | 0.43 | | 0.44 | 0.44 | | 0.44 | 0.44 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 449 | 1444 | | 278 | 1447 | | 266 | 1473 | | 358 | 1466 | |
| v/s Ratio Prot | | c0.17 | | | 0.06 | | | 0.12 | | | c0.18 | |
| v/s Ratio Perm | 0.13 | | | 0.09 | | | 0.06 | | | 0.07 | | |
| v/c Ratio | 0.29 | 0.39 | | 0.20 | 0.14 | | 0.14 | 0.28 | | 0.17 | 0.41 | |
| Uniform Delay, d1 | 5.8 | 6.1 | | 5.5 | 5.4 | | 5.2 | 5.6 | | 5.3 | 5.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.4 | 0.2 | | 0.4 | 0.0 | | 0.2 | 0.1 | | 0.2 | 0.2 | |
| Delay (s) | 6.1 | 6.2 | | 5.9 | 5.4 | | 5.4 | 5.7 | | 5.5 | 6.1 | |
| Level of Service | A | A | | A | A | | A | A | | A | A | |
| Approach Delay (s) | | 6.2 | | | 5.5 | | | 5.7 | | | 6.1 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 31.1 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 48.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 1.00 | | | 0.91 | | | 0.94 | |
| Flt Protected | | 1.00 | | | 0.98 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 3377 | | | 3355 | | | 1618 | | | 1695 | |
| Flt Permitted | | 0.95 | | | 0.72 | | | 0.99 | | | 1.00 | |
| Satd. Flow (perm) | | 3200 | | | 2450 | | | 1618 | | | 1695 | |
| Volume (vph) | 11 | 425 | 36 | 116 | 191 | 1 | 37 | 21 | 124 | 3 | 30 | 23 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 13 | 494 | 42 | 135 | 222 | 1 | 43 | 24 | 144 | 3 | 35 | 27 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 24 | 0 |
| Lane Group Flow (vph) | 0 | 543 | 0 | 0 | 358 | 0 | 0 | 99 | 0 | 0 | 41 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Split | | | Split | | |
| Protected Phases | | 2 | | | 6 | | 8 | 8 | | 4 | 4 | |
| Permitted Phases | 2 | | | 6 | | | | | | | | |
| Actuated Green, G (s) | | 20.5 | | | 20.5 | | | 7.7 | | | 2.8 | |
| Effective Green, g (s) | | 22.5 | | | 22.5 | | | 9.7 | | | 4.8 | |
| Actuated g/C Ratio | | 0.52 | | | 0.52 | | | 0.23 | | | 0.11 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1674 | | | 1282 | | | 365 | | | 189 | |
| v/s Ratio Prot | | | | | | | | c0.06 | | | c0.02 | |
| v/s Ratio Perm | | c0.17 | | | 0.15 | | | | | | | |
| v/c Ratio | | 0.32 | | | 0.28 | | | 0.27 | | | 0.22 | |
| Uniform Delay, d1 | | 5.9 | | | 5.7 | | | 13.7 | | | 17.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.1 | | | 0.4 | | | 0.6 | |
| Delay (s) | | 6.0 | | | 5.8 | | | 14.1 | | | 18.0 | |
| Level of Service | | A | | | A | | | B | | | B | |
| Approach Delay (s) | | 6.0 | | | 5.8 | | | 14.1 | | | 18.0 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.29 | | |
| Actuated Cycle Length (s) | 43.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 0.95 | | | 0.95 | |
| Frt | | 0.99 | | | 0.99 | | | 0.93 | | | 0.96 | |
| Flt Protected | | 0.99 | | | 0.99 | | | 1.00 | | | 0.98 | |
| Satd. Flow (prot) | | 3374 | | | 3363 | | | 3167 | | | 3218 | |
| Flt Permitted | | 0.87 | | | 0.86 | | | 0.93 | | | 0.82 | |
| Satd. Flow (perm) | | 2956 | | | 2906 | | | 2954 | | | 2683 | |
| Volume (vph) | 87 | 436 | 20 | 41 | 215 | 17 | 8 | 66 | 67 | 125 | 126 | 99 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 98 | 490 | 22 | 46 | 242 | 19 | 9 | 74 | 75 | 140 | 142 | 111 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 6 | 0 | 0 | 48 | 0 | 0 | 63 | 0 |
| Lane Group Flow (vph) | 0 | 607 | 0 | 0 | 301 | 0 | 0 | 110 | 0 | 0 | 330 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 13.4 | | | 13.4 | | | 9.0 | | | 9.0 | |
| Effective Green, g (s) | | 15.4 | | | 15.4 | | | 11.0 | | | 11.0 | |
| Actuated g/C Ratio | | 0.51 | | | 0.51 | | | 0.36 | | | 0.36 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1497 | | | 1472 | | | 1069 | | | 971 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.21 | | | 0.10 | | | 0.04 | | | c0.12 | |
| v/c Ratio | | 0.41 | | | 0.20 | | | 0.10 | | | 0.34 | |
| Uniform Delay, d1 | | 4.7 | | | 4.1 | | | 6.4 | | | 7.1 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.2 | | | 0.1 | | | 0.0 | | | 0.2 | |
| Delay (s) | | 4.8 | | | 4.2 | | | 6.5 | | | 7.3 | |
| Level of Service | | A | | | A | | | A | | | A | |
| Approach Delay (s) | | 4.8 | | | 4.2 | | | 6.5 | | | 7.3 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.5 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.36 | | |
| Actuated Cycle Length (s) | 30.4 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.97 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3389 | | 1615 | 3315 | | 1615 | 3262 | | 1615 | 3233 | |
| Flt Permitted | 0.52 | 1.00 | | 0.38 | 1.00 | | 0.65 | 1.00 | | 0.69 | 1.00 | |
| Satd. Flow (perm) | 878 | 3389 | | 643 | 3315 | | 1104 | 3262 | | 1181 | 3233 | |
| Volume (vph) | 52 | 481 | 31 | 36 | 249 | 64 | 14 | 50 | 22 | 82 | 81 | 47 |
| Peak-hour factor, PHF | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Adj. Flow (vph) | 66 | 609 | 39 | 46 | 315 | 81 | 18 | 63 | 28 | 104 | 103 | 59 |
| RTOR Reduction (vph) | 0 | 5 | 0 | 0 | 23 | 0 | 0 | 20 | 0 | 0 | 42 | 0 |
| Lane Group Flow (vph) | 66 | 643 | 0 | 46 | 373 | 0 | 18 | 71 | 0 | 104 | 120 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 23.9 | 23.9 | | 23.9 | 23.9 | | 10.1 | 10.1 | | 10.1 | 10.1 | |
| Effective Green, g (s) | 25.9 | 25.9 | | 25.9 | 25.9 | | 12.1 | 12.1 | | 12.1 | 12.1 | |
| Actuated g/C Ratio | 0.62 | 0.62 | | 0.62 | 0.62 | | 0.29 | 0.29 | | 0.29 | 0.29 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 541 | 2090 | | 397 | 2044 | | 318 | 940 | | 340 | 931 | |
| v/s Ratio Prot | | c0.19 | | | 0.11 | | | 0.02 | | | 0.04 | |
| v/s Ratio Perm | 0.08 | | | 0.07 | | | 0.02 | | | c0.09 | | |
| v/c Ratio | 0.12 | 0.31 | | 0.12 | 0.18 | | 0.06 | 0.08 | | 0.31 | 0.13 | |
| Uniform Delay, d1 | 3.3 | 3.8 | | 3.3 | 3.5 | | 10.8 | 10.9 | | 11.7 | 11.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.1 | 0.1 | | 0.1 | 0.0 | | 0.1 | 0.0 | | 0.5 | 0.1 | |
| Delay (s) | 3.4 | 3.9 | | 3.5 | 3.5 | | 10.9 | 10.9 | | 12.2 | 11.1 | |
| Level of Service | A | A | | A | A | | B | B | | B | B | |
| Approach Delay (s) | | 3.9 | | | 3.5 | | | 10.9 | | | 11.5 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.6 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.30 | | |
| Actuated Cycle Length (s) | 42.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 40.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# PM PEAK HOUR

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Volume (veh/h) | 539 | 77 | 121 | 607 | 81 | 177 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 567 | 81 | 127 | 639 | 85 | 186 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | | |
| Median storage veh) | | | | | 0 | |
| Upstream signal (ft) | | | | 832 | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 648 | | 1182 | 324 |
| vC1, stage 1 conf vol | | | | | 608 | |
| vC2, stage 2 conf vol | | | | | 574 | |
| vCu, unblocked vol | | | 648 | | 1182 | 324 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 87 | | 61 | 72 |
| cM capacity (veh/h) | | | 947 | | 219 | 677 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 |
|---|---|---|---|---|---|---|---|
| Volume Total | 378 | 270 | 127 | 319 | 319 | 85 | 186 |
| Volume Left | 0 | 0 | 127 | 0 | 0 | 85 | 0 |
| Volume Right | 0 | 81 | 0 | 0 | 0 | 0 | 186 |
| cSH | 1700 | 1700 | 947 | 1700 | 1700 | 219 | 677 |
| Volume to Capacity | 0.22 | 0.16 | 0.13 | 0.19 | 0.19 | 0.39 | 0.28 |
| Queue Length 95th (ft) | 0 | 0 | 12 | 0 | 0 | 43 | 28 |
| Control Delay (s) | 0.0 | 0.0 | 9.4 | 0.0 | 0.0 | 31.5 | 12.3 |
| Lane LOS | | | A | | | D | B |
| Approach Delay (s) | 0.0 | | 1.6 | | | 18.3 | |
| Approach LOS | | | | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.7 | | |
| Intersection Capacity Utilization | 40.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 0.95 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.98 | | | 1.00 | | | 0.91 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.97 | | | 0.98 | |
| Satd. Flow (prot) | 1615 | 3419 | | 1615 | 3349 | | | 1742 | | | 3044 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.81 | | | 0.86 | |
| Satd. Flow (perm) | 1615 | 3419 | | 1615 | 3349 | | | 1453 | | | 2655 | |
| Volume (vph) | 152 | 456 | 1 | 1 | 499 | 80 | 2 | 1 | 0 | 86 | 2 | 144 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 165 | 496 | 1 | 1 | 542 | 87 | 2 | 1 | 0 | 93 | 2 | 157 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 131 | 0 |
| Lane Group Flow (vph) | 165 | 497 | 0 | 1 | 616 | 0 | 0 | 3 | 0 | 0 | 121 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 8.7 | 30.8 | | 0.9 | 23.0 | | | 6.3 | | | 6.3 | |
| Effective Green, g (s) | 10.7 | 32.8 | | 2.9 | 25.0 | | | 8.3 | | | 8.3 | |
| Actuated g/C Ratio | 0.21 | 0.66 | | 0.06 | 0.50 | | | 0.17 | | | 0.17 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 346 | 2243 | | 94 | 1675 | | | 241 | | | 441 | |
| v/s Ratio Prot | c0.10 | 0.15 | | 0.00 | c0.18 | | | | | | | |
| v/s Ratio Perm | | | | | | | | 0.00 | | | c0.05 | |
| v/c Ratio | 0.48 | 0.22 | | 0.01 | 0.37 | | | 0.01 | | | 0.27 | |
| Uniform Delay, d1 | 17.2 | 3.5 | | 22.2 | 7.7 | | | 17.4 | | | 18.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 1.0 | 0.1 | | 0.0 | 0.1 | | | 0.0 | | | 0.3 | |
| Delay (s) | 18.2 | 3.5 | | 22.2 | 7.8 | | | 17.4 | | | 18.6 | |
| Level of Service | B | A | | C | A | | | B | | | B | |
| Approach Delay (s) | | 7.2 | | | 7.8 | | | 17.4 | | | 18.6 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 9.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.36 | | |
| Actuated Cycle Length (s) | 50.0 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 44.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 1.00 | | | 0.91 | | | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.99 | | | 0.97 | |
| Satd. Flow (prot) | 1615 | 3413 | | 1615 | 3409 | | | 1620 | | | 1686 | |
| Flt Permitted | 0.41 | 1.00 | | 0.44 | 1.00 | | | 0.96 | | | 0.90 | |
| Satd. Flow (perm) | 693 | 3413 | | 748 | 3409 | | | 1563 | | | 1565 | |
| Volume (vph) | 8 | 514 | 7 | 20 | 575 | 12 | 8 | 8 | 37 | 10 | 4 | 6 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 9 | 553 | 8 | 22 | 618 | 13 | 9 | 9 | 40 | 11 | 4 | 6 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 35 | 0 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 9 | 560 | 0 | 22 | 630 | 0 | 0 | 23 | 0 | 0 | 16 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 48.5 | 48.5 | | 48.5 | 48.5 | | | 5.3 | | | 5.3 | |
| Effective Green, g (s) | 50.5 | 50.5 | | 50.5 | 50.5 | | | 7.3 | | | 7.3 | |
| Actuated g/C Ratio | 0.82 | 0.82 | | 0.82 | 0.82 | | | 0.12 | | | 0.12 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 566 | 2789 | | 611 | 2786 | | | 185 | | | 185 | |
| v/s Ratio Prot | | 0.16 | | | c0.18 | | | | | | | |
| v/s Ratio Perm | 0.01 | | | 0.03 | | | | c0.01 | | | 0.01 | |
| v/c Ratio | 0.02 | 0.20 | | 0.04 | 0.23 | | | 0.12 | | | 0.08 | |
| Uniform Delay, d1 | 1.0 | 1.2 | | 1.1 | 1.3 | | | 24.4 | | | 24.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.3 | | | 0.2 | |
| Delay (s) | 1.1 | 1.3 | | 1.1 | 1.3 | | | 24.7 | | | 24.5 | |
| Level of Service | A | A | | A | A | | | C | | | C | |
| Approach Delay (s) | | 1.3 | | | 1.3 | | | 24.7 | | | 24.5 | |
| Approach LOS | | A | | | A | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 2.7 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.21 | | |
| Actuated Cycle Length (s) | 61.8 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 28.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.97 | | 1.00 | 0.99 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3300 | | 1615 | 3323 | | 1615 | 3377 | | 1615 | 3347 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.40 | 1.00 | | 0.38 | 1.00 | |
| Satd. Flow (perm) | 1615 | 3300 | | 1615 | 3323 | | 688 | 3377 | | 648 | 3347 | |
| Volume (vph) | 78 | 368 | 112 | 72 | 434 | 102 | 125 | 453 | 42 | 77 | 397 | 66 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 82 | 387 | 118 | 76 | 457 | 107 | 132 | 477 | 44 | 81 | 418 | 69 |
| RTOR Reduction (vph) | 0 | 36 | 0 | 0 | 26 | 0 | 0 | 10 | 0 | 0 | 20 | 0 |
| Lane Group Flow (vph) | 82 | 469 | 0 | 76 | 538 | 0 | 132 | 511 | 0 | 81 | 467 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 4.3 | 13.6 | | 4.2 | 13.5 | | 15.7 | 15.7 | | 15.7 | 15.7 | |
| Effective Green, g (s) | 6.3 | 15.6 | | 6.2 | 15.5 | | 17.7 | 17.7 | | 17.7 | 17.7 | |
| Actuated g/C Ratio | 0.14 | 0.34 | | 0.14 | 0.34 | | 0.39 | 0.39 | | 0.39 | 0.39 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 224 | 1131 | | 220 | 1132 | | 268 | 1314 | | 252 | 1302 | |
| v/s Ratio Prot | c0.05 | 0.14 | | 0.05 | c0.16 | | | 0.15 | | | 0.14 | |
| v/s Ratio Perm | | | | | | | c0.19 | | | 0.12 | | |
| v/c Ratio | 0.37 | 0.41 | | 0.35 | 0.48 | | 0.49 | 0.39 | | 0.32 | 0.36 | |
| Uniform Delay, d1 | 17.8 | 11.5 | | 17.8 | 11.8 | | 10.5 | 10.0 | | 9.7 | 9.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.0 | 0.2 | | 0.9 | 0.3 | | 1.4 | 0.2 | | 0.7 | 0.2 | |
| Delay (s) | 18.8 | 11.7 | | 18.8 | 12.1 | | 11.9 | 10.2 | | 10.4 | 10.0 | |
| Level of Service | B | B | | B | B | | B | B | | B | B | |
| Approach Delay (s) | | 12.7 | | | 12.9 | | | 10.5 | | | 10.1 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 11.6 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.45 | | |
| Actuated Cycle Length (s) | 45.5 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 55.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.98 | | | 0.95 | | | 0.97 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.98 | | | 0.96 | |
| Satd. Flow (prot) | 1615 | 3415 | | 1615 | 3364 | | | 1675 | | | 1689 | |
| Flt Permitted | 0.39 | 1.00 | | 0.44 | 1.00 | | | 0.93 | | | 0.80 | |
| Satd. Flow (perm) | 655 | 3415 | | 743 | 3364 | | | 1582 | | | 1405 | |
| Volume (vph) | 15 | 513 | 5 | 10 | 555 | 67 | 5 | 4 | 6 | 73 | 4 | 18 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 16 | 540 | 5 | 11 | 584 | 71 | 5 | 4 | 6 | 77 | 4 | 19 |
| RTOR Reduction (vph) | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 5 | 0 | 0 | 15 | 0 |
| Lane Group Flow (vph) | 16 | 544 | 0 | 11 | 648 | 0 | 0 | 10 | 0 | 0 | 85 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 37.0 | 37.0 | | 37.0 | 37.0 | | | 9.7 | | | 9.7 | |
| Effective Green, g (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | | 11.7 | | | 11.7 | |
| Actuated g/C Ratio | 0.71 | 0.71 | | 0.71 | 0.71 | | | 0.21 | | | 0.21 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 467 | 2435 | | 530 | 2398 | | | 338 | | | 301 | |
| v/s Ratio Prot | | 0.16 | | | c0.19 | | | | | | | |
| v/s Ratio Perm | 0.02 | | | 0.01 | | | | 0.01 | | | c0.06 | |
| v/c Ratio | 0.03 | 0.22 | | 0.02 | 0.27 | | | 0.03 | | | 0.28 | |
| Uniform Delay, d1 | 2.3 | 2.7 | | 2.3 | 2.8 | | | 17.0 | | | 18.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.0 | | 0.0 | 0.1 | | | 0.0 | | | 0.5 | |
| Delay (s) | 2.3 | 2.7 | | 2.3 | 2.9 | | | 17.0 | | | 18.5 | |
| Level of Service | A | A | | A | A | | | B | | | B | |
| Approach Delay (s) | | 2.7 | | | 2.8 | | | 17.0 | | | 18.5 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.27 | | |
| Actuated Cycle Length (s) | 54.7 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 36.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1700 | 1800 | 1700 | 1800 |
| Total Lost time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | 0.98 | | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 3358 | | 1615 | 3420 | 1615 | 1530 |
| Flt Permitted | 1.00 | | 0.36 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 3358 | | 606 | 3420 | 1615 | 1530 |
| Volume (vph) | 625 | 85 | 7 | 671 | 70 | 14 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 651 | 89 | 7 | 699 | 73 | 15 |
| RTOR Reduction (vph) | 9 | 0 | 0 | 0 | 0 | 13 |
| Lane Group Flow (vph) | 731 | 0 | 7 | 699 | 73 | 2 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | Perm | | | Perm |
| Protected Phases | 2 | | | 6 | 8 | |
| Permitted Phases | | | 6 | | | 8 |
| Actuated Green, G (s) | 46.4 | | 46.4 | 46.4 | 8.0 | 8.0 |
| Effective Green, g (s) | 48.4 | | 48.4 | 48.4 | 10.0 | 10.0 |
| Actuated g/C Ratio | 0.78 | | 0.78 | 0.78 | 0.16 | 0.16 |
| Clearance Time (s) | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 2605 | | 470 | 2653 | 259 | 245 |
| v/s Ratio Prot | c0.22 | | | 0.20 | c0.05 | |
| v/s Ratio Perm | | | 0.01 | | | 0.00 |
| v/c Ratio | 0.28 | | 0.01 | 0.26 | 0.28 | 0.01 |
| Uniform Delay, d1 | 2.0 | | 1.6 | 2.0 | 23.0 | 22.0 |
| Progression Factor | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | | 0.0 | 0.1 | 0.6 | 0.0 |
| Delay (s) | 2.1 | | 1.6 | 2.0 | 23.6 | 22.1 |
| Level of Service | A | | A | A | C | C |
| Approach Delay (s) | 2.1 | | | 2.0 | 23.4 | |
| Approach LOS | A | | | A | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 3.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.28 | | |
| Actuated Cycle Length (s) | 62.4 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 32.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1615 | 3420 | 1530 | 1615 | 3371 | | 1615 | 3364 | | 1615 | 3420 | 1530 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.40 | 1.00 | | 0.64 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1615 | 3420 | 1530 | 1615 | 3371 | | 674 | 3364 | | 1082 | 3420 | 1530 |
| Volume (vph) | 53 | 323 | 329 | 184 | 503 | 53 | 138 | 145 | 18 | 27 | 244 | 214 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 60 | 363 | 370 | 207 | 565 | 60 | 155 | 163 | 20 | 30 | 274 | 240 |
| RTOR Reduction (vph) | 0 | 0 | 241 | 0 | 8 | 0 | 0 | 10 | 0 | 0 | 0 | 195 |
| Lane Group Flow (vph) | 60 | 363 | 129 | 207 | 617 | 0 | 155 | 173 | 0 | 30 | 274 | 45 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | Perm | Prot | | | pm+pt | | | pm+pt | | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | | 8 | | | 4 | | 4 |
| Actuated Green, G (s) | 4.3 | 19.9 | 19.9 | 10.2 | 25.8 | | 20.5 | 14.3 | | 12.0 | 9.8 | 9.8 |
| Effective Green, g (s) | 6.3 | 21.9 | 21.9 | 12.2 | 27.8 | | 22.5 | 16.3 | | 16.0 | 11.8 | 11.8 |
| Actuated g/C Ratio | 0.10 | 0.35 | 0.35 | 0.19 | 0.44 | | 0.36 | 0.26 | | 0.26 | 0.19 | 0.19 |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 163 | 1196 | 535 | 315 | 1497 | | 373 | 876 | | 312 | 645 | 288 |
| v/s Ratio Prot | 0.04 | 0.11 | | c0.13 | c0.18 | | c0.06 | 0.05 | | 0.01 | c0.08 | |
| v/s Ratio Perm | | | 0.08 | | | | 0.09 | | | 0.02 | | 0.03 |
| v/c Ratio | 0.37 | 0.30 | 0.24 | 0.66 | 0.41 | | 0.42 | 0.20 | | 0.10 | 0.42 | 0.16 |
| Uniform Delay, d1 | 26.3 | 14.8 | 14.5 | 23.3 | 11.8 | | 14.4 | 18.0 | | 17.7 | 22.4 | 21.2 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.4 | 0.1 | 0.2 | 4.9 | 0.2 | | 0.8 | 0.1 | | 0.1 | 0.5 | 0.3 |
| Delay (s) | 27.7 | 14.9 | 14.7 | 28.2 | 12.0 | | 15.1 | 18.2 | | 17.8 | 22.9 | 21.5 |
| Level of Service | C | B | B | C | B | | B | B | | B | C | C |
| Approach Delay (s) | | 15.8 | | | 16.0 | | | 16.8 | | | 22.0 | |
| Approach LOS | | B | | | B | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 17.3 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.45 | | |
| Actuated Cycle Length (s) | 62.6 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 50.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | | | | 2.0 | | 2.0 | 2.0 | | | 2.0 | |
| Lane Util. Factor | | | | | 0.91 | | 1.00 | 0.95 | | | 0.95 | |
| Frt | | | | | 1.00 | | 1.00 | 1.00 | | | 0.89 | |
| Flt Protected | | | | | 1.00 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | | | | 4894 | | 1615 | 3420 | | | 3039 | |
| Flt Permitted | | | | | 1.00 | | 0.27 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | | | | 4894 | | 455 | 3420 | | | 3039 | |
| Volume (vph) | 0 | 0 | 0 | 7 | 708 | 17 | 132 | 270 | 0 | 0 | 188 | 542 |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 0 | 0 | 0 | 8 | 814 | 20 | 152 | 310 | 0 | 0 | 216 | 623 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 839 | 0 | 152 | 310 | 0 | 0 | 825 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | | Perm | | | Perm | | | | | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | | 2 | | | | | |
| Actuated Green, G (s) | | | | | 13.8 | | 19.7 | 19.7 | | | 19.7 | |
| Effective Green, g (s) | | | | | 15.8 | | 21.7 | 21.7 | | | 21.7 | |
| Actuated g/C Ratio | | | | | 0.38 | | 0.52 | 0.52 | | | 0.52 | |
| Clearance Time (s) | | | | | 4.0 | | 4.0 | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 1863 | | 238 | 1788 | | | 1589 | |
| v/s Ratio Prot | | | | | | | | 0.09 | | | 0.27 | |
| v/s Ratio Perm | | | | | 0.17 | | c0.33 | | | | | |
| v/c Ratio | | | | | 0.45 | | 0.64 | 0.17 | | | 0.52 | |
| Uniform Delay, d1 | | | | | 9.8 | | 7.1 | 5.2 | | | 6.5 | |
| Progression Factor | | | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.2 | | 5.5 | 0.0 | | | 0.3 | |
| Delay (s) | | | | | 9.8 | | 12.6 | 5.2 | | | 6.8 | |
| Level of Service | | | | | A | | B | A | | | A | |
| Approach Delay (s) | | 0.0 | | | 9.8 | | | 7.7 | | | 6.8 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.1 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.54 | | |
| Actuated Cycle Length (s) | 41.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 57.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | 1.00 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 0.97 | | | 1.00 | | 1.00 | 0.86 | | 1.00 | 0.97 | |
| Flt Protected | | 1.00 | | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 3325 | | | 3345 | | 1615 | 1543 | | 1615 | 3319 | |
| Flt Permitted | | 1.00 | | | 0.81 | | 0.53 | 1.00 | | 0.73 | 1.00 | |
| Satd. Flow (perm) | | 3325 | | | 2775 | | 902 | 1543 | | 1240 | 3319 | |
| Volume (vph) | 0 | 87 | 20 | 44 | 54 | 0 | 8 | 2 | 34 | 65 | 257 | 63 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 0 | 101 | 23 | 51 | 63 | 0 | 9 | 2 | 40 | 76 | 299 | 73 |
| RTOR Reduction (vph) | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 0 | 105 | 0 | 0 | 114 | 0 | 9 | 31 | 0 | 76 | 356 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | | 4.4 | | | 4.4 | | 24.6 | 24.6 | | 24.6 | 24.6 | |
| Effective Green, g (s) | | 6.4 | | | 6.4 | | 26.6 | 26.6 | | 26.6 | 26.6 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | | 0.72 | 0.72 | | 0.72 | 0.72 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 575 | | | 480 | | 648 | 1109 | | 891 | 2386 | |
| v/s Ratio Prot | | 0.03 | | | | | | 0.02 | | | c0.11 | |
| v/s Ratio Perm | | | | | c0.04 | | 0.01 | | | 0.06 | | |
| v/c Ratio | | 0.18 | | | 0.24 | | 0.01 | 0.03 | | 0.09 | 0.15 | |
| Uniform Delay, d1 | | 13.1 | | | 13.2 | | 1.5 | 1.5 | | 1.6 | 1.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.2 | | | 0.3 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Delay (s) | | 13.2 | | | 13.5 | | 1.5 | 1.5 | | 1.6 | 1.7 | |
| Level of Service | | B | | | B | | A | A | | A | A | |
| Approach Delay (s) | | 13.2 | | | 13.5 | | | 1.5 | | | 1.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.16 | | |
| Actuated Cycle Length (s) | 37.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 26.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.95 | | 1.00 | 0.97 | | 1.00 | 0.97 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3236 | | 1615 | 3331 | | 1615 | 3333 | | 1615 | 3358 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.64 | 1.00 | | 0.48 | 1.00 | |
| Satd. Flow (perm) | 1615 | 3236 | | 1615 | 3331 | | 1084 | 3333 | | 809 | 3358 | |
| Volume (vph) | 69 | 81 | 45 | 77 | 64 | 13 | 14 | 307 | 62 | 11 | 153 | 21 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 72 | 84 | 47 | 80 | 67 | 14 | 15 | 320 | 65 | 11 | 159 | 22 |
| RTOR Reduction (vph) | 0 | 29 | 0 | 0 | 9 | 0 | 0 | 25 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 72 | 102 | 0 | 80 | 72 | 0 | 15 | 360 | 0 | 11 | 165 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | Perm | | | Perm | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 2.5 | 9.8 | | 2.6 | 9.9 | | 7.2 | 7.2 | | 7.2 | 7.2 | |
| Effective Green, g (s) | 4.5 | 11.8 | | 4.6 | 11.9 | | 9.2 | 9.2 | | 9.2 | 9.2 | |
| Actuated g/C Ratio | 0.14 | 0.37 | | 0.15 | 0.38 | | 0.29 | 0.29 | | 0.29 | 0.29 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 230 | 1206 | | 235 | 1254 | | 316 | 970 | | 236 | 978 | |
| v/s Ratio Prot | 0.04 | c0.03 | | c0.05 | 0.02 | | | c0.11 | | | 0.05 | |
| v/s Ratio Perm | | | | | | | 0.01 | | | 0.01 | | |
| v/c Ratio | 0.31 | 0.08 | | 0.34 | 0.08 | | 0.05 | 0.37 | | 0.05 | 0.17 | |
| Uniform Delay, d1 | 12.2 | 6.4 | | 12.1 | 6.3 | | 8.1 | 8.9 | | 8.0 | 8.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.8 | 0.0 | | 0.9 | 0.0 | | 0.1 | 0.2 | | 0.1 | 0.1 | |
| Delay (s) | 12.9 | 6.4 | | 13.0 | 6.3 | | 8.1 | 9.1 | | 8.1 | 8.4 | |
| Level of Service | B | A | | B | A | | A | A | | A | A | |
| Approach Delay (s) | | 8.7 | | | 9.6 | | | 9.1 | | | 8.4 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 9.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.22 | | |
| Actuated Cycle Length (s) | 31.6 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 31.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | 2.0 | | 2.0 | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 1.00 | | 0.97 | | 1.00 | | 0.95 | | | 0.95 | |
| Frt | | 0.97 | | 1.00 | | 0.85 | | 0.96 | | | 1.00 | |
| Flt Protected | | 0.98 | | 0.95 | | 1.00 | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1706 | | 2949 | | 1530 | | 3283 | | | 3375 | |
| Flt Permitted | | 0.98 | | 0.74 | | 1.00 | | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1706 | | 2296 | | 1530 | | 3283 | | | 3375 | |
| Volume (vph) | 11 | 8 | 6 | 192 | 0 | 211 | 6 | 445 | 161 | 127 | 458 | 10 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 12 | 9 | 6 | 206 | 0 | 227 | 6 | 478 | 173 | 137 | 492 | 11 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 0 | 185 | 0 | 41 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 21 | 0 | 206 | 0 | 42 | 0 | 616 | 0 | 0 | 639 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Split | | | custom | | custom | Split | | | Split | | |
| Protected Phases | 4 | 4 | | | | | 2 | 2 | | 6 | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | |
| Actuated Green, G (s) | | 2.3 | | 8.1 | | 8.1 | | 14.3 | | | 14.5 | |
| Effective Green, g (s) | | 4.3 | | 10.1 | | 10.1 | | 16.3 | | | 16.5 | |
| Actuated g/C Ratio | | 0.08 | | 0.18 | | 0.18 | | 0.30 | | | 0.30 | |
| Clearance Time (s) | | 4.0 | | 4.0 | | 4.0 | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | 3.0 | | 3.0 | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 133 | | 420 | | 280 | | 969 | | | 1009 | |
| v/s Ratio Prot | | c0.01 | | | | | | c0.19 | | | c0.19 | |
| v/s Ratio Perm | | | | c0.09 | | 0.03 | | | | | | |
| v/c Ratio | | 0.16 | | 0.49 | | 0.15 | | 0.64 | | | 0.63 | |
| Uniform Delay, d1 | | 23.8 | | 20.2 | | 18.9 | | 16.9 | | | 16.7 | |
| Progression Factor | | 1.00 | | 1.00 | | 1.00 | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.6 | | 0.9 | | 0.2 | | 1.4 | | | 1.3 | |
| Delay (s) | | 24.3 | | 21.1 | | 19.2 | | 18.3 | | | 18.0 | |
| Level of Service | | C | | C | | B | | B | | | B | |
| Approach Delay (s) | | 24.3 | | | 20.1 | | | 18.3 | | | 18.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 18.7 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.54 | | |
| Actuated Cycle Length (s) | 55.2 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 59.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #12 K Street and 2nd Street [2009 Analysis]

| | | | |
|---|---|---|---|
| Cycle (sec): | 100 | Critical Vol./Cap.(X): | 0.236 |
| Loss Time (sec): | 0 (Y+R=4.0 sec) | Average Delay (sec/veh): | 9.3 |
| Optimal Cycle: | 0 | Level Of Service: | A |

| Street Name: | K Street | | | | | | 2nd Street | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach: | North Bound | | | South Bound | | | East Bound | | | West Bound | | |
| Movement: | L - T - R | | | L - T - R | | | L - T - R | | | L - T - R | | |
| Control: | Stop Sign | | | Stop Sign | | | Stop Sign | | | Stop Sign | | |
| Rights: | Include | | | Include | | | Include | | | Include | | |
| Min. Green: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lanes: | 0 0 1! | 0 0 | | 0 0 1! | 0 0 | | 1 0 1 | 1 0 | | 1 0 1 | 1 0 | |
| Volume Module: >> Count Date: 21 Oct 2009 << PM Peak period | | | | | | | | | | | | |
| Base Vol: | 36 | 5 | 17 | 22 | 23 | 24 | 7 | 272 | 24 | 26 | 280 | 7 |
| Growth Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Initial Bse: | 36 | 5 | 17 | 22 | 23 | 24 | 7 | 272 | 24 | 26 | 280 | 7 |
| User Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PHF Adj: | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| PHF Volume: | 39 | 5 | 19 | 24 | 25 | 26 | 8 | 297 | 26 | 28 | 306 | 8 |
| Reduct Vol: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced Vol: | 39 | 5 | 19 | 24 | 25 | 26 | 8 | 297 | 26 | 28 | 306 | 8 |
| PCE Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MLF Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FinalVolume: | 39 | 5 | 19 | 24 | 25 | 26 | 8 | 297 | 26 | 28 | 306 | 8 |
| Saturation Flow Module: | | | | | | | | | | | | |
| Adjustment: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Lanes: | 0.62 | 0.09 | 0.29 | 0.32 | 0.33 | 0.35 | 1.00 | 1.84 | 0.16 | 1.00 | 1.95 | 0.05 |
| Final Sat.: | 381 | 53 | 180 | 200 | 209 | 218 | 617 | 1256 | 112 | 619 | 1328 | 33 |
| Capacity Analysis Module: | | | | | | | | | | | | |
| Vol/Sat: | 0.10 | 0.10 | 0.10 | 0.12 | 0.12 | 0.12 | 0.01 | 0.24 | 0.23 | 0.05 | 0.23 | 0.23 |
| Crit Moves: | | | **** | | **** | | | **** | | | **** | |
| Delay/Veh: | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 8.5 | 9.4 | 9.3 | 8.7 | 9.4 | 9.3 |
| Delay Adj: | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| AdjDel/Veh: | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 8.5 | 9.4 | 9.3 | 8.7 | 9.4 | 9.3 |
| LOS by Move: | A | A | A | A | A | A | A | A | A | A | A | A |
| ApproachDel: | 9.0 | | | 9.0 | | | 9.4 | | | 9.3 | | |
| Delay Adj: | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | | |
| ApprAdjDel: | 9.0 | | | 9.0 | | | 9.4 | | | 9.3 | | |
| LOS by Appr: | A | | | A | | | A | | | A | | |
| AllWayAvgQ: | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.3 | 0.3 | 0.0 | 0.3 | 0.3 |

Note: Queue reported is the number of cars per lane.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | | 0.95 | | | 0.95 | |
| Frt | 1.00 | 1.00 | | 1.00 | 0.99 | | | 0.88 | | | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | 1615 | 3406 | | 1615 | 3403 | | | 2997 | | | 3312 | |
| Flt Permitted | 0.59 | 1.00 | | 0.54 | 1.00 | | | 0.94 | | | 0.82 | |
| Satd. Flow (perm) | 1000 | 3406 | | 925 | 3403 | | | 2810 | | | 2770 | |
| Volume (vph) | 6 | 328 | 8 | 38 | 248 | 9 | 11 | 36 | 202 | 88 | 176 | 34 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 6 | 338 | 8 | 39 | 256 | 9 | 11 | 37 | 208 | 91 | 181 | 35 |
| RTOR Reduction (vph) | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 137 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 6 | 344 | 0 | 39 | 262 | 0 | 0 | 119 | 0 | 0 | 291 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 10.2 | 10.2 | | 10.2 | 10.2 | | | 6.4 | | | 6.4 | |
| Effective Green, g (s) | 12.2 | 12.2 | | 12.2 | 12.2 | | | 8.4 | | | 8.4 | |
| Actuated g/C Ratio | 0.50 | 0.50 | | 0.50 | 0.50 | | | 0.34 | | | 0.34 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 496 | 1690 | | 459 | 1688 | | | 960 | | | 946 | |
| v/s Ratio Prot | | c0.10 | | | 0.08 | | | | | | | |
| v/s Ratio Perm | 0.01 | | | 0.04 | | | | 0.04 | | | c0.10 | |
| v/c Ratio | 0.01 | 0.20 | | 0.08 | 0.16 | | | 0.12 | | | 0.31 | |
| Uniform Delay, d1 | 3.1 | 3.5 | | 3.3 | 3.4 | | | 5.6 | | | 6.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.1 | 0.0 | | | 0.1 | | | 0.2 | |
| Delay (s) | 3.2 | 3.5 | | 3.3 | 3.4 | | | 5.6 | | | 6.1 | |
| Level of Service | A | A | | A | A | | | A | | | A | |
| Approach Delay (s) | | 3.5 | | | 3.4 | | | 5.6 | | | 6.1 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.6 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.23 | | |
| Actuated Cycle Length (s) | 24.6 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 43.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1600 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | | 2.0 | 2.0 | | |
| Lane Util. Factor | 0.95 | | 0.97 | 1.00 | | |
| Frt | 0.96 | | 1.00 | 1.00 | | |
| Flt Protected | 1.00 | | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3290 | | 2949 | 1800 | | |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3290 | | 2949 | 1800 | | |
| Volume (vph) | 483 | 164 | 671 | 324 | 0 | 0 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 519 | 176 | 722 | 348 | 0 | 0 |
| RTOR Reduction (vph) | 45 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 650 | 0 | 722 | 348 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | | | Prot | | | |
| Protected Phases | 2 | | 1 | 6 | | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 13.0 | | 14.5 | 35.5 | | |
| Effective Green, g (s) | 15.0 | | 16.5 | 35.5 | | |
| Actuated g/C Ratio | 0.42 | | 0.46 | 1.00 | | |
| Clearance Time (s) | 4.0 | | 4.0 | 4.0 | | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 1390 | | 1371 | 1800 | | |
| v/s Ratio Prot | c0.20 | | c0.24 | 0.19 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.47 | | 0.53 | 0.19 | | |
| Uniform Delay, d1 | 7.4 | | 6.7 | 0.0 | | |
| Progression Factor | 1.00 | | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.2 | | 0.4 | 0.1 | | |
| Delay (s) | 7.6 | | 7.1 | 0.1 | | |
| Level of Service | A | | A | A | | |
| Approach Delay (s) | 7.6 | | | 4.8 | 0.0 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.9 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 35.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 67.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.91 | 1.00 | | 1.00 | 0.88 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1615 | 3420 | | | 4914 | 1530 | | 1715 | 2693 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1615 | 3420 | | | 4914 | 1530 | | 1715 | 2693 | | | |
| Volume (vph) | 262 | 199 | 0 | 0 | 913 | 517 | 129 | 1 | 266 | 0 | 0 | 0 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 273 | 207 | 0 | 0 | 951 | 539 | 134 | 1 | 277 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 317 | 0 | 0 | 214 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 273 | 207 | 0 | 0 | 951 | 222 | 0 | 135 | 63 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | | | Perm | Perm | | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | | 8 | 8 | | | |
| Permitted Phases | | | | | | 6 | 8 | | | | | |
| Actuated Green, G (s) | 12.2 | 37.4 | | | 21.2 | 21.2 | | 10.9 | 10.9 | | | |
| Effective Green, g (s) | 14.2 | 39.4 | | | 23.2 | 23.2 | | 12.9 | 12.9 | | | |
| Actuated g/C Ratio | 0.25 | 0.70 | | | 0.41 | 0.41 | | 0.23 | 0.23 | | | |
| Clearance Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 407 | 2393 | | | 2025 | 630 | | 393 | 617 | | | |
| v/s Ratio Prot | c0.17 | 0.06 | | | c0.19 | | | | 0.02 | | | |
| v/s Ratio Perm | | | | | | 0.15 | | 0.08 | | | | |
| v/c Ratio | 0.67 | 0.09 | | | 0.47 | 0.35 | | 0.34 | 0.10 | | | |
| Uniform Delay, d1 | 18.9 | 2.7 | | | 12.1 | 11.4 | | 18.2 | 17.1 | | | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 4.3 | 0.0 | | | 0.2 | 0.3 | | 0.5 | 0.1 | | | |
| Delay (s) | 23.3 | 2.7 | | | 12.2 | 11.7 | | 18.7 | 17.2 | | | |
| Level of Service | C | A | | | B | B | | B | B | | | |
| Approach Delay (s) | | 14.4 | | | 12.1 | | | 17.7 | | | 0.0 | |
| Approach LOS | | B | | | B | | | B | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 13.5 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 56.3 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 67.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.91 | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.97 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 4855 | | 1615 | 4858 | | 1615 | 3315 | | 1615 | 3224 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.36 | 1.00 | | 0.59 | 1.00 | |
| Satd. Flow (perm) | 1615 | 4855 | | 1615 | 4858 | | 609 | 3315 | | 1002 | 3224 | |
| Volume (vph) | 78 | 320 | 28 | 85 | 990 | 81 | 270 | 194 | 50 | 56 | 146 | 90 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 84 | 344 | 30 | 91 | 1065 | 87 | 290 | 209 | 54 | 60 | 157 | 97 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 9 | 0 | 0 | 29 | 0 | 0 | 83 | 0 |
| Lane Group Flow (vph) | 84 | 365 | 0 | 91 | 1143 | 0 | 290 | 234 | 0 | 60 | 171 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Prot | | | Prot | | | pm+pt | | | pm+pt | | |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | | | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 6.2 | 26.2 | | 6.6 | 26.6 | | 22.3 | 14.6 | | 11.3 | 7.6 | |
| Effective Green, g (s) | 8.2 | 28.2 | | 8.6 | 28.6 | | 24.3 | 16.6 | | 15.3 | 9.6 | |
| Actuated g/C Ratio | 0.12 | 0.42 | | 0.13 | 0.43 | | 0.36 | 0.25 | | 0.23 | 0.14 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 197 | 2040 | | 207 | 2071 | | 411 | 820 | | 281 | 461 | |
| v/s Ratio Prot | 0.05 | 0.08 | | c0.06 | c0.24 | | c0.13 | 0.07 | | 0.02 | c0.05 | |
| v/s Ratio Perm | | | | | | | 0.12 | | | 0.03 | | |
| v/c Ratio | 0.43 | 0.18 | | 0.44 | 0.55 | | 0.71 | 0.28 | | 0.21 | 0.37 | |
| Uniform Delay, d1 | 27.3 | 12.2 | | 27.0 | 14.4 | | 16.9 | 20.4 | | 20.8 | 26.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.5 | 0.0 | | 1.5 | 0.3 | | 5.4 | 0.2 | | 0.4 | 0.5 | |
| Delay (s) | 28.8 | 12.2 | | 28.5 | 14.8 | | 22.3 | 20.6 | | 21.1 | 26.5 | |
| Level of Service | C | B | | C | B | | C | C | | C | C | |
| Approach Delay (s) | | 15.3 | | | 15.8 | | | 21.5 | | | 25.5 | |
| Approach LOS | | B | | | B | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 18.1 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.51 | | |
| Actuated Cycle Length (s) | 67.1 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 64.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3275 | | 1615 | 3360 | | 1615 | 1800 | 1530 | 1615 | 1774 | |
| Flt Permitted | 0.47 | 1.00 | | 0.56 | 1.00 | | 0.60 | 1.00 | 1.00 | 0.58 | 1.00 | |
| Satd. Flow (perm) | 804 | 3275 | | 954 | 3360 | | 1024 | 1800 | 1530 | 989 | 1774 | |
| Volume (vph) | 29 | 216 | 85 | 127 | 390 | 52 | 144 | 195 | 93 | 47 | 163 | 17 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 30 | 225 | 89 | 132 | 406 | 54 | 150 | 203 | 97 | 49 | 170 | 18 |
| RTOR Reduction (vph) | 0 | 41 | 0 | 0 | 12 | 0 | 0 | 0 | 63 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 30 | 273 | 0 | 132 | 448 | 0 | 150 | 203 | 34 | 49 | 182 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 17.4 | 17.4 | | 17.4 | 17.4 | | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | |
| Effective Green, g (s) | 19.4 | 19.4 | | 19.4 | 19.4 | | 12.6 | 12.6 | 12.6 | 12.6 | 12.6 | |
| Actuated g/C Ratio | 0.54 | 0.54 | | 0.54 | 0.54 | | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 433 | 1765 | | 514 | 1811 | | 358 | 630 | 536 | 346 | 621 | |
| v/s Ratio Prot | | 0.08 | | | 0.13 | | | 0.11 | | | 0.10 | |
| v/s Ratio Perm | 0.04 | | | c0.14 | | | c0.15 | | 0.02 | 0.05 | | |
| v/c Ratio | 0.07 | 0.15 | | 0.26 | 0.25 | | 0.42 | 0.32 | 0.06 | 0.14 | 0.29 | |
| Uniform Delay, d1 | 4.0 | 4.2 | | 4.4 | 4.4 | | 8.9 | 8.6 | 7.8 | 8.0 | 8.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.1 | 0.0 | | 0.3 | 0.1 | | 0.8 | 0.3 | 0.0 | 0.2 | 0.3 | |
| Delay (s) | 4.0 | 4.2 | | 4.7 | 4.5 | | 9.7 | 8.9 | 7.8 | 8.2 | 8.7 | |
| Level of Service | A | A | | A | A | | A | A | A | A | A | |
| Approach Delay (s) | | 4.2 | | | 4.5 | | | 8.9 | | | 8.6 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 6.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.31 | | |
| Actuated Cycle Length (s) | 36.0 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 49.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 1.00 | 0.85 | 0.92 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 1.00 | 0.98 | |
| Satd. Flow (prot) | 1615 | 3420 | 3420 | 1530 | 1623 | |
| Flt Permitted | 0.42 | 1.00 | 1.00 | 1.00 | 0.98 | |
| Satd. Flow (perm) | 720 | 3420 | 3420 | 1530 | 1623 | |
| Volume (vph) | 14 | 349 | 552 | 14 | 16 | 23 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 15 | 375 | 594 | 15 | 17 | 25 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 2 | 22 | 0 |
| Lane Group Flow (vph) | 15 | 375 | 594 | 13 | 20 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | |
| Protected Phases | | 2 | 6 | | 4 | |
| Permitted Phases | 2 | | | 6 | | |
| Actuated Green, G (s) | 66.0 | 66.0 | 66.0 | 66.0 | 6.5 | |
| Effective Green, g (s) | 68.0 | 68.0 | 68.0 | 68.0 | 8.5 | |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | 0.84 | 0.11 | |
| Clearance Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 608 | 2889 | 2889 | 1292 | 171 | |
| v/s Ratio Prot | | 0.11 | c0.17 | | c0.01 | |
| v/s Ratio Perm | 0.02 | | | 0.01 | | |
| v/c Ratio | 0.02 | 0.13 | 0.21 | 0.01 | 0.11 | |
| Uniform Delay, d1 | 1.0 | 1.1 | 1.2 | 1.0 | 32.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | |
| Delay (s) | 1.0 | 1.1 | 1.2 | 1.0 | 32.9 | |
| Level of Service | A | A | A | A | C | |
| Approach Delay (s) | | 1.1 | 1.2 | | 32.9 | |
| Approach LOS | | A | A | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 2.4 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.19 | | |
| Actuated Cycle Length (s) | 80.5 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 26.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.97 | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 | 0.97 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3327 | | 1615 | 3366 | | 1615 | 3349 | | 1615 | 3322 | |
| Flt Permitted | 0.44 | 1.00 | | 0.54 | 1.00 | | 0.36 | 1.00 | | 0.39 | 1.00 | |
| Satd. Flow (perm) | 756 | 3327 | | 918 | 3366 | | 607 | 3349 | | 669 | 3322 | |
| Volume (vph) | 94 | 277 | 61 | 110 | 413 | 49 | 61 | 475 | 76 | 24 | 494 | 116 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 98 | 289 | 64 | 115 | 430 | 51 | 64 | 495 | 79 | 25 | 515 | 121 |
| RTOR Reduction (vph) | 0 | 29 | 0 | 0 | 14 | 0 | 0 | 17 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 98 | 324 | 0 | 115 | 467 | 0 | 64 | 557 | 0 | 25 | 608 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 10.4 | 10.4 | | 10.4 | 10.4 | | 11.4 | 11.4 | | 11.4 | 11.4 | |
| Effective Green, g (s) | 12.4 | 12.4 | | 12.4 | 12.4 | | 13.4 | 13.4 | | 13.4 | 13.4 | |
| Actuated g/C Ratio | 0.42 | 0.42 | | 0.42 | 0.42 | | 0.45 | 0.45 | | 0.45 | 0.45 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 315 | 1384 | | 382 | 1401 | | 273 | 1506 | | 301 | 1494 | |
| v/s Ratio Prot | | 0.10 | | | c0.14 | | | 0.17 | | | c0.18 | |
| v/s Ratio Perm | 0.13 | | | 0.13 | | | 0.11 | | | 0.04 | | |
| v/c Ratio | 0.31 | 0.23 | | 0.30 | 0.33 | | 0.23 | 0.37 | | 0.08 | 0.41 | |
| Uniform Delay, d1 | 5.8 | 5.6 | | 5.8 | 5.9 | | 5.0 | 5.4 | | 4.7 | 5.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.6 | 0.1 | | 0.4 | 0.1 | | 0.4 | 0.2 | | 0.1 | 0.2 | |
| Delay (s) | 6.4 | 5.7 | | 6.3 | 6.0 | | 5.5 | 5.6 | | 4.8 | 5.7 | |
| Level of Service | A | A | | A | A | | A | A | | A | A | |
| Approach Delay (s) | | 5.9 | | | 6.1 | | | 5.6 | | | 5.7 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.8 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.36 | | |
| Actuated Cycle Length (s) | 29.8 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 55.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 1.00 | | | 1.00 | |
| Frt | | 0.99 | | | 1.00 | | | 0.91 | | | 0.96 | |
| Flt Protected | | 1.00 | | | 0.99 | | | 0.99 | | | 1.00 | |
| Satd. Flow (prot) | | 3372 | | | 3381 | | | 1625 | | | 1714 | |
| Flt Permitted | | 0.95 | | | 0.82 | | | 0.99 | | | 1.00 | |
| Satd. Flow (perm) | | 3193 | | | 2807 | | | 1625 | | | 1714 | |
| Volume (vph) | 6 | 353 | 35 | 109 | 522 | 13 | 32 | 34 | 131 | 5 | 42 | 23 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 7 | 384 | 38 | 118 | 567 | 14 | 35 | 37 | 142 | 5 | 46 | 25 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 101 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 0 | 421 | 0 | 0 | 698 | 0 | 0 | 113 | 0 | 0 | 54 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Split | | | Split | | |
| Protected Phases | | 2 | | | 6 | | 8 | 8 | | 4 | 4 | |
| Permitted Phases | 2 | | | 6 | | | | | | | | |
| Actuated Green, G (s) | | 24.3 | | | 24.3 | | | 8.9 | | | 4.6 | |
| Effective Green, g (s) | | 26.3 | | | 26.3 | | | 10.9 | | | 6.6 | |
| Actuated g/C Ratio | | 0.53 | | | 0.53 | | | 0.22 | | | 0.13 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1686 | | | 1482 | | | 356 | | | 227 | |
| v/s Ratio Prot | | | | | | | | c0.07 | | | c0.03 | |
| v/s Ratio Perm | | 0.13 | | | c0.25 | | | | | | | |
| v/c Ratio | | 0.25 | | | 0.47 | | | 0.32 | | | 0.24 | |
| Uniform Delay, d1 | | 6.4 | | | 7.4 | | | 16.3 | | | 19.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.2 | | | 0.5 | | | 0.5 | |
| Delay (s) | | 6.5 | | | 7.6 | | | 16.8 | | | 19.9 | |
| Level of Service | | A | | | A | | | B | | | B | |
| Approach Delay (s) | | 6.5 | | | 7.6 | | | 16.8 | | | 19.9 | |
| Approach LOS | | A | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 9.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 49.8 | Sum of lost time (s) | 6.0 |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 | 1800 |
| Total Lost time (s) | | 2.0 | | | 2.0 | | | 2.0 | | | 2.0 | |
| Lane Util. Factor | | 0.95 | | | 0.95 | | | 0.95 | | | 0.95 | |
| Frt | | 0.99 | | | 0.99 | | | 0.95 | | | 0.93 | |
| Flt Protected | | 0.99 | | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 3370 | | | 3378 | | | 3250 | | | 3168 | |
| Flt Permitted | | 0.81 | | | 0.91 | | | 0.93 | | | 0.88 | |
| Satd. Flow (perm) | | 2750 | | | 3082 | | | 3024 | | | 2801 | |
| Volume (vph) | 86 | 366 | 17 | 46 | 558 | 38 | 14 | 136 | 67 | 44 | 91 | 104 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 91 | 385 | 18 | 48 | 587 | 40 | 15 | 143 | 71 | 46 | 96 | 109 |
| RTOR Reduction (vph) | 0 | 3 | 0 | 0 | 5 | 0 | 0 | 52 | 0 | 0 | 79 | 0 |
| Lane Group Flow (vph) | 0 | 491 | 0 | 0 | 670 | 0 | 0 | 177 | 0 | 0 | 172 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 15.2 | | | 15.2 | | | 6.0 | | | 6.0 | |
| Effective Green, g (s) | | 17.2 | | | 17.2 | | | 8.0 | | | 8.0 | |
| Actuated g/C Ratio | | 0.59 | | | 0.59 | | | 0.27 | | | 0.27 | |
| Clearance Time (s) | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1620 | | | 1815 | | | 828 | | | 767 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | 0.18 | | | c0.22 | | | 0.06 | | | c0.06 | |
| v/c Ratio | | 0.30 | | | 0.37 | | | 0.21 | | | 0.22 | |
| Uniform Delay, d1 | | 3.0 | | | 3.2 | | | 8.2 | | | 8.2 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.1 | | | 0.1 | | | 0.1 | |
| Delay (s) | | 3.1 | | | 3.3 | | | 8.3 | | | 8.3 | |
| Level of Service | | A | | | A | | | A | | | A | |
| Approach Delay (s) | | 3.1 | | | 3.3 | | | 8.3 | | | 8.3 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 4.7 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.31 | | |
| Actuated Cycle Length (s) | 29.2 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 60.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Ideal Flow (vphpl) | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 | 1700 | 1800 | 1800 |
| Total Lost time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Util. Factor | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frt | 1.00 | 0.99 | | 1.00 | 0.96 | | 1.00 | 0.99 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1615 | 3384 | | 1615 | 3300 | | 1615 | 3384 | | 1615 | 3202 | |
| Flt Permitted | 0.34 | 1.00 | | 0.51 | 1.00 | | 0.63 | 1.00 | | 0.62 | 1.00 | |
| Satd. Flow (perm) | 571 | 3384 | | 862 | 3300 | | 1077 | 3384 | | 1049 | 3202 | |
| Volume (vph) | 56 | 339 | 25 | 23 | 500 | 152 | 55 | 174 | 13 | 40 | 94 | 70 |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 64 | 390 | 29 | 26 | 575 | 175 | 63 | 200 | 15 | 46 | 108 | 80 |
| RTOR Reduction (vph) | 0 | 6 | 0 | 0 | 31 | 0 | 0 | 9 | 0 | 0 | 58 | 0 |
| Lane Group Flow (vph) | 64 | 413 | 0 | 26 | 719 | 0 | 63 | 206 | 0 | 46 | 130 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 7.2 | 7.2 | | 7.2 | 7.2 | |
| Effective Green, g (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 9.2 | 9.2 | | 9.2 | 9.2 | |
| Actuated g/C Ratio | 0.60 | 0.60 | | 0.60 | 0.60 | | 0.28 | 0.28 | | 0.28 | 0.28 | |
| Clearance Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 344 | 2039 | | 519 | 1988 | | 298 | 938 | | 291 | 887 | |
| v/s Ratio Prot | | 0.12 | | | c0.22 | | | c0.06 | | | 0.04 | |
| v/s Ratio Perm | 0.11 | | | 0.03 | | | 0.06 | | | 0.04 | | |
| v/c Ratio | 0.19 | 0.20 | | 0.05 | 0.36 | | 0.21 | 0.22 | | 0.16 | 0.15 | |
| Uniform Delay, d1 | 3.0 | 3.0 | | 2.7 | 3.4 | | 9.2 | 9.2 | | 9.1 | 9.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.3 | 0.0 | | 0.0 | 0.1 | | 0.4 | 0.1 | | 0.3 | 0.1 | |
| Delay (s) | 3.2 | 3.0 | | 2.7 | 3.5 | | 9.6 | 9.4 | | 9.3 | 9.1 | |
| Level of Service | A | A | | A | A | | A | A | | A | A | |
| Approach Delay (s) | | 3.1 | | | 3.4 | | | 9.4 | | | 9.2 | |
| Approach LOS | | A | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 5.0 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.31 | | |
| Actuated Cycle Length (s) | 33.2 | Sum of lost time (s) | 4.0 |
| Intersection Capacity Utilization | 45.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# **Appendix H.** Summary of Relocation Benefits

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## *DECLARATION OF POLICY*

"The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

## *FAIR HOUSING*

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This Act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance Program. 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 Caltrans relocation advisor.

## *RELOCATION ASSISTANCE ADVISORY SERVICES*

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability

and prices of both houses for sale and rental units that are "decent, safe and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (For business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning Federal and State assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.

## *RESIDENTIAL RELOCATION PAYMENTS*

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

### Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

### Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to

receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is $22,500. If the total entitlement (without the moving payments) is in excess of $22,500, the Last Resort Housing Program will be used (See the explanation of the Last Resort Housing Program below).

## Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by Caltrans prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable "decent, safe and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the Down Payment section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses, is $5,250. If the total entitlement for rent supplement exceeds $5,250, the Last Resort Housing Program will be used.

In order to receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

## Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to Caltrans' initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of $5,250. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

## Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been deigned primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the $22,500 and $5,250 limits of the

standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced;
- Specific arrangements needed to accommodate any family member(s) with special needs;
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family;
- Preferences in area of relocation;
- Location of employment or school.

## *NONRESIDENTIAL RELOCATION ASSISTANCE*

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

### Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the Right of Way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

### Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $20,000.

## *ADDITIONAL INFORMATION*

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, except for any Federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization which has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a pubic project. A list of ineligible expenses can be obtained from Caltrans Right of Way. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

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# Your Rights and Benefits as a Displacee Under the Uniform Relocation Assistance Program (Residential) 2007

Caltrans

California Department of Transportation

# Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

## Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

> To ensure that persons displaced as a direct result of federal or federally-assisted projects 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.

*While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.*

## Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Comparable Replacement: means a dwelling which is:

(1) Decent, safe, and sanitary. (See definition below)

(2) Functionally equivalent to the displaced dwelling.

(3) Adequate in size to accommodate the family being relocated.

(4) In an area not subject to unreasonable adverse environmental conditions.

(5) In a location generally not less desirable than the location of your displacement dwelling with respect to public utilities and commercial and public facilities, and reasonably accessible to the place of-employment.

(6) On land that is typical in size for residential development with typical improvements.

Decent, Safe and Sanitary (DS&S): Replacement housing must be decent, safe, and sanitary...which means it meets all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. The dwelling shall:

(1) Be structurally sound, weather tight, and in good repair.

(2) Contain a safe electrical wiring system adequate for lighting and other devices.

(3) Contain a heating system capable of sustaining a healthful temperature (of approximately 70 degrees) for a displaced person, except in those areas where local climatic conditions do not require such a system.

(4) Be adequate in size with respect to the number of rooms and area of living space needed to accommodate the displaced person. The Caltrans policy is that there will be no more than 2 persons per room unless the room is of adequate size to accommodate the normal bedroom furnishings for the occupants.

(5) Have a separate, well-lighted and ventilated bathroom that provides privacy to the user and contains a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and to a sewage drainage system.

*Note: In the case of a housekeeping dwelling, there shall be a kitchen area that contains a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, and adequate space and utility service connections for a stove and refrigerator.*

(6) Contains unobstructed egress to safe, open space at ground level. If the replacement dwelling unit is on the second story or above, with access directly from or through a common corridor, the common corridor must have at least two means of egress.

*(7)* *For a displaced person who is handicapped,* be free of any barriers which would preclude reasonable ingress, egress, or use of the dwelling by *such displaced person.*

Displaced Person or Displacee: Any person who moves from real property or moves personal property from real property as a result of the acquisition of the real property, in whole or in part, or as the result of a written notice from the agency to vacate the real property needed for a transportation project. In the case of a partial acquisition, Caltrans shall determine if a person is displaced as a direct result of the acquisition.

Residents **not lawfully present** in the United States are not eligible to receive relocation payments and assistance

Relocation benefits will vary, depending upon the type and length of occupancy. As a residential displacee, you will be classified as either a:

- An owner occupant of a residential property (includes mobile homes)
- A tenant occupant of a residential property (includes mobile homes and sleeping rooms)

Dwelling: The place of permanent or customary and usual residence of a person, according to local custom or law, including a single family house; a single family unit in a two-family, multi-family, or multi-purpose property; a unit of a condominium or cooperative housing project; a non-housekeeping unit; a mobile home; or any other residential unit.

Owner: A person is considered to have met the requirement to own a dwelling if the person purchases or holds any of the following interests in real property:

(1) Fee title, a life estate, a land contract, a 99-year lease, oral lease including any options for extension with at least 50 years to run from the date of acquisition; or

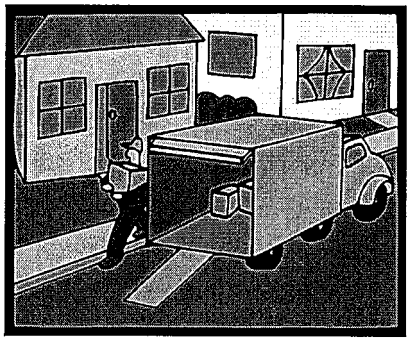
(2) An interest in a cooperative housing project which includes the right to occupy a dwelling; or

(3) A contract to purchase any interests or estates; or

(4) Any other interests, including a partial interest, which in the judgment of the agency warrants consideration as ownership.

Tenant: A person who has the temporary use and occupancy of real property owned by another.

# Moving Expenses



If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. The methods of moving and the various types of moving cost payments are explained. Below.

Displaced individuals and families may choose to be paid on the basis of actual, reasonable moving costs and related expenses, or according to a fixed moving cost schedule. However, to ensure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

## You Can Choose Either:

**Actual Reasonable Moving Costs -** You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses <u>may</u> include:

- Transportation
- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.

**OR**

**Fixed Moving Cost Schedule -** You may be paid on the basis of a fixed moving cost schedule. Under this option, you will not be eligible for reimbursement of related expenses listed above. The fixed schedule is designed to cover such expenses.

Examples (Year 2005 Rate):
4 Rooms - $ 950
7 Rooms - $1,550

If the furniture is moved with the mobile home, the amount of the fixed payment is based on Schedule B.

Examples (Year 200 Rate):
4 Rooms - $1,175
7 Rooms - $1,900

Under the Fixed Move Schedule for a furnished unit (e.g. you are a tenant of an apartment that is furnished by your landlord) is based on Schedule B.

Example (Year 2005 Rate):
1 Room - $400

Under the Fixed Move Schedule, you will not receive any additional payments for temporary storage, lodging, transportation or utility hook-ups.

## Replacement Housing Payments

The type of Replacement Housing Payment (RHP) depends on whether you are an owner or a tenant, and the length of occupancy in the property being acquired.

If you are a qualified **owner occupant** of more than 180 days prior to the initiation of negotiations for the acquisition of your property, you may be entitled to a RHP that consists of:

**Price Differential, and**

**Mortgage Differential, and**

**Incidental Expenses;**

**OR**

**Rent Differential**

If you are a qualified **owner occupant** of more than 90 days but less than 180 days, OR you are a qualified **tenant occupant** of at least 90 days, you may be entitled to a RHP as follows:

**Rent Differential**

**OR**

**Downpayment Option**

Length of occupancy simply means counting the number of days that you actually occupied a dwelling before the date of initiation of negotiations by Caltrans for the purchase of the property. The term "initiation of negotiations" means the date Caltrans makes the first personal contact with the owner of real property, or his/ her representative, to give him/her a written offer for the property to be acquired.

*Note: If you have been in occupancy less than 90 days before the initiation of negotiations and the property is subsequently acquired, or if you move onto the property after the initiation of negotiations and you are still in occupancy on the date of acquisition, you may or may not be eligible for a Replacement Housing Payment. Check with your Relocation Agent before you make any decision to vacate your property.*

## For Owner Occupants of 180 Days or More

If you qualify as a 180-day owner occupant, you may be eligible -- in addition to the fair market value of your property -- for a Replacement Housing Payment that consists of a Price Differential, Mortgage Differential and/or Incidental Expenses.

The **Price Differential** payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling. This payment will assist you in purchasing a comparable decent, safe, and sanitary (DS&S) replacement dwelling. Caltrans will compute the maximum payment you may be eligible to receive.

In order to receive the full amount of the calculated price differential, you must spend at least the amount calculated by Caltrans on a replacement property

The **Mortgage Differential** payment will reimburse your for any increased mortgage interest costs you might incur because the interest rate on your new mortgage exceeds the interest rate on the property acquired by Caltrans The payment computation is complex as it is based on prevailing rates, your existing loan and your new loan. Also, a part of this payment may be prorated such as reimbursement for a portion of your loan origination fees and mortgage points.

To be eligible to receive this payment, the acquired property must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

You may also be reimbursed for any actual and necessary **Incidental Expenses** that you incur in relation to the purchase of your replacement property. These expenses may be those costs for title search, recording fees, credit report, appraisal report, and certain other closing costs associated with the purchase of property. You will not be reimbursed for any recurring costs such as prepaid real estate taxes and property insurance.

If the total amount of your **Replacement Housing Payment** (Price Differential, Mortgage Differential and Incidental Expenses) exceeds $22,500, the payment must be deposited directly into an escrow account or paid directly to the mortgage company.

## EXAMPLES OF PRICE DIFFERENTIAL PAYMENT COMPUTATION:

Assume that Caltrans purchases your property for $98,000. After a thorough study of available, decent, safe and sanitary dwellings on the open market, Caltrans determines that a comparable replacement property will cost you $100,000. If your purchase price is $100,000, you will receive $2,000 *(see Example A).*

If your actual purchase price is more than $100,000, you pay the difference (see *Example B).* If your purchase price is less than $100,000, the differential payment will be based on actual costs *(see Example C).*

How much of a differential payment you receive depends on how much you actually spend on a replacement dwelling as shown in these examples:

**Caltrans' Computation**

| | |
|---|---|
| Comparable Replacement Property and Mobile Home | $100,000 |
| Acquisition Price of Your Property and Mobile Home | -$ 98,000 |
| Maximum Price Differential | $ 2,000 |

**Example A**

| | |
|---|---|
| Purchase Price of Replacement | $100,000 |
| Comparable Replacement Property | $100,000 |
| Acquisition Price of Your Property | -$ 98,000 |
| Maximum Price Differential | $ 2,000 |

**Example B**

| | |
|---|---|
| Purchase Price of Replacement Property | $105,000 |
| Comparable Replacement Property | $100,000 |
| Acquisition Price of Your Property | $ 98,000 |
| Maximum Price Differential | $ 2,000 |
| You Must Pay the Additional | $ 5,000 |

**Example C**

| | |
|---|---|
| Comparable Replacement Property | $100,000 |
| Purchase Price of Replacement | $ 99,000 |
| Acquisition Price of Your Property | $ 98,000 |
| Price Differential | $ 1,000 |

*In Example C you will only receive $1,000 - not the full amount of the Caltrans "Comparable Replacement Property" because of the "Spend to Get" requirements.*

**IN ORDER FOR A "180 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING *PAYMENT*** *(Price Differential, Mortgage Differential and Incidental Expenses)*, **you must:**

A) Purchase and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the closing of escrow on State's acquisition),

**AND**

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" for a replacement property,

**AND**

C) File a claim for relocation payments within 18 months of the later:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

**You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. Also, you will also receive at least 90 days' written notice before you must move.**

## For Owner Occupants and Tenants of 90 Days or More

If you qualify as a 90-day occupant (either as an owner or tenant), you may be eligible for a Replacement Housing Payment in the form of a Rent Differential.

The **Rent Differential** payment is designed to assist you in renting a comparable decent, safe and sanitary replacement dwelling. The payment is based on the difference between the base monthly Rent for the property acquired by Caltrans (including average monthly cost for utilities) and the lesser of:

a) The monthly rent and estimated average monthly cost of utilities for a comparable replacement dwelling as determined by Caltrans, **OR**

b) The monthly rent and estimated average monthly cost of utilities for the decent, safe and sanitary dwelling that you actually rent as a replacement dwelling.

Utility costs are those expenses you incur for heat, lights, water and sewer - regardless of the source (e.g. electricity, propane, and septic system). It does not include garbage, cable, telephone, or security. The utilities at your property are the average costs over the last 12 months. The utilities at the comparable replacement property are the estimated costs for the last 12 months for the type of dwelling and area used in the calculation.

This difference is multiplied by 42 months and may be paid to you in a lump sum payment or in periodic installments in accordance with policy and regulations.

In order to receive the full amount of the calculated Rent Differential, you must spend at least the amount calculated by Caltrans on a replacement property.

This payment may - with certain limitations - be converted to a **Downpayment Option** to assist you in purchasing a replacement property.

**Example of Rent Differential Payment Computation:**

After a thorough study of comparable, decent, safe and sanitary dwellings that are available for rent, Caltrans determines that a comparable replacement property will rent for $325.00 per month.

**Caltrans Computation (rates are per month)**

| | |
|---|---|
| Rental Rate for Comparable Replacement Property | $ 325 |
| PLUS average estimated utilities costs | + 100 |
| TOTAL Cost to Rent Comparable Replacement Property | = $ 425 |
| | |
| Rental Rate for Your Current Property | $ 300 |
| PLUS average utilities costs | + 90 |
| TOTAL Cost to Rent Current Property | = $ 390 |
| | |
| Comparable Replacement Property including utilities | $ 425 |
| Cost you pay to rent your property including utilities | + 390 |
| Difference | = $ 35 |

Multiplied by 42 months = $1,470 Rent Differential

**Example A:**

| | |
|---|---|
| Rental Rate for a Replacement Property including Estimated average utilities costs | $ 525 |
| Comparable Replacement Property including utilities | $ 425 |
| Cost you pay to rent your property including utilities | $ 390 |

Since $425 is less than $525, the Rent Differential is based on the difference between $390 and $425.

Rent Differential ($35 x 42 months = $1,470)

*In this case you spent "at least" the amount of the Comparable Replacement Property on the replacement property and will receive the full amount.*

**Example B:**

| | |
|---|---|
| Rental Rate for a Replacement Property including Estimated average utilities costs | $ 400 |
| Comparable Replacement Property including utilities | $ 425 |
| Cost you pay to rent your property including utilities | $ 390 |

Since $400 is less than $525, the Rent Differential is based on the difference between $400 and $390.

Rent Differential ($10 x 42 months = $420)

*In this case you spent "less than" the amount of the Comparable Replacement Property on the replacement property and will not receive the full amount.*

**IN ORDER FOR A "90 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING PAYMENT** *(Rent Differential)*, **you must:**

A) Rent and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The day you vacate the property acquired by Caltrans.

**AND**

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" to rent a replacement property,

**AND**

C) File a claim for relocation payments within 18 months of the later of:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

**You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. And, you will also receive at least 90 days' written notice before you must move.**

*Note1: The time periods for a 90-day owner occupant are different than a 180-day owner occupant.*

*Note 2: If the Rent Differential is converted to a Downpayment Option, there is no "spend-to-get" requirement.*

## DOWN PAYMENT OPTION

The Rent Differential payment may - with certain limitations - be converted to a **Down Payment Option** to assist you in purchasing a replacement property. The down payment option is a direct conversion of the Rent Differential payment.

If the Caltrans calculated Rent Differential is between $0 and $5,250, your down payment option will be $5,250, which can be used towards the purchase of a replacement decent, safe and sanitary dwelling.

If the Rent Differential is over $5,250, you may be able to convert the entire amount of the Rent Differential to a downpayment option.

The down payment option must be used for the acquisition of the replacement dwelling, plus any eligible incidental expenses (see "180-day Owner Occupants Incidental Expenses") related to the purchase of the property. You must work closely with your Relocation Agent to ensure you can utilize the full amount of your down payment option towards the purchase.

If any portion of the Rent Differential was used prior to the decision to convert to a down payment option, those advance payments will be deducted from the entire benefit.

## LAST RESORT HOUSING

On most projects, an adequate supply of housing will be available for sale and for rent, and the benefits provided will be sufficient to enable you to relocate to comparable housing. However, there may be projects in certain locations where the supply of available housing is insufficient to provide the necessary housing for those persons being displaced. In such cases, Caltrans will utilize a method called Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the people displaced from a project. Caltrans can also pay above the statutory limits of $5,250 and $22,500 in order to make available housing affordable.

# Relocation Advisory Assistance

Any individual, family, business or farm displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your housing needs and desires will be determined as well as your need for assistance. You cannot be required to move unless at least one comparable replacement dwelling is made available to you.

You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Explain the relocation benefits and eligibility requirements.
- Provide the amount of the replacement housing payments in writing.
- Assure the availability of a comparable property before you move.
- Inspect possible replacement residential units for DS&S compliance.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits
- Interest rates and terms
- Typical down payments
- VA and FHA loan requirements
- Real property taxes.
- Consumer education literature on housing

If you desire, your Relocation Agent will give you current listings of other available replacement housing. Transportation will be provided to inspect available housing, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local housing programs offering assistance to displaced persons. If you have special problems, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.

## YOUR RIGHTS AS A DISPLACEE

All eligible displacees have a freedom of choice in the selection of replacement housing, and Caltrans will not require any displaced person to accept a replacement dwelling provided by Caltrans. If you decide not to accept the replacement housing offered by Caltrans, you may secure a replacement dwelling of your choice, providing it meets DS&S housing standards. Caltrans will not pay more than your calculated benefits on any replacement property.

The most important thing to remember is that the replacement dwelling you select must meet the basic "decent, safe, and sanitary" standards. Do not execute a purchase agreement or a rental agreement until a representative from Caltrans has inspected and certified in writing that the dwelling you propose to occupy meets the basic standards. **DO NOT jeopardize** your right to receive a replacement housing payment by moving into a substandard dwelling.

It is important to remember that your relocation benefits will not have an adverse affect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, minority persons shall be given reasonable opportunities to relocate to decent, safe, and sanitary replacement dwellings, not located in an area of minority concentration, and that is within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

NOTES

# Sus Derechos y Beneficios Como Una Persona Desplazada Bajo el Programa Uniforme De Asistencia Para Reubicación (Residencial)

## Introducción

En la construcción de un sistema moderno de transportación, el desplazamiento de un pequeño porcentaje de la población es a menudo necesario. Sin embargo, la política de Caltrans es que las personas desalojadas no tengan que sufrir innecesariamente como resultado de los programas diseñados para el beneficio del público en general.

Los individuos y familias desplazadas pueden ser elegibles para recibir servicios de asesoramiento y pagos de reubicación.

Este folleto provee información acerca de los servicios y pagos de reubicación disponibles. Si usted es requerido a mudarse como resultado de un proyecto de transportación, un Agente de Reubicación se comunicará con usted. El Agente de Reubicación le contestará preguntas específicas y le proveerá información adicional.

## Ley de Procedimiento Uniforme de Asistencia para Rubicación y Adquisición de Bienes Raíces de 1970, Enmendada “La Ley Uniforme”

El propósito de esta Ley es proveer tratamiento igual y uniforme para las personas que son desplazadas de sus hogares, negocios, u operaciones agrícolas por programas federales o programas que son asistidos con fondos federales y para establecer uniformidad e igualdad en la política de adquisición de tierras por programas federales y programas asistidos con fondos federales.

La ley trata de asegurar que las personas desplazadas directamente como resultado de proyectos federales o proyectos asistidos con fondos federales sean tratados con igualdad, consistencia y equidad para que esas personas no sufran

daños desproporcionados como resultado de proyectos designados para el beneficio del público en general.

*Aunque se ha hecho un esfuerzo para asegurar la precisión de este folleto, debe de ser entendido que no tiene la fuerza o efectos de la ley, regla, o regulación que gobierna el pago de los beneficios. Si hay diferencias o error, la ley tomará precedencia.*

## Algunas Definiciones Importantes…

Sus beneficios de reubicación pueden ser entendidos mejor si usted entiende los siguientes términos:

***Vivienda de Restitución comparable:*** significa una propiedad que es:

(1) Decente, segura y sanitaria. (Vea la definición abajo.)
(2) Equivalente funcionalmente a la propiedad desplazada.
(3) Adecuada en tamaño para acomodar a la familia que esta siendo reubicada.
(4) En un área que no esté sujeta a condiciones irrazonablemente adversas.
(5) En una localidad generalmente no menos deseable que la localidad de su propiedad desplazada con respecto a servicios públicos, y acceso razonable al lugar de empleo.
(6) En una parcela de tamaño típico para el desarrollo de una residencia de tamaño normal.

***Decente, Segura y Sanitaria (DS&S):*** La vivienda de restitución debe de ser decente, segura y sanitaria … que significa que llena todos los requisítos mínimos establecidos por las regulaciones federales y conforme a los códigos de ocupación de viviendas aplicables. La propiedad será:

(1) Buena estructuralmente, cerrada a las condiciones climáticas y en buen estado de reparación.

(2) Contiene un sistema eléctrico adecuado para iluminación y otros aparatos.

(3) Contiene un sistema de calefacción capáz de mantener una temperatura saludable (de aproximadamente 70 grados) para la persona desplazada,

con excepción en aquellas áreas donde las condiciones climáticas no requieren dicho sistema.

(4) Debe de ser adecuada en tamaño con respecto al número de cuartos y áreas para vivir necesarias para acomodar a las personas desplazadas. Es política de Caltrans que más de dos personas no deben de estar en un solo cuarto, a menos que que el tamaño del cuarto sea suficientemente adecuado para acomodar los muebles de dormitorios necesarios de los ocupantes.

(5) Tener un baño separado, bien iluminado y ventilado que sea privado a los usuarios y que contenga un lavamanos, una tina o regadera, y un excusado, todos en buenas condiciones y apropiadamente conectados a los sistemas de aguas negras y aguas potables.

***Nota:*** *En el caso de una propiedad residencial, debe de haber una área de cocina que contenga un lavatrastos usable, propiamente conectado a agua caliente y agua fría, y al sistema de drenaje, y con espacio adecuado para utilizar los servicios y connecciones para una estufa y un refrigerador.*

(6) Que contenga salidas sin obstrucción y seguros espacio abierto al nivel del suelo. Si la propiedad de restitución está en el segundo piso o más arriba, que tenga acceso directamente desde o a travéz de un corredor, y que éste corredor común debe de tener al menos dos salidas.

(7) Si la persona desplazada es incapacitada físicamente, debe de ser libre de cualquier barrera que le impidan la entrada o salida, o uso razonable de la propiedad por dicha persona incapacitada.

***Persona Desplazada:*** Cualquier individuo o familia que se mueva de una propiedad o mueva sus bienes personales de una propiedad como resultado de la adquisición de bienes raíces, en todo o en parte, o como resultado de una notificación escrita de una agencia pidiéndole que desocupe la propiedad que se necesita para un proyecto de transportación. En el caso de una adquisición parcial, Caltrans debe de determinar si la persona es desplazada directamente como resultado de esta adquisición.

Los residentes **que no están legalmente** en los Estados Unidos no son elegibles para recibir pagos y asistencia de reubicación.

Los beneficios de reubicación van a variar dependiendo del tipo y tiempo de ocupación.  Como una persona desplazada de una unidad residencial usted puede ser clasificado como:

- Un dueño ocupante de una propiedad residencial (incluyendo casas movibles)
- Un inquilino ocupante de una propiedad residencial (incluyendo casas movibles y cuartos para dormir)

***Vivienda:*** El lugar de permanencia o residencia regular y usual de una persona, de acuerdo a las costumbres locales  o la ley, incluyendo una unidad familiar, una unidad familiar en un complejo doble o multi-familiar, o una propiedad de uso múltiple, una unidad de condominio o proyecto de vivienda en cooperativa, una unidad libre de mantenimiento doméstico, una casa movible, o cualquier otra unidad residencial.

***Dueño:*** Una persona es considerada que llena los requisitos de dueño de una casa, si esta persona compra, tiene título o tiene algunos de los siguientes intereses en una propiedad:

(1) Una escritura de propiedad, un interés de por vida en una propiedad, un contrato de renta por 99 años, un contrato oral de renta incluyendo una opción para extensión con al menos 50 años que queden después de la fecha de adquisición; o

(2) El interés en un proyecto de vivienda en cooperativa que incluya el derecho de ocupar una vivienda; o

(3) Un contrato de compra de interés, o bienes raíces.

(4) Algún otro interés, incluyendo intereses parciales, qua a juicio de la agencia garanticen los pagos como dueño.

***Inquilino:*** Una persona que tiene el uso y la ocupación temporal de una propiedad de la que otro es dueño.

# Gastos de Mudanza

Si usted califica como persona desplazada, usted tiene derecho a reembolso de sus gastos de mudanza y a ciertos gastos relacionados incurridos durante el traslado. Los métodos de traslado y los distintos tipos de pagos para gastos de mudanza son explicados abajo.

Los individuos y familias desplazadas pueden escoger un pago basado en los gastos reales, razonables y los gastos relacionados, o de acuerdo a una lista de costos fijos de mudanza. Sin embargo, para asegurar su elegibilidad y el pago rápido de sus gastos de mudanza, usted debe de ponerse en contacto con su Agente de Rubicación antes de mudarse.

## Usted Puede Elegir Entre:

**Los Gastos Razonables de Mudanza –** A usted se le puede pagar por los gastos razonables de mudanza y gastos relacionados cuando una compañia comercial de mudanza hace la mudanza. Los reembolsos deberán ser limitados a una mudanza de 50 millas o menos. Los gastos relacionados pueden incluir:

- Transportación.
- Empaque y desempaque de propiedades personales.
- Desconexión y reconexión de aparatos eléctricos.
- Almacenaje temporal de propiedades personales.
- Seguros cuando la propiedad está almacenada o en tránsito.

Ó

**Lista de Costos Fijos de Mudanza –** A usted se le puede pagar basado en una lista de costos fijos de mudanza. Bajo esta opción, usted no puede ser elegible para reembolsos de gastos relacionados incluídos en la lista de arriba. Esta lista de gastos fijos está designada a cubrir todos esos gastos.

Por ejemplo (Tarifa para el año 2001)

4 Cuartos - $ 950
7 Cuartos - $1,550

Los costos fijos de mudanza para una unidad amueblada (ejemplo, usted es inquilino en un apartamento donde los muebles pertenecen al dueño de la vivienda) estan basados en la Tabla de Honorarios B.

Ejemplos (Taza en el año 2001):

4 Cuartos - $475
7 Cuartos - $625

Bajo la lista de Pago Fijos de Mudanza, usted no puede recibir ningun pago adicional por almacenamiento temporario, vivienda temporaria, transportación o conexiones de servicios públicos.

# Pagos Para Vivienda de Restitución

El tipo de Pago Para Vivienda de Restitución (RHP) depende de si usted es dueño o un inquilino, y en el tiempo de ocupación que tiene de la propiedad que será adquirida.

Si usted es calificado **como dueño ocupante** de más de 180 días antes de la iniciación de negociaciones para la adquisición de su propiedad, usted puede tener derecho a recibir RHP que consiste en:

**Diferencia de Precio, y**

**Diferencia para Hipoteca, y**

**Gastos Incidentales**

**O**

**Diferencia Para Rentar**

Si usted es calificado como **dueño ocupante** de más de 90 días, pero menos de 180 días, O si usted es calificado como **inquilino ocupante** de al menos 90 días, usted puede tener derecho a recibir RHP así:

**Diferencia Para Rentar**

**U**

**Opción para Enganche**

Tiempo de ocupación simplemente significa contar el número de días que usted actualmente ocupó la vivienda antes de la fecha de iniación de negociaciones por Caltrans para la compra de la propiedad. El término “iniciación de negociaciones” significa la fecha que Caltrans hizo el primer contacto personal con el dueño de bienes raíces, o su representante, para darle a el/ella una oferta escrita para la adquisición de la propiedad.

*Nota: Si usted ocupó una vivienda por **menos de 90 días** antes de la iniciación de negociaciones y la propiedad es posteriormente adquirida, o si usted se mudó a la propiedad después de la iniciación de negociaciones y usted todavía*

*ocupaba la propiedad a la fecha de adquisición, usted puede ser elegible para un Pago para Restitución de Vivienda, basado en una guía de elegibilidad establecida. Consulte con su Agente de Reubicación antes de que haga cualquier decisión de mudarse de su propiedad.*

## Para Ocupantes de 180 Días o Más

Si usted califica como dueño ocupante de 180 días, puede ser elegible – además del valor equitativo en el mercado de su propiedad – para un Pago de Restitución de Vivienda que consiste en un pago de Diferencia de Precio y/o Gastos Incidentales.

El Pago de **Diferencia de Precio** es la cantidad por la que el costo de una vivienda de restitución excede el costo de adquisición de la vivienda desplazada. Este pago le asistirá en la compra de una vivienda decente, segura, y sanitaria (DS&S). Caltrans computará el pago máximo que usted puede ser elegible para recibir. (Vea un ejemplo en la página 15.)

Para recibir la cantidad total de la diferencia de precio calculadas, usted debe de gastar al menos la cantidad calculada por Caltrans en la propiedad de restitución.

El pago de **Diferencia de Hipoteca** le será reembolsado por cualquier aumento del costo de interés en la hipoteca que usted haya incurrido porque la taza de interés en su nueva hipoteca excede la taza de interés de la propiedad adquirida por Caltrans. La computación del pago es complicada ya que está basada en las tazas típicas entre su préstamo anterior y su préstamo nuevo. También, una parte de los pagos pueden ser prorrateado como reembolso por una porción de los honorarios de su préstamo y los puntos (intereses) de la hipoteca.

Para ser elegible para recibir este pago, la propiedad adquirida debe de ser hipotecada con una hipoteca de buena fé, la cual fue un crédito válido de por lo menos 180 días antes de la iniciación de negociaciones.

Usted también puede ser reembolsado por cualquier **Gasto Incidental** actual y necesario que usted incurra en relación con la compra de su propiedad de restitución. Estos gastos pueden ser los costos por búsqueda de título, honorarios de copia en el Registro, reporte de crédito, reporte de evaluación, y ciertos otros gastos de cierre de escritura. Usted no puede ser reembolsado por ningún gasto frequente como pre-pagos de impuesto de bienes raíces y seguro de propiedad.

Si la cantidad total de su **Pago de Vivienda de Restitución** (Diferencia de Precio, Diferencia Para Hipoteca y Gastos Incidentales) excede $22,500, el pago debe de ser depositado directamente en una cuenta fiduciaria o ser pagado directamente a la compañía financiera.

**EJEMPLO DE COMO SE CALCULA LA DIFERENCIA DE PAGO:**

Suponga que Caltrans compra su propiedad por $98,000. Después de un estudio completo de viviendas disponibles en el mercado, que sean decentes, seguras y sanitarias, Caltrans determina que la propiedad de restitución comparable en el mercado abierto le costará $100,000. Si su precio de compra es $100,000 usted recibirá $2,000 (*Vea el Ejemplo A)*

Si su precio de compra es de más de $100,000, usted paga la diferencia (vea el *Ejemplo B*). Si su precio de compra es menos de $100,000, el pago se basará en los costos actuales (vea el *Ejemplo C).*

La cantidad que usted recibe en un pago diferencial dependerá de cuanto usted realmente gasta en una vivienda de restitución, como se muestra en estos ejemplos.

**Computación de Caltrans**

| | |
|---|---|
| Precio Comparable de la Propiedad de Restitución | $100,000 |
| Precio de Adquisición de su Propiedad | – $ 98,000 |
| Diferencia Máxima de Precio | $ 2,000 |

**Ejemplo A**

| | |
|---|---|
| Precio de Compra de Restitución | $100,000 |
| Propiedad Comparable de Restitución | $100,000 |
| Precio de Adquisición de su Propiedad | – $ 98,000 |
| Diferencia Máxima de Precio | $ 2,000 |

**Ejemplo B**

| | |
|---|---|
| Precio de Compra de Restitución | $105,000 |
| Propiedad Comparable de Restitución | $100,000 |
| Precio de Adquisición de su Propiedad | – $ 98,000 |
| Diferencia Máxima de Precio | $ 2,000 |
| Usted Debe de Pagar el Precio Adicional de | $ 5,000 |

**Ejemplo C**

| | |
|---|---|
| Propiedad Comparable de Restitución | $100,000 |
| Precio de Compra de Restitución | $ 99,000 |
| Precio de Adquisición de su Propiedad | – $ 98,000 |
| Diferencia de Precio | $ 1,000 |

*En el ejemplo C usted solo recibirá $1,000 – no la cantidad completa de "La propiedad Comparable de Restitución" por los requisítos de "Gastar para Obtener" de Caltrans.*

**PARA QUE UN "DUENO OCUPANTE DE 180 DÍAS" RECIBA LA CANTIDAD TOTAL DE SUS BENEFICIOS DE PAGOS PARA VIVIENDA** (*Diferencia de Precio, Diferencia de Hipoteca y Gastos Incidentales), usted debe:*

A) Comprar y ocupar una vivienda de restitución que sea DS&S dentro de al menos un año desde la fecha más tarde de:

(1) La fecha en que recibió la primera notificación de una casa de restitución, **O**

(2) La fecha que Caltrans pagó los costos de adquisición de su vivienda actual (usualmente los gastos de cierre de escritura en la adquisición del Estado.)

**Y**

B) Haber gastado al menos la cantidad que Caltrans estableció para "La Propiedad Comparable de Restitución" para la propiedad de restitución.

**Y**

C) Reportar un reclamo para pago para reubicación dentro de los 18 meses de la fecha más tarde de:

(1) La fecha en que se mudó de la propiedad adquirida por Caltrans, **O**

(2) La fecha en que Caltrans le pagó los costos de adquisición de su vivienda actual (usualmente al cierre de escritura en la adquisición del Estado.)

Usted no será elegible para recibir ningún pago de reubicación hasta que el Estado haya hecho la primera oferta por escrito de la compra de la propiedad. Usted también recibirá una notificación escrita por lo menos 90 días antes de tener que mudarse.

## Para Dueños Ocupantes e Inquilinos de 90 Días o Más

**Si usted califica como un ocupante (ya sea como dueño o inquilino) de 90 días, usted puede ser elegible para un Pago de Vivienda de Restitución en la forma de Diferencia para Rentar.**

El pago de la **Diferencia para Rentar** es designado para asistirle en la renta de una vivienda comparable que sea decente, segura y sanitaria. El pago será basado en la diferencia entre la renta básica mensual por la propiedad adquirida por Caltrans (incluyendo el promedio del costo mensual de servicios públicos) y el menor de:

a) La renta mensual y el promedio del costo mensual estimado de los servicios públicos para una vivienda comparable de restitución determinada por Caltrans, **O**

b) La renta mensual y el promedio del costo mensual estimado de los servicios públicos para una vivienda decente, segura y sanitaria que usted rente como vivienda de restitución.

Gastos de servicios públicos son esos gastos que usted incurre por calefacción, luz, agua, aguas negras y basura – sin importar quien los provea (ejemplo, electricidad, gas propano, y sistema séptico.) No incluye cable de televisión, teléfono, o seguridad. Los servicios públicos en su propiedad de restitución será el estimado del promedio de costos por los 3 últimos meses para el tipo de vivienda y área usados en los cálculos.

Esta diferencia es multiplicada por 42 meses y le puede ser pagado en una sola suma o en pagos periódicos de acuerdo con la política y regulaciones. (Vea un ejemplo en la página 21.)

Para recibir la cantidad calculada total de la diferencia para rentar, usted debe gastar al menos la cantidad calculada por Caltrans en la propiedad de restitución.

Este pago puede – con ciertas limitaciones – ser convertido en una **Opción para Enganche** para asistirle en la compra de una propiedad de restitución (Vea la página 25 para una explicación completa.)

**EJEMPLO DE LA COMPUTACIÓN DEL PAGO DE LA DIFERENCIA PARA RENTAR:**

Después de hacer un estudio completo de viviendas comparables, decentes, seguras y sanitarias que estén disponibles para rentar, Caltrans determina que una propiedad comparable de restitución podría ser rentada por $325 al mes.

**Computación de Caltrans**

| | |
|---|---|
| Renta por una Propiedad Comparable de Restitución | $ 325 al mes |
| MÁS: estimado de costos de servicios públicos | 100 al mes |
| TOTAL Costo de renta por una Propiedad Comparable de Restitución | $ 425 al mes |
| Renta por su Propiedad Actual | $ 300 al mes |
| MÁS: costos de servicios públicos | 90 al mes |
| TOTAL Costo para pagar la renta de su propiedad actual | $ 390 al mes |
| Propiedad Comparable de Restitución incluyendo servicios públicos | $ 425 al mes |
| Costo para pagar la renta de su propiedad incluyendo servicios públicos | 390 al mes |
| Diferencia | $ 35 al mes |

Multiplicado por 42 meses = $1,470 Diferencia para Rentar

**Ejemplo A:**

| | |
|---|---|
| Renta para una Propiedad de Restitución, incluyendo los costos estimados de servicios públicos | $ 525 al mes |
| Propiedad Comparable de Restitución incluyendo servicios públicos | $ 425 al mes |
| Costos de pago de la renta de su propiedad incluyendo servicios públicos | $ 390 al mes |

Ya que $425 es menos que $525, la diferencia para rentar está basada en la diferencia entre $390 y $425.

Diferencia para Rentar ($35 x 42 meses = $1,470)

En este caso usted gasta “al menos” la cantidad de la Propiedad de Restitución Comparable en la propiedad de restitución y así recibirá la cantidad total.

**Ejemplo B:**

| | |
|---|---|
| Renta por una Propiedad de Restitución, incluyendo los costos estimados de servicios públicos | $ 400 al mes |
| Propiedad Comparable de Restitución incluyendo servicios públicos | $ 425 al mes |
| Costos de pago de la renta de su propiedad incluyendo servicios públicos | $ 390 al mes |

Ya que $400 es menos que $525, la diferencia para rentar está basada en la diferencia entre $400 y $390.

Diferencia para Rentar ($10x 42 meses = $420)

En este caso usted va a gastar “menos que” la cantidad de Propiedad de Restitución Comparable en la restitución de la vivienda y usted no recibirá la cantidad total.

**PARA QUE UN “DUENO OCUPANTE DE 90 DÍAS” RECIBA LA CANTIDAD TOTAL DE PAGO PARA SU VIVIENDA DE RESTITUCION** (Diferencia para Rentar), **usted debe de:**

A) Rentar y ocupar una vivienda de restitución DS&S dentro de un año después de la última fecha de:

(1) La fecha en que usted recibió la primera notificación de una casa de restitución disponible, **O**

(2) El día en que usted su mudó de la propiedad adquirida por Caltrans.

**Y**

B) Gastar al menos la cantidad de la “Propiedad Comparable de Restitución” de Caltrans para rentar una vivienda de restitución.

**Y**

C) Reportar un reclamo para pagos de reubicación dentro de los 18 meses de la fecha más tarde:

(1) La fecha en que usted se mudó de la propiedad adquirida por Caltrans, **O**

(2) La fecha en que Caltrans le pagó los costos de adquisición de su propiedad actual (usualmente al cierre de escritura de la adquisición del Estado.)

Usted no será elegible para recibir ningún pago de reubicación hasta que haya hecho la primera oferta escrita para comprar la propiedad. Además, usted recibirá al menos una noticia por escrito 90 días antes de tener que mudarse.

# OPCIÓN PARA ENGANCHE

El pago de Diferencia para Rentar puede – con ciertas limitaciones – ser convertido en una **Opción para Enganche** para asistirle en la compra de una propiedad de restitución. La Opción para Enganche es una conversión directa del pago de la diferencia para rentar.

Si la diferencia para rentar es calculada entre $0 y $5,250, su Opción Para Enganche será de $5,250 la cual puede ser usada para la compra de una vivienda de restitución decente, segura y sanitaria.

Si la diferencia para rentar es más de $5,250 usted podrá convertir la cantidad completa de diferencia para rentar a una Opción Para Enganche.

La Opción Para Enganche debe de ser usada para el enganche requerido, la cual usualmente es un porcentage del precio total de compra, más cualquier gasto incidental elegible (vea la página 14, “Gastos Incidentales para Dueños Ocupantes de 180 días”) relacionado con la compra de la propiedad. Usted debe trabajar junto con su Agente de Reubicación para asegurarse de que puede utilizar la cantidad total de su Opción Para Enganche en su compra.

Si alguna porción de la diferencia para rentar fue usada antes de su decisión de convertirla a una Opción Para Enganche, los pagos avanzados serán deducidos de los beneficios completos.

# CASA DEL ÚLTIMO RECURSO

En la mayoría de los proyectos de Caltrans, existe una cantidad adecuada de viviendas de venta y alquiler, y los beneficios serán suficientes para que usted pueda reubicarse a una vivienda comparable. Sin embargo, en ciertas localidades pueden haber proyectos donde el número de viviendas disponibles no son suficientes para proveer viviendas a todas las personas desplazadas. En estos casos, Caltrans utiliza un método llamado Casa del Último Recurso. La Casa del Último Recurso permite a Caltrans construir, rehabilitar, o modificar viviendas para cumplir con las necesidades de las personas desplazadas por un proyecto. Caltrans puede también pagar arriba de los límites legales de $5,250 y $22,500 para hacer posible viviendas con precios razonables.

## Asistencia de Consulta Para Reubicación

A cualquier individuo, familia, negocio u operación agrícola desplazada por Caltrans deberá ofrecérsele servicios de asistencia con el propósito de localizar una propiedad de restitución. Los servicios de reubicación son proveídos por empleados calificados de Caltrans. Es la meta de ellos y el deseo de estos empleados de servirle y asistirle de cualquier manera posible para ayudarle a reubicarse exitosamente.

Un Agente de Reubicación de Caltrans se pondrá en contacto con usted personalmente. Los servicios de reubicación y pagos se le explicarán de acuerdo con su elegibilidad. Durante la entrevista inicial, sus necesidades de vivienda y deseos se determinarán así como sus necesidades de asistencia. No se le puede pedir que se mude a menos que una vivienda comparable de restitución le sea disponible.

Usted puede esperar recibir los siguientes servicios, consejos y asistencia de su Agente de Reubicación quien le:

- Explicará los beneficios de reubicación y los requesitos de elegibilidad.
- Proveerá por escrito la cantidad de pago por su vivienda de restitución.
- Asegurará la disposición de una propiedad comparable antes de que se mude.
- Inspeccionará las posibles unidades residenciales de restitución para el cumplimiento de DS&S.

- Proveerá información y aconsejará como puede obtener ayuda para minimizar las adversidades en ajustarse a su nueva localidad.
- Ayudará en completar los documentos de préstamos, aplicaciones de rentas o las Formas de Reclamo para Reubicación.

Y proveerle información de:

- Seguro de Depósitos
- Taza de intereses y términos
- Pagos típicos de enganches
- Requisitos de préstamos de la Administración de Veteranos (VA) y la Administración de Vivienda Federal (FHA)
- Impuestos sobre bienes raíces
- Literatura de educación en viviendas para el consumidor

Si usted lo desea, el Agente de Reubicación le dará una lista actual de otras viviendas de restitución disponibles.

Se proveerá transportación para inspeccionar viviendas disponibles, especialmente si usted es mayor de edad o con impedimiento físico. Aunque usted puede utilizar los servicios de un agente de bienes raíces, Caltrans no lo podrá referir.

Su Agente de Reubicación está familiarizado con los servicios proveídos por otras agencias de su comunidad y le proveerá información de otros programas de viviendas federales, estatales y locales que ofrecen programas de asistencia para personas desplazadas. Si usted tiene algun problema especial, su Agente de Reubicación hará su mejor esfuerzo para asegurarle los servicios de esas agencias con personal capacitado y con experiencia que le ayudarán.

Si el proyecto de transportación requiere un número considerable de personas que sean reubicados, Caltrans establecerá una Oficina Temporal de Reubicación en, o cerca del proyecto. Las oficinas de proyectos de reubicación deberán de abrirse durante horas convenientes y en horas tempranas de la noche, si es necesario.

Además de estos servicios, Caltrans es requirido que coordine las actividades de otras agencias que causen desplazamientos para asegurar que todas esas personas desplazadas reciban beneficios de reubicación equitativos y consistentes.

Recuerde – SU AGENTE DE REUBICACIÓN está para aconsejarle y asistirle. No vacile en hacer preguntas, y asegúrese de que entiende completamente sus derechos y beneficios de reubicación disponibles.

# SUS DERECHOS COMO UNA PERSONA DESPLAZADA

Todas las personas elegibles como personas desplazadas tienen la libertad de escoger dentro de la selección de viviendas de restitución, y Caltrans no requerirá a ninguna persona que sea desplazada que acepte una vivienda de restitución proveída por Caltrans. Si usted decide no aceptar la vivienda de restitución ofrecida por Caltrans, usted puede elegir una vivienda de restitución de su propia selección, mientras que cumple con los requisítos de DS&S. Caltrans no pagará más que los beneficios calculados por una vivienda de restitución.

Lo más importante que usted debe de recordar es que la vivienda de restitución que usted seleccione debe de llenar los requisítos básicos de "decente, segura y sanitaria". No ejecute los documentos de compra o el contrato de renta hasta que un representante de Caltrans haya inspeccionado y certificado por escrito que la vivienda que usted se propone ocupar cumple con los requisítos básicos. **NO ARRIESGUE** su derecho de recibir los pagos de vivienda de restitución por mudarse a una vivienda que no sea "decente, segura y sanitaria."

Es importante recordar que sus beneficios de reubicación no van a tener ningún efecto adverso en su:

- Elegibilidad para Seguro Social
- Elegibilidad para Asistencia Social
- Impuestos sobre ingresos

Además, el Título VIII de los Derechos Civiles, Ley de 1968 y luego otras leyes y enmiendas hacen descriminatoria la práctica de compra y renta de unidades de vivienda si es basada ilegalmente en la raza, color, religión, sexo u origen nacional.

Cuando sea posible, a personas de minorías se les debe de dar oportunidades razonables para reubicarse a viviendas de restitución que sean decentes, seguras y sanitarias, no localizadas en áreas de concentración de minorías, y que estén dentro de sus recursos económicos. Esta política, sin embargo, no requiere que Caltrans provea a una persona pagos más grandes de lo que sean necesarios para permitir que la persona sea reubicada a una vivienda de restitución comparable.

La política No-Descriminatoria de Caltrans asegura que todos los servicios y/o los beneficios deben de ser administrados al público en general sin importar la raza, color, origen nacional, o sexo en cumplimiento con el Título VI de la Ley de Derechos Civiles de 1964 (42 USC 2000 d. et seq.)

Usted siempre tendrá el Derecho de Apelar cualquier decisión hecha por Caltrans relacionada a los beneficios de reubicación y elegibilidad.

Su Derecho de Apelar está garantizado en la “Ley Uniforme” la cual establece que una persona puede apelar al jefe de la agencia responsable, si ella cree que la agencia ha fallado en determinar correctamente su elegibilidad, o la cifra del pago autorizado por la Ley.

Si usted indica su disatisfacción, ya sea verbalmente o por escrito, Caltrans le asistirá en hacer su demanda de apelación y le explicará el procedimiento que debe de seguir. Usted tiene derecho de ser representado por un asesor legal u otro representante en conexión con su apelación (pero solamente por su propia cuenta.)

Caltrans considerará toda justificación y materia pertinente que usted entregue u otra información disponible, necesaria para asegurar una audiencia equitativa. Caltrans le proveerá una determinación por escrito del resultado de su apelación, con una explicación sobre la base de la decisión. Si usted aún no está satisfecho con la decisión otorgada, Caltrans le aconsejará que usted puede pedir una audiencia judicial.

**Noticiero de la Ley para Americanos con Incapacidades Físicas (ADA):**

> **Para personas con incapacidades físicas, este documento es disponible en formatos alternativos. Para Información llame al número (916) 654-5413 Voz, CRS: 1-800-735-2929, o escriba a Derecho de Vía, MS 37, 1120 N Street, Sacramento, CA 95814.**

# NOTAS

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# Your Property Your Transportation Project

Caltrans

# INTRODUCTION

This booklet was prepared for you as a person who may potentially be affected by a proposed public transportation project. If it is your property that is affected, you may have wondered what will happen. Who will contact you? What will you be paid for your property? Who will pay your moving costs? Will the State Department of Transportation (Department) help you find a new place to live? Important questions like these require specific answers.

We hope this booklet will answer some of your questions and present a better picture of our overall procedures.

# WHY DOES A PUBLIC AGENCY HAVE THE RIGHT TO BUY MY PROPERTY?

Our State and federal constitutions recognize the need for public agencies to purchase private property for public use, and provide appropriate safeguards to accomplish this purpose. State and federal constitutions and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended, authorize the purchase of private property for public use and assure full protection of the rights of each citizen. The responsibility for studying potential sites for a transportation project rests with a team of specially trained individuals selected to do this important job. Many months or even years are spent in preliminary study and investigation to consider possible locations for a project.

Consideration of the environmental and social impacts are as much a part of location determination as engineering and cost. Participation by private citizens and public agencies is actively sought so that various views can be considered in the study process. The process may include public hearings and/or workshops, which give persons an opportunity to express their views on the locations being considered.

The California Department of Transportation is composed of many specialists. Among these are:

**Transportation Planners**

These individuals determine methods and routes for the traveling public. This includes studies of existing traffic patterns, "origin-destination" surveys and user benefits. They also determine whether the proposed project location is economically sound. They research and analyze the effects produced by similar projects upon other communities.

**Environmental Planners**

These individuals evaluate the socio-economic and/or environmental impacts, including traffic, noise and visual impacts of the proposed project

**Design Engineers**

These individuals recommend the type of transportation project which will be of the most benefit to the public. They prepare design plans which determine the properties needed for the project.

**Relocation Specialists**

These individuals perform early studies of the general needs of persons who may need to be relocated and the kind of replacement properties which may be required. A relocation impact analysis will be completed before the Department requires anyone to move from their property.

As a result of this team effort, the best possible location for a transportation facility is selected after thorough social, economic, engineering, and environmental analyses, as well as consideration of expressed public concerns and desires. The goal is that the project provide the greatest public good and the least private injury or inconvenience while rendering the best possible service.

**Transportation Surveyors**

These individuals perform field surveys and monument property lines to delineate and map the Department's right of way needs. They are also authorized by law to enter real property to perform such tasks. It is the Department's policy that owners and tenants of property will be notified prior to such surveys.

## WHO WILL CONTACT ME?

One of the first persons you will meet is a Right of Way Agent performing the staff appraisal. You will be afforded the opportunity to accompany the appraiser on the inspection of your property. At the time of the inspection the appraiser will also provide you with general project information. The appraiser will analyze your property and examine all of the features which contribute to its market value. Information about improvements you have made and any other special features that you believe may affect the market value of your property should be given to the appraiser to ensure he/she has all the information you feel is relevant.

It is the duty of the Department to ensure that you receive fair market value as if you sold your property privately in the open market. The Department cannot buy your property for more than it is worth, but it **can** and **will** assure you that you do not have to sell your property for less than its fair market value. California law provides that the owner shall receive a copy of the appraisal or a summary of the valuation upon which the Department's offer is based.

At the time the offer is made to purchase your property, you may obtain your own appraisal and the Department will reimburse you up to $5,000 for the actual, reasonable costs of obtaining an independent appraisal. A licensed State appraiser must perform your appraisal. Your Right of Way Agent will provide more information concerning this reimbursement at the time of the offer.

## WHAT ADVANTAGE IS THERE IN SELLING YOUR PROPERTY TO THE DEPARTMENT?

A real estate purchase by the Department of Transportation is handled in the same way as any private sale of property. However, there can be financial advantages in selling to the Department.

The Department will pay fair market value for your property. The Department will also pay for the preparation of all documents, all title and escrow fees, a policy of title insurance, recording fees and such other fees as may be required for the conveyance of title to the Department. Since this is a direct conveyance of real property from the property owner to the Department, there are no real estate commissions involved, and the Department will not recognize or pay any such real estate commissions.

A private sale will usually cost thousands of dollars in sales expenses. There are no seller's expenses in a purchase by the Department.

Additionally, depending on your specific circumstances, you may be eligible for relocation payments and benefits when you move. These benefits are described in supplemental booklets which will be provided to you, should the Department's acquisition actually cause you to be displaced from your property.

## WILL I BE PAID FOR LOSS IN VALUE TO MY REMAINING PROPERTY?

When only a part of your property is needed for a project, every reasonable effort is made to ensure that you do not suffer damages to the remainder of your property. The total payment by the Department will be for the property the Department actually purchases and for any loss in market value to your remaining property.

The determination of any loss in market value is an appraisal problem involving many variables. When this situation occurs, the Right of Way Agent will explain the effect of a partial acquisition on your remaining property.

## MAY I RETAIN AND MOVE MY HOME, BUSINESS BUILDING, MACHINERY, OR EQUIPMENT?

If your house is movable and you wish to make such an arrangement, the Department will pay you on the basis of the market value of your present lot including landscaping, plus the reasonable cost of moving the building. There are cases where, because of age, size or condition of the house, the cost of moving it would exceed its present market value, less its salvage value. In such a case, payment of moving costs would, of course, be an unwise expenditure of public funds.

If you operate a farm or business, you may wish to keep and move fixed machinery and equipment. Additionally, as an owner of a business conducted on the property to be purchased, you may be entitled to compensation for a loss of business goodwill. Your specific circumstances will need to be analyzed on a case-by-case basis.

If any of these concepts are applicable to your situation, they will be explained by the Right of Way Agent assigned to purchase your property.

## WILL I HAVE TIME TO SELECT ANOTHER HOME AFTER THE DEPARTMENT MAKES ITS PURCHASE?

The Department starts to appraise properties early enough so that you will have ample time to move prior to project construction. Like any other real estate transaction, it requires time to close an escrow after a right of way contract and deed have been signed. You will not be required to move until reasonable, decent, safe and sanitary replacement housing is available.

Once you have received the written offer to purchase your property from the Department, it is in your best interest to look for a new place to live as soon as possible. Finding a home early that best suits your needs before you are required to move will minimize your personal inconvenience and will avoid having to make a choice of housing under pressure. In some instances you may be able to sell your property to the Department and rent back temporarily pending construction.

The Department also offers to provide you with assistance in finding a new place in which to live. The Department will give you at least 90 days notice in writing before you are required to move.

## WHAT HAPPENS TO THE LOAN ON MY PROPERTY?

After you and the Department have agreed upon a price, a Right of Way Agent and/or a title company will contact all other parties having an interest in the property. Payment to satisfy outstanding loans or liens will be made through a title company escrow as in the case in any real estate transaction.

## WHAT WILL HAPPEN TO MY GI OR CAL-VET LOAN?

The Veterans Administration and the California Department of Veterans Affairs allow your veteran loan privileges to be transferred and to become available for coverage on another property.

Your Right of Way Agent will assist you in the transfer. However, it is to your benefit and your responsibility to check with the Veterans Administration or the California Department of Veterans Affairs for procedural instructions.

## IF THE VALUE OF MY PROPERTY IS HIGHER TODAY THAN WHEN I PURCHASED IT, DO I HAVE TO PAY INCOME OR CAPITAL GAINS TAX ON THIS DIFFERENCE WHEN I SELL/CONVEY TO THE DEPARTMENT?

According to the Internal Revenue Service, the sale of property to a governmental agency for public purposes comes under the definition of an "involuntary conversion". In these cases, it is not necessary to pay income tax or capital gains tax if the money you receive is used to buy a similar property within a limited period of time. In every case, however, you should check with your local Internal Revenue Service office and/or accountant.

## WILL I LOSE THE FAVORABLE PROPERTY TAX BASIS THAT I NOW HAVE UNDER THE PROVISIONS OF PROPOSITION 13?

Section 2(d) of Article XIII-A of the California Constitution and Section 68, Rule 462.5 of the Revenue and Taxation Code generally provide that property tax relief shall be granted to any real property owner who acquires comparable replacement property after having been displaced by governmental acquisition or eminent domain proceedings.

You will be given a copy of Rule 462.5 with an attached page showing examples of how to calculate estimates of the tax relief you may be eligible for. These are only approximations. You must see your county Tax Assessor for a final determination.

Note: Revenue and Taxation Code Section 68, Rule 462.5, G. 1 through G.4, set forth time limits that may affect your eligibility to retain your favorable current real property tax status.

## THE DEPARTMENT'S RIGHT OF EMINENT DOMAIN.

An owner's rights are guaranteed by the federal and State constitutions and applicable federal and State laws. The principal right is that "Just Compensation" must be paid.

The vast majority of our transactions are settled by contract. However, if the owner and the Department cannot agree on the terms of sale, the Department may resort to the eminent domain process to avoid delaying the project, and will ultimately initiate condemnation proceedings.

The Department will request authority from the California Transportation Commission (Commission) to file a condemnation action in court. You will be given an opportunity to appear before the Commission to question whether public interest, necessity, planning and location require the proposed project and your property. The Commission does not hear arguments regarding valuation or just compensation.

Condemnation lawsuit documents are prepared by the Department and filed with the court in the county where the property is located. The Summons and Complaint will then be served on all persons having a property interest in the parcel. The persons served must Answer the lawsuit within 30 days.

Counsel for the parties will then prepare for trial, and the court will set dates for preliminary motions and the trial.

## WHAT HAPPENS IN A CONDEMNATION TRIAL?

The purpose of the trial is to determine the amount of Just Compensation. Usually the trial is conducted before a judge and jury. Both the property owner and Department will have the opportunity to present evidence of value. The jury will determine the amount of compensation after being instructed as to the law by the judge. In those cases where the parties choose not to have a jury, the judge will decide the amount of compensation.

The Judgment is then prepared by counsel and signed by the judge. It will state that, upon payment of the amount of the verdict for the benefit of the property owner, title will be transferred to public ownership.

When the Department makes the payment as required by the Judgment, the Final Order of Condemnation is signed by the judge and recorded with the County Recorder's office. This finalizes the actual transfer of title.

## WHO PAYS THE CONDEMNATION TRIAL COSTS?

The Department pays the costs of its attorney and its engineering and appraisal witnesses. It will also pay the jury fees and your recoverable costs allowed by law. The fee for filing your Answer with the court is an example of such costs.

If the judge determines that the Department's offer of settlement was unreasonable, while the demand of the property owner was reasonable as viewed in light of the evidence admitted at trial and the verdict, the property owner may receive litigation expenses such as their attorney's fees. The Judgment is then prepared by counsel and signed by the judge.

## IF I WANT A TRIAL, MUST I HAVE AN ATTORNEY AND EXPERT WITNESSES?

Most property owners will be represented by an attorney, although they have the right to represent themselves.

You may wish to consult your family attorney. If you do not have one, in many communities the yellow pages of the telephone directory will refer you to an attorney reference service. The local bar association may also provide a list of attorneys who may offer services in eminent domain proceedings.

You and your attorney must decide what type of case you will present and what witnesses will be needed.

## WILL I BE PAID ANY RELOCATION ASSISTANCE BENEFITS EVEN THOUGH I GO TO COURT?

A decision to go to court has no effect on your right to relocation benefits. Payment of relocation benefits is administered separately from the condemnation action. You will be provided details of additional assistance to help displaced persons, businesses, farms or nonprofit organizations in finding, purchasing or renting, and moving to a new location. These are explained in various booklets prepared for homeowners, tenants, and business and farm operators and are made available by the Department of Transportation.

## HOW LONG CAN I KEEP MY PROPERTY?

Continued use of your property usually depends on when construction must begin, including utility relocations, and the demolition and/or clearance of buildings. If construction must begin before the trial, the Department will seek a court order for early possession of your property.

In this regard the Department will be required to deposit with the State Treasurer, the probable amount of just compensation, as determined by an appraisal as security for the value of the property rights it is seeking. The court will determine if the amount of money deposited is adequate. Once the deposit is made the owner may withdraw all or a portion of it at any time during the condemnation proceedings.

The court may then grant to the Department an order for early possession allowing the Department to use the property for construction of the project.

To obtain an Order for Possession, the Department will file a motion with the court and schedule a hearing 90 days after you and all occupants of the property are served with the motion papers (60 days if the property is unoccupied). You and the occupants, if any, will have 30 days to oppose the motion. Once the court grants an Order for Possession of the property, the Department may obtain possession of the property 30 days after the owner and any occupants are served with the Order.

Subject to the rights of any other persons having an interest in the property, you may withdraw all or part of the pre-Judgement deposit. If you do not make a withdrawal, the Department will pay interest on the eventual court award, or agreed settlement sum from the time it legally occupied your property until the date of final payment to you. Interest will accrue at the applicable statutory rate until paid at the time of final settlement.

The Department's Right of Way Agent assigned to purchase your property will assist you in the transaction and will be available to answer any additional questions you may have.

# DEFINITIONS

The language used in relation to eminent domain proceedings may be new to you. These are some terms you may hear and their general meaning.

**Acquire** - To purchase

**Answer** - The property owner's written reply, in appropriate legal form, filed with the court in response to the eminent domain complaint and as requested by the summons.

**Compensation** - The amount of money to which a property owner is entitled under the law for the purchase of their property and any related damages.

**Complaint** - The document filed with the court by the Department which initiates an eminent domain proceeding.

**Condemnation** - The legal process by which a proceeding in eminent domain is accomplished.

**Counsel** - An attorney or attorneys.

**Department** - The State of California acting through the Department of Transportation.

**Eminent Domain** - The right of government to purchase private property for public use.

**Fair Market value** - The fair market value of the property taken is the highest price on the date of valuation that would be agreed to by a seller, being willing to sell but under no particular or urgent necessity for so doing, nor obliged to sell, and a buyer, being ready, willing and able to buy but under no particular necessity for so doing, each dealing with the other with full knowledge of all the uses and purposes for which the property is reasonably adaptable and available.

**Final Order of Condemnation** - The instrument which, when recorded, transfers title to public ownership.

**Judgment** - The court's formal decision based on applicable law and the verdict.

**Just Compensation** - The measure of Just Compensation is Fair Market Value.

**Loss of business goodwill** - A loss in the value of a business caused by the Department's acquisition of property that cannot be reasonably prevented by relocation of the business or the owner adopting prudent or reasonable steps that preserve the value of the business goodwill.

**Parcel** - Usually means the property that is being acquired.

**Plaintiff** - The public agency that desires to purchase the property.

**Possession** - Legal control; to have the right to use.

**Property** - The right or interest which an individual has in land, including the rights to use or possess. Property is ownership; the exclusive right to use, possess or dispose of a thing.

**Right of Entry** - An agreement between an owner and the Department which allows the Department to utilize the property while continuing to negotiate the terms of settlement. Interest, calculated at the statutory rate, is included in the settlement upon conclusion of the transaction.

**Summons** - Notification of filing of a lawsuit in eminent domain and of the necessity to file answer or other responsive pleading.

**Title** - Legal ownership.

**Trial** - The hearing of the facts from a plaintiff and defendant in court of law, either with or without a jury.

**Verdict** - The amount of just compensation to be paid for a property including any damages to the remainder, if applicable.

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**STATE OF CALIFORNIA**
**BUSINESS, TRANSPORTATION AND HOUSING AGENCY**
**DEPARTMENT OF TRANSPORTATION**
**DIVISION OF RIGHT OF WAY AND LAND SURVEYS**

**JULY 2008**

**This is an informational pamphlet only. It is not intended to give a complete statement of all State or federal laws and regulations pertaining to the purchase of your property for a public use, the Relocation Assistance Program, technical legal definitions, or any form of legal advice.**

**ADA Notice**

**For individuals with disabilities, this document is available in alternate formats.**
**For information contact:**

**Division of Right of Way and Land Surveys**
**(916) 654-5896**
**CRS: (800) 735-2929**
**or write:**
**1120 N Street, MS 37**
**Sacramento, CA 95814**

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# Su Propiedad

# Su Proyecto de Transporte

**Julio 2008**

## Introducción

Este folleto fué preparado para personas, que como usted, pueden ser afectadas por un proyecto público de transporte. Si su propiedad es afectada, usted puede haberse preguntado que pasará? Quién se pondrá en contacto conmigo? Cúanto se le pagará por su propiedad? Quién pagará sus costos de mudanza? Le ayudará el Departamento de Transporte del Estado (Departamento) a encontrar un nuevo lugar donde vivir? Preguntas importantes como éstas requieren respuestas específicas.

Nosotros esperamos que este folleto conteste algunas de sus preguntas y que presente un cuadro mejor de nuestros procedimientos generales.

**Porqué una agencia pública tiene el derecho de comprar mi propiedad?**

Nuestas constituciones estatales y federales reconocen la necesidad de que las agencias públicas compren propiedad privada para uso público, y provean protección apropiada para llevar a cabo éste propósito. Las constituciones estatales y federales y el Acta Uniforme de Adquisición de Bienes Raíces y Asistencia para Relocalización de Propiedades, autoriza la compra de propiedad privada para uso público y asegura protección completa de los derechos de cada ciudadano. La responsabilidad de estudiar los posibles sitios para un proyecto de transporte depende de un grupo de individuos especialmente seleccionados y entrenados para hacer este importante trabajo. Muchos meses y hasta años son dedicados a los estudios preliminares e investigaciones para considerar localidades posibles para un proyecto.

La consideración del medio ambiente e impactos sociales son parte de la determinación de la localización, a como lo son la ingeniería y el costo. La participación de individuos privados y agencias públicas son activamente solicitadas para que diversas opiniones puedan ser consideradas en el proceso del estudio. El proceso puede incluir audiencias públicas y/o talleres de trabajo, que le darán a las personas oportunidad para que expresen sus opiniones de las localidades que son consideradas.

El Departamento de Transporte de California está formado por diversos especialistas. Entre estos están:

**Planificadores de Transporte**

Estos individous determinan métodos y rutas para el público viajero. Esto incluye estudios de modelos existentes de tráfico, inspección de “origin-destino” y beneficios de los usuarios. Ellos también determinan si la localización del proyecto propuesto es factible economicamente. Ellos investigan y analizan los efectos producidos por proyectos similares en otras comunidades.

**Planificadores del Ambiente**

Estos individuos evaluan el efecto socio-económico y/o los impactos del medio ambiente, incluyendo tráfico, ruido, e impactos visuales del proyecto propuesto.

**Ingenieros de Diseño**

Estos individuos recomiendan el tipo de proyecto de transporte que será de más beneficio para el público. Ellos preparan los planos de diseño los cuales determinan las propiedades necesarias para el proyecto.

**Especialistas de Relocalización**

Estos individuos hacen estudios preliminares de las necesidades generales que tendrán las personas al ser relocalizadas y el tipo de propiedades de reemplazo que serán requeridas. Un análisis de impacto de relocalización deberá ser completado, antes de que el Departamento requiera a alguien mudarse de su propiedad.

Como resultado del esfuerzo de este grupo, la mejor localización posible para el servicio de transporte es seleccionada después de un profundo análisis social, económico, de ingeniería y del medio ambiente, así como consideración de los deseos y problemas expresados por el público. La meta es que el proyecto provéa el mayor bienestar al público y cause el menor daño o inconveniencia privada, mientras se presta el mejor servicio posible.

**Agrimensores de Transporte**

Estos individuos realizan inspecciones de terrenos y monumentación de las líneas de propiedad para la delineación y preparación de mapas de los derechos de vías que necesite el Departamento. Ellos están autorizados por la ley para entrar a una propiedad privada a realizar dichas tareas. Es la guía interna del Departamento que los dueños e inquilinos de propiedad sean notificados antes de la inspección.

**Quién me contactará?**

Una de las primeras personas que conocerá es un Agente de Derecho de Vías realizando una evaluación. Usted tendrá la oportunidad de acompañar al evaluador en la inspección de su propiedad. En el momento de la inspección, el evaluador también le proveerá información general del proyecto. El evaluador analizará su propiedad y examinará todas las características que puedan contribuir al valor de mercado. Información acerca de las mejoras que ha hecho y otras características especiales que usted considere que pueden afectar el valor de mercado de su propiedad le serán entregadas al evaluador para asegurar que el/ella obtenga la información que usted considere relevante.

Es deber del Departamento asegurarle que recibirá el precio del valor de mercado que usted recibiría si vendiera su propiedad privadamente en el mercado abierto. El Departamento no puede comprar su propiedad por más de lo que vale, pero le **puede** y **le asegura** que no tendrá que vender su propiedad por menos del valor justo de mercado. La ley de California provee que el dueño reciba una copia completa de la evaluacion o una copia del resúmen de la evaluación en la que el Departamento basó su oferta.

Al tiempo de que la oferta es hecha para comprar su propiedad, usted puede obtener su propia evaluación y el Departamento le reembolsará hasta $5,000 por

los costos actuales y razonables para la obtención de una valoración independiente. Su Agente de Derecho de Vías le proveerá más información relacionada al reembolso durante el tiempo de la oferta.

**Que ventaja hay en vender su propiedad al Departamento?**

Una compra de bienes y raíces por el Departamento de Transporte es realizada de la misma manera que cualquier venta privada de propiedad. Sin embargo, pueden haber ventajas financieras en vender al Departamento.

El Departamento le pagará valor justo de mercado por su propiedad. El Departamento tambien pagará por la preparación de documentos, todos los gastos de título y registro, póliza de seguro del título, costos de archivo en el registro y otros honorarios que pueden ser requeridos en el cierre de venta con el Departamento. Ya que ésta es una venta directa del dueño de propiedad al Departamento, no hay comisiones de venta de bienes raíces envueltas, y el Departamento no reconocerá o pagará por estas comisiones.

Una venta privada usualmente cuesta miles de dolares en gastos de venta. El vendedor no incurre en ningún gasto de venta cuando la compra es hecha por el Departamento.

Adicionalmente, dependiendo de sus circunstancias específicas puede ser elegible para pagos de relocalización y beneficios cuando se mueva. Estos beneficios son descritos en folletos suplementarios los cuales le serán entregados en caso de que la adquisición por el Departamento le cause el desplazamiento de su propiedad.

**Seré pagado por pérdida en valor del remanente de mi propiedad?**

Cuando solo una parte de su propiedad se necesite para el proyecto, se hará todo el esfuerzo razonable para asegurar que usted no sufra daños en el remanente de su propiedad. El pago total por el Departamento será por la propiedad que el Departamento adquiera actualmente y por los daños de valor que el remanente de su propiedad sufra en el mercado.

La determinación de la pérdida de valor en el mercado es un problema de evaluación que implica una serie de variables. Si ésta situación se presenta, un Agente de Derecho de Vías le explicará los efectos de la compra parcial del remanente de su propiedad.

**Puedo reterner y mover mi casa, edificio de negocio, maquinaria ó equipo?**

Si su casa es movible y usted desea hacer dichos arreglos, el Departamento le pagará en base al valor presente de mercado de su lote, incluyendo jardines, más los costos razonables de mudanza del edificio. Hay casos en que por

edad, tamaño, o condición de la casa, los costos de mudanza podrían exceder al valor presente de mercado, menos el valor residual. En tal caso, por supuesto, el pago de costo de mudanza no sería un buen uso de los fondos públicos.

Si usted opera una granja o negocio, usted puede retener y mover su maquinaria fija y equipo si así lo desea. Adicionalmente, como dueño de un negocio conducido en la propiedd que será comprada, usted puede tener derecho a una compensación por la pérdida de clientela del negocio. Sus circunstacias específicas serán analizadas en la base de caso-por-caso.

Si cualquiera de estos conceptos son aplicables a su situación, le serán explicados en detalles por el Agente de Derechos de Vías asignado a la compra de su propiedad.

**Tendré tiempo de seleccionar otra casa despues que el Departamento haga su compra?**

El Departamento comenzará a valorar propiedades con suficiente antelación para que usted tenga tiempo suficiente de moverse antes de la construcción del proyecto. Como cualquier otra transacción de bienes y raíces, se require tiempo para cerrar escrituración después de que firme el contrato y la escritura de transferencia. A usted no se le pedirá que se mueva hasta que una casa de reemplazo razonable, decente, segura y sanitaria esté disponible.

Una véz que haya recibido la oferta por escrito del Departamento para comprar su propiedad, es en el mejor interes para usted buscar un nuevo lugar donde vivir lo más pronto posible. Encontrar una casa que mejor le convenga a sus necesidades, con tiempo antes de que usted sea requerido a moverse, le minimizará inconveniencias personales y usted evitará tener que hacer su selección bajo presión. En algunas ocasiones le será posible vender su propiedad al Departamento y rentarla temporalmente de nuevo dependiendo de la construcción.

El Departamento también le ofrece asistencia para encontrar un nuevo lugar en donde vivir. El Departamento le dará por lo menos 90 días de notificación por escrito antes que tenga que moverse.

**Que le pasa al préstamo en mi propiedad?**

Después que usted y el Departamento hayan acordado en un precio, un Agente de Derecho de Vías o una compañía de título contactará todas las personas que tengan interés en la propiedad. Los pagos para satisfacer los préstamos pendientes o las hipotecas serán hechos a través de una compañía de poliza de seguro de títulos de propiedad como en cualquier otra transacción de bienes y raíces.

**Qué le pasará a mi préstamo GI ó Cal-Vet?**

La Administración de Vetaranos y el Departamento de Veteranos de California permiten que los privilegios de préstamo para veteranos sean transferidos y estén disponibles para la cobertura en otra propiedad.

Su Agente de Derecho de Vías le asistirá en la transferencia. Sin embargo, es para su beneficio y es su responsabilidad de chequear con la Administración de Veteranos ó las instrucciones de procedimiento del Departamento de Vetaranos de California.

**Si el valor de mi propiedad es más alto hoy que cuando la compré, tendré que pagar impuestos sobre la renta o impuesto de ganacia de capital por la diferencia de cuando yo se la venda/transfiera al Departamento?**

Según la Oficina de Ingresos, la venta de propiedad a una agencia de gobierno para uso público está bajo la definición de una "conversión involuntaria." En estos casos, no es necesario pagar impuestos de ingresos o impuestos de ganacias de capital, si el dinero que usted recibirá es usado para comprar una propiedad similar dentro de un tiempo limitado. Sin embargo, en todo caso usted debe chequear con su Oficina de Ingresos y/o con un contador.

**Perderé el impuesto básico de propiedad que me es favorable ahora bajo las provisiones de la Proposición 13?**

La Sección 2(d) de la Constitución de California, Artículo XIII-A y Sección 68, Regla 462.5 del Código de Ingresos e Impuestos generalmente provéen que la ayuda de impuestos de propiedad tienen que ser otorgados a dueños de propiedades reales que adquieran propiedad comparable de reemplazo después que haya sido desplazado por la adquisición del gobierno o procedimiento de dominio público.

Se le entregará una copia de la Regla 462.5 con una hoja adjunta demostrando ejemplos de como calcular estimados de la ayuda de impuestos a los que usted puede ser elegible. Estas son solo aproximaciones. Usted debe hablar con su asesor de impuestos del condado para llegar a una determinación final.

Nota: El Código de Ingresos e Impuestos, Sección 68, Regla 462.5, G1 hasta la G.4, enuncia límite de tiempo que puede afectar su elegibilidad de retener su posición favorable actual de impuestos de la propiedad real.

**El derecho del Departamento de tomar la propiedad privada para uso público.**

El derecho de los dueños están garantizados por las constituciones federales y estatales, y las leyes federales y estatales que sean aplicables. El principio de

derecho es que una compensación justa debe de ser pagada.

La gran mayoría de nuestras transacciones son llegadas a acuerdo por medio de un contrato. Sin embargo, si el dueño y el Departamento no pueden llegar a un acuerdo de los términos de venta, el Departamento puede recurrir al proceso de dominio público evitando así atrasos al proyecto, y por último iniciar los procedimientos de condenación.

El Departamento pedirá autorización a la Comisión de Transporte de California (Comisión) para comenzar una acción de condenación en la corte. A usted se le dará la oportunidad que comparezca ante la Comisión y pregunte acerca del interés público, necesidad, planificación y localización requeridas por el proyecto y su propiedad. La Comisión no escucha argumentos con respecto a la valuación o compensación justa.

Los documentos de litigio de condenación serán preparados por el Departamento y sometidos a la corte en el condado donde la propiedad está localizada. Todas las personas que tienen derecho de propiedad en la parcela, deberán de ser notificadas con las citas y demandas. Las personas notificadas tienen que Contestar la demanda dentro de 30 días.

Los abogados de las partes se prepararán para el juicio y la corte establecerá los días para la moción preliminar y el juicio.

**Qué pasa en un Juicio de Condenación?**

El propósito del juicio es determinar la cantidad de Compensación Justa. Usualmente, el juicio es conducido ante el juez y un jurado. Los dos, el dueño de la propiedad y el Departamento, tendrán la oportunidad de presentar pruebas del valor de la propiedad. El jurado determinará la cantidad de compensación después de haber sido instruídos por el juez. En los casos donde los participantes escogen no tener jurado, el juez decidirá la cantidad de compensación.

La Sentencia es preparada por un abogado y firmada por el juez. Establecerá que cuando se haga el depósito de la cantidad del veredicto en la corte a beneficio del dueño de la propiedad, el título será transferido a la posesión pública.

Cuando el Departamento haga el pago requerido por la Sentencia, la Orden Final de Condenación es firmada por el juez y registrada en la Oficina de Registro del Condado. Esto finaliza el traspaso actual del título.

**Quien paga los costos del juicio de condenación?**

El Departamento paga los costos de sus propios abogados, ingenieros y testigos

evaluadores de la propiedad. Tambien pagará los honorarios al jurado y le pagará gastos recobrables permitidos por la ley. Los honorarios para archivar su Respuesta con la corte es un ejemplo de tales costos.

Si el juez determina que la oferta del Departamento no era razonable y que la demanda del dueño de la propiedad era razonable a la vista de la luz de la evidencia admitida en juicio y el veredicto, el dueño de la propiedad puede recibir gastos de litigio, por ejemplo, los gastos de honorarios de abogados. La Sentencia es entonces preparada por un abogado y firmada por el juez.

**Si yo quiero un juicio, tengo que tener un abogado y un testigo experto?**

La mayor parte de los dueños de propiedades serán representados por un abogado, aunque los propietarios tienen el derecho de representarse así mismo.

Si lo desea, puede consultar al abogado de su familia. Si usted no tiene uno, en muchas comunidades las páginas amarillas de la guía telefonica lo referirá a una agencia de servicios de abogados. La asociación local de abogados le puede proveer una lista de abogados que le podrían ofrecer servicios en procedimientos de dominio público.

Usted y su abogado deben decidir el tipo de caso que usted ha de presentar y que testigos necesitará.

**Seré pagado por gastos de mudanza o cualquier otro beneficio de asistencia de reubicación aunque tenga que ir a corte?**

Su decisión de ir a corte no tiene efecto en su derecho de beneficios de relocalización. El pago de sus beneficios de relocalización es administrado separadamente de la acción de condenación. Se le proveerá detalles adicionales de asistencia para ayudar a personas desplazadas, negocios, haciendas y organizaciones no lucrativas en encontrar, comprar, ó alquilar y moverse a la nueva localidad. Estos son explicados en varios folletos preparados para los dueños de casa, inquilinos, negocios y operadores de haciendas y son disponibles por el Departamento de Transporte.

**Por cuánto tiempo puedo retener mi propiedad?**

El uso contínuo de su propiedad usualmente depende de cuando la construcción va a comenzar, incluyendo la relocalización de las utilidades públicas, demolición y/o remoción de edificios. Si la construcción debe de comenzar antes de que el período de prueba comienze, el Departamento buscará una orden de la corte para la posesión temprana de la propiedad.

En relación a ésto el Departamento será requerido a depositar con el Tesorero del Estado, la cantidad probable de compensación justa que será determinada

por un evaluador como seguridad por el valor de los derechos de propiedad deseados. La corte determinará si el monto de dinero depositado es adequado. Una véz que el depósito sea hecho el dueño podrá retirar todo o parte de éste en cualquier momento durante los procedimientos de condenación.

La corte puede conceder al Departamento una orden de posesión temprana de la propiedad, permitiendo al Departamento el uso de la propiedad para la contrucción del proyecto.

Para obtener una Orden de Posesión, el Departamento archivará una moción con la corte y pedirá fecha para una audiencia 90 días después que usted y todos los ocupantes de la propiedad sean notificados con los documentos de la moción (ó 60 días si la propiedad no está ocupada). Usted y los ocupantes, si los hay, tendrán 30 días para oponerse a la moción. Una véz que la corte autorize una orden de posesión de la propiedad, el Departamento puede obtener la posesión de la propiedad 30 días después de que el dueño y algún otro ocupante sea notificado con la Orden.

Sujeto a los intereses que cualquier otra persona tenga en la propiedad, usted puede retirar todo o parte del depósito pre-Judicial.

Si usted no hace ningún retiro de dinero, el Departamento le pagará intereses en el evento que la corte le conceda algún derecho ó alguna suma acordada de compensación por el tiempo que legalmente su propiedad fué ocupada hasta la fecha que se le haga el pago final. La tarifa de intereses legales le serán pagados en el momento de la sentencia final.

El Agente de Derecho de Vías del Departamento que sea asignado a la compra de su propiedad le asistirá en la transacción y estará disponible para contestar cualquier pregunta adicional que tenga.

# Definiciones

El lenguaje usado en relación a los procedimientos de dominio público pueden ser nuevos para usted. Estos son algunos de los términos que usted puede escuchar y su significado general.

**Adquirir**

Comprar.

**Contestar**

La respuesta escrita del dueño de la propiedad en forma legal, archivada en la corte y en respuesta a la demanda de dominio público requerida por la notificación.

**Compensación**

El monto de dinero que el dueño de la propiedad tiene derecho bajo la ley por la compra o daño a la propiedad.

**Demanda**

El documento archivado en la corte por el Departamento el cual inicia un procedimiento de dominio público.

**Condenación**

El proceso legal por el cual el procedimiento para dominio público es llevado a cabo.

**Consejero legal**

Un abogado o abogados

**Departamento**

El Estado de California actuando a travéz del Departamento de Transporte.

**Dominio Público**

El derecho del gobierno de comprar propiedad privada para uso público

**Valor Justo de Mercado**

El valor justo de mercado de la propiedad es el precio más alto a la fecha de la valuación que sería acordada por un vendedor, con buena voluntad de vender, pero sin necesidad urgente u obligación particular por hacerlo; y un comprador que esté listo, disponible y capáz de comprar, pero sin una necesidad particular por hacerlo, cada uno tratando el otro con conocimiento total de todos los usos y propósitos por los cuales la propiedad es razonablemente adaptable y disponible.

**Orden Final de Condenación**

El instrumento por el cual, cuando es registrado, transfiere el título al dominio público.

**Sentencia**

La decisión formal de la corte basada en la leyes aplicables y el veredicto.

**Compensación Justa**

La Compensación Justa es el Valor Justo de Mercado.

**Pérdida de la Clientela del Negocio**

Es la pérdida de valor de un negocio causado por la adquisición de la propiedad por el Departamento que no puede ser prevenido razonablemente por la localización del negocio, o el dueño adoptando las medidas prudentes y razonables para preservar el valor de la clientela del negocio.

**Parcela**

Usualmente significa la propiedad que está siendo adquirida.

**Demandante**

La agencia pública que desea comprar la propiedad.

**Posesión**

Control legal; tener el derecho de uso.

**Propiedad**

El derecho o interés que un individuo tiene en un terrreno, incluyendo los derechos de usar o poseer. Propiedad también es considerada como el derecho exclusivo de usar, poseer o disponer de algo.

**Derecho de Entrada**

Un acuerdo entre un dueño y el Departamento que confiere derechos al Departamento a utilizar la propiedad mientras continuan las negociaciones de los términos de resolución. El interés, calculado en la tarifa legal corriente, es incluído en la resolución a la conclusion de la transacción.

**Citatorio**

Notificación que una demanda legal se ha archivado en un caso de dominio público y la necesidad de archivar una respuesta u otra declaración de respuesta.

**Título**

Documento legal de propiedad.

**Juicio**

La revision de los hechos de los demandantes y defensores ante un tribunal, ya sea con o sin jurado.

**Veredicto**

La cantidad de compensación justa que será pagada por la propiedad y los daños al remanente, si es aplicable.

**NOTAS:**

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**ESTADO DE CALIFORNIA**
**AGENCIA DE NEGOCIOS, TRANSPORTE Y VIVIENDA**
**DEPARTAMENTO DE TRANSPORTE**
**DIVISION DE DERECHO DE VIAS**
**Y**
**AGRIMENSURA**

# July 2008

***Este es solamente un folleto de información. Su objetivo no es ofrecer una declaración completa de todas las leyes estatales o federales ó las regulaciones relacionadas con la compra de su propiedad para uso público, el Programa de Asistencia para Relocalización, las definiciones técnicas legales, o ninguna otra forma de consejo legal.***

***Notificación ADA***

***Para individuos con desabilidades, este documento está disponible en formato alternativo. Para información contacte:***

***División de Derecho de Vías y Agrimensura***
***(916) 654-5896***
***CRS: (800) 735-2929***
***ó escriba a:***
***1120 N Street, MS 37***
***Sacramento, CA 95814***

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# Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

# Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their business, farm or non-profit organization, by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

> To ensure that persons displaced as a direct result of federal or federally-assisted projects 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.

*While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.*



## Relocation Services

The California Department of Transportation has two programs to aid businesses, farms and nonprofit organizations which must relocate.

These are:

1. The Relocation Advisory Assistance Program, which is to aid you in locating a suitable replacement property, and

2. The Relocation Payments Program, which is to reimburse you for certain costs involved in relocating. These payments are classified as:

   - Moving and Related Expenses (costs to move personal property not acquired).
   - Reestablishment Expenses (expenses related to the replacement property).
   - In-Lieu Payment (a fixed payment in lieu of moving and related expenses, and reestablishment expenses).

   Note: Payment for loss of goodwill is considered an acquisition cost. California law and the federal regulations mandate that relocation payments cannot duplicate other payments such as goodwill.

You will **not** be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. You will also receive at least 90 days' written notice before you must move.

## Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Business: Any lawful activity, with the exception of a farm operation, conducted primarily for the purchase, sale, lease and rental of personal or real property, or for the manufacture, processing, and/or marketing of products, commodities, or any other personal property, or for the sale of services to the public, or solely for the purpose of this Act, and outdoor advertising display or displays, when the display(s) must be moved as a result of the project.

Small Business: A business having not more than 500 employees working at the site being acquired or displaced by a program or project.

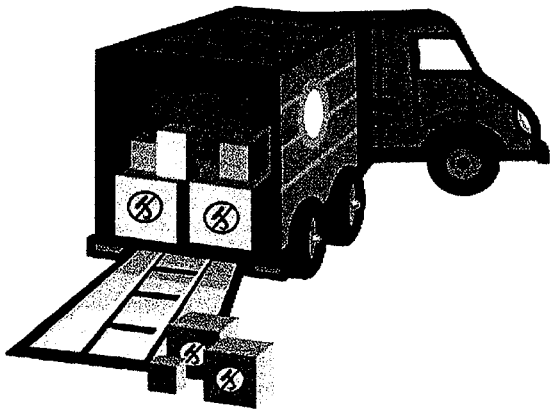


Contributes Materially: A business or farm operation must have had average annual gross receipts of at least $5,000 or average annual net earnings of at least $1,000, in order to qualify as a bona-fide operation.

Farm Operation: Any activity conducted solely or primarily for the production of one or more agricultural products or commodities, including timber, for sale and home use, and customarily producing such products or commodities in sufficient quantity to be capable of contributing materially to the operator's support.

Nonprofit Organization: A public or private entity that has established its nonprofit status under applicable law.

# MOVING EXPENSES



If you qualify as a displaced business, farm or nonprofit organization, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. To qualify you must legally occupy the property as the owner or lessee/tenant when Caltrans initiates negotiations for the acquisition of the property **OR** at the time Caltrans acquires title or takes possession of the property. However, to assure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.



## You Can Choose Either:

**Actual Reasonable Moving Costs -** You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses, with limitations, may include:

- Transportation.
- Packing and unpacking personal property.
- Disconnecting and reconnecting personal property related to the operation.
- Temporary storage of personal property.
- Insurance while property is in storage or transit, or the loss and damage of personal property if insurance is not reasonably available.
- Expenses in finding a replacement location.
- Professional services to plan and monitor the move of the personal property to the new location.
- Licenses, permits and fees required at the replacement location.

**OR**

**Self-Move Agreement -** You may be paid to move your own personal property based on the

lower of two acceptable bids obtained by Caltrans.

Under this option, you will still be eligible for reimbursement of related expenses listed above that were not included in the bids.

**OR**

**In-Lieu Payment –** A small business may be eligible to accept a fixed payment between $1,000 and $20,000, based on your annual earnings IN LIEU OF the moving cost and related expenses. Consult your Relocation Agent for more information about this option.

## Actual Reasonable Moving Costs

You may be paid the actual reasonable and necessary costs of your move when a professional mover performs the move. All of your moving costs must be supported by paid receipts or other evidence of expenses incurred. In addition to the transportation costs of your personal property, certain other expenses may also be reimbursable, such as packing, crating, unpacking and uncrating, and the disconnecting, dismantling, removing, reassembling, and reinstalling relocated machinery, equipment, and



other personal property.

Other expenses such as professional services necessary for planning and carrying out the move, temporary storage costs, and the cost of licenses, permits and certifications may also be reimbursable. This is not intended to be an all-inclusive list of moving related expenses. Your Relocation Agent can provide you with a complete explanation of reimbursable expenses.

## Self-Move Agreement

If you agree to take full responsibility for all or part of the move of your business, farm, or nonprofit organization, the Department may approve a payment not to exceed the lower of two acceptable bids obtained by the Department from qualified moving firms or a qualified Department staff employee. A low-cost or uncomplicated move may be based on a single bid or estimate at the Department's discretion. The advantage of this moving option is the fact that it relieves the displaced business, farm, or nonprofit organization operator from documenting all moving expenses. The Department may make the payment without additional documentation as long as the payment is limited to the amount of the lowest acceptable bid or estimate. Other

expenses, such as professional services for planning, storage costs, and the cost of licenses, permits, and certifications may also be reimbursable if determined to be necessary. These latter expenses must be pre approved by the Relocation Agent.

## Requirements:

Before you move, you must provide Caltrans with the:

- Certified inventory of all personal property to be moved.
- Date you intend to vacate the property.
- Address of the replacement property.
- Opportunity to monitor and inspect the move from the acquired property to the replacement property.



## Related Expenses

**1. Searching Expenses for Replacement Property:** Displaced businesses, farms, and nonprofit organizations are entitled to reimbursement for actual reasonable expenses incurred in searching for a replacement property, not to exceed $2,500. Expenses may include transportation, meals, and lodging when away from home; the reasonable value of the time spent during the search; fees paid to the real estate agents, brokers or consultants; and other expenses determined to be reasonable and

necessary by the Department.

**2. Direct Loss of Tangible Personal Property:** Displaced businesses, farms, and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property which is incurred as a result of the move or discontinuance of the operation. This payment will be based upon the lessor of:

a) The fair market value of the item for continued use at the displacement site minus the proceeds from its sale.

**OR**

b) The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.



**EXAMPLE:**
You determine that the "document shredder" cannot be moved to the new location because of its condition, and you will not replace it at the new location.

| | |
|---|---|
| Fair Market Value of the Document Shredder based on its use at the current location | $ 1,500 |
| Proceeds: Price received from selling the Document Shredder | - $ 500 |
| Net Value | $ 1,000 |

OR

| | |
|---|---|
| Estimated cost to move | $ 1,050 |

| | |
|---|---|
| Based on the "lessor of", the amount of the "Loss of Tangible Personal Property" = | **$ 1,000** |

Note: You are also entitled to all reasonable costs incurred in attempting to sell the document shredder (e.g. advertisement).

**3. Purchase of Substitute Personal Property:** If an item of personal property, which is used as part of the business, farm, or nonprofit organization, is not moved but is promptly replaced with a substitute item that performs a

comparable function at the replacement site, the displacee is entitled to payment of the lesser of:

a) The cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item;

**OR**

b) The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.



**EXAMPLE A:**

You determine that the copying machine cannot be moved to the new location because it is now obsolete and you will replace it.

| | | |
|---|---|---|
| Cost of a substitute *Copying Machine* including installation costs at the replacement site. | | $ 3,000 |
| Trade-in Allowance | - | $ 2,500 |
| Net Value | | $ 500 |

OR

| | |
|---|---|
| Estimated cost to move | $ 550 |

| | |
|---|---|
| Based on the "lessor of", the amount of the "Substitute Personal Property" = | **$ 500** |

**EXAMPLE B:**
You determine that the chairs will not be used at the new location because they no longer match the décor and you will replace them.

| | | |
|---|---|---|
| Cost of substitute chairs | | $ 1,000 |
| Proceeds: From selling the Chairs | - | $ 100 |
| Net Value | | $ 900 |

OR

| | |
|---|---|
| Estimated cost to move | $ 200 |
| Based on the "lessor of", the amount of the "Substitute Personal Property" = | **$ 200** |

Note: You are also entitled to all reasonable costs incurred in attempting to sell the document shredder (e.g. advertisement).

**4. Disconnecting and Reinstallation:** You will be reimbursed for your actual and reasonable costs to disconnect, dismantle, remove, reassemble and reinstall any machinery, equipment or other personal property in relation to its move to the new location. This includes connection to utilities available nearby and any modifications to the personalty that is necessary to adapt it to utilities at the replacement site.

**5. Physical changes at the new location:** You may be reimbursed for certain physical changes to the replacement property if the changes are necessary to permit the reinstallation of machinery or equipment necessary for the continued operation of the business. ***Note:*** *The changes cannot increase the value of the building*



*for general purposes, nor can they increase the mechanical capability of the buildings beyond its normal requirements.*

**6.** The cost of installing utilities from the right of way line to the structure(s) or improvements on the replacement site.

**7.** Marketing studies, feasibility surveys and soil testing.

**8.** Professional real estate services needed for the purchase or lease of a replacement site.

**9.** One-time assessments or impact fees for anticipated heavy utility usage.

## Reestablishment Expenses

A small business, farm or nonprofit organization may be eligible for a payment, not to exceed $10,000, for expenses actually incurred in relocating and reestablishing the enterprise at a replacement site.

Reestablishment expenses may include, but are not limited to, the following:

1. Repairs or improvements to the replacement real property required by Federal, State or local laws, codes or ordinances.

2. Modifications to the replacement of real property to make the structure(s) suitable for the business operation.

3. Construction and installation of exterior signing to advertise the business.

4. Redecoration or replacement such as painting, wallpapering, paneling or carpeting when required by the condition of the replacement site or for aesthetic purposes.

5. Advertising the new business location.

6. The estimated increased costs of operation at the replacement site during the first two years, for items such as:

   a) Lease or rental charges
   b) Personal or real property taxes
   c) Insurance premiums, and
   d) Utility charges (excluding impact fees).



7. Other items that the Department considers essential for the reestablishment of the business or farm.

*Note: A nonprofit organization must substantiate that it cannot be relocated without a substantial loss of existing patronage (membership or clientele). The payment is based on the average of two years annual gross revenues less administrative expenses.*

## In-Lieu Payment (Fixed)

Displaced businesses, farms, and nonprofit organizations may be eligible for a fixed payment in lieu of (in place of) actual moving expenses, personal property losses, searching expense, and reestablishment expenses. The fixed payment may not be less than $1,000 or more than $20,000.

For a business to be eligible for a fixed payment, the Department must determine the following:

1. The business owns or rents personal property that must be moved due to the displacement.

2. The business cannot be relocated without a substantial loss of existing patronage.

3. The business is not part of a commercial

enterprise having more than three other businesses engaged in the same or similar activity, which are under the same ownership and are not being displaced by the department.

4. The business contributed materially to the income of the displaced business operator during the two taxable years prior to displacement.

Any business operation that is engaged solely in the rental of space to others is not eligible for a fixed payment. This includes the rental of space for residential or business purposes.

Eligibility requirements for farms and nonprofit organizations are slightly different than business requirements. If you are being displaced from a farm or you represent a nonprofit organization and are interested in a fixed payment, please consult your relocation counselor for additional information.

**The Computation of Your In-Lieu Payment:**

The fixed payment for a displaced business or farm is based upon the average annual net earnings of the operation for the two taxable years immediately preceding the taxable year in



which it was displaced. Caltrans can use a different two year period if it is determined that the last two taxable years do not accurately reflect the earnings of the operation.

**EXAMPLE:** Caltrans acquires your property and you move in 2005:

| | |
|---|---|
| 2003 Annual Net Earnings | $ 10,500 |
| 2004 Annual Net Earnings | $ 12,500 |
| TOTAL | $ 23,000 |
| **Average over two years** | **$ 11,500** |

This would be the amount of your in-lieu payment. Remember - this is in-lieu of all other moving benefits. You must provide the Department with proof of net earnings to support your claim.

Proof of net earnings can be documented by income tax returns, certified financial statements, or other reasonable evidence of net earnings acceptable to the Department.

*Note: The computation for nonprofit organizations differs in that the payment is computed on the basis of average annual gross revenues less administrative expenses for the two-year period specified above.*

**Before You Move:**

A. Complete a "Request for Determination of Entitlement" form available from your Relocation Agent, and return it promptly.

B. Include a written statement of the reasons the business cannot be relocated without a substantial loss in net earnings.

C. Provide certified copies of tax returns for the two tax years immediately preceding the tax year in which you move. (If you move anytime in the year 2005, regardless of when negotiations began or the State took title to the property, the taxable years would be 2003 and 2004).

D. You will be notified of the amount you are entitled to after the application is received and approved.

E. You cannot receive the payment until after you vacate the property, AND submit a claim for the payment within 18 months of the date of your move.



# Relocation Advisory Assistance

Any business, farm or non-profit organization, displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your needs and desires will be determined as well as your need for assistance..

You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Determine your needs and preferences.
- Explain the relocation benefits and eligibility.
- Provide information on replacement properties for your consideration.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits.
- Interest rates and terms.
- Typical down payments.
- Permits, fees and local planning ordinances.
- SBA loan requirements.
- Real property taxes.
- Consumer education literature.

If you desire, your Relocation Agent will give you



current listings of other available replacement property. Transportation will be provided to inspect available property, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local programs offering assistance to displaced persons. If you have special needs, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is

there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.

## YOUR RIGHTS AS A DISPLACEE

It is important to remember that your relocation benefits will not have an adverse effect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).



And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

# Sus Derechos y Beneficios Como Negocio, Operación Agrícola o Organización No Lucrativa Desplazada Bajo el Departmento de Transportación de California, Programa para Asistencia de Reubicación

## Introducción

Cuando se está construyendo un sistema de transporte moderno, el desplazamiento de un pequeño porcentaje de la población es a veces necesario. Sin embargo, es el procedimiento de Caltrans que las personas desplazadas no deben de sufrir innecesariamente como resultado de los programas diseñados para el benificio del público en general.

Los negocios, operaciones agrícolas, y organizaciones no-lucrativas desplazadas pueden ser elegibles para servicios de reubicación y pagos.

Este libreto le provee información acerca de los servicios y pagos de reubicación disponibles. Si usted tiene que mudarse como resultado de un proyecto de transportación de Caltrans, un Agente de Reubicación lo contactará. El Agente de Reubicación estará disponible para responderle preguntas específicas y darle información adicional.

# Acta de Procedimiento Uniforme de Asistencia para Reubicación y Adquisición de Bienes Raíces de 1970, Emendada
# "El Acta Uniforme"

El propósito de esta Acta es de proveer uniformidad e igualdad de tratamiento a personas desplazadas de sus negocios, operaciones agrícolas, u organización no-lucrativa, por programas federales o programas asistidos con fondos federales, y de establecer uniformidad e igualdad en los procedimientos para adquisión de tierras para los programas federales y programas asistidos con fondos federales.

El Código de Regulaciones Federales 49, Parte 24 implementa el "Acta Uniforme" de acuerdo a los siguientes objetivos de asistencia de relocalización:

> Para asegurar que las personas desplazadas como resultado directo de proyectos federales o proyectos asistidos con fondos federales sean tratados con justicia, consistencia e igualdad de tal manera que esas personas no sufran daños desproporcionados como resultado de los proyectos diseñados para el beneficio del público en general.

*Mientras se ha hecho todo esfuerzo para asegurar la veracidad de este folleto, debe entenderse que no tiene la fuerza ni efecto de la ley, regla o regulaciones que gobiernan el pago de los beneficios. Si alguna diferencia o error resulta, la ley tomará precedencia.*

# Servicios de Reubicación

El Departamento Transportación tiene dos programas para de ayudar a negocios, granjas y organizaciones no-lucrativas que tienen que reubicarse. Estas son:

1. El Programa de Consejos de Asistencia de Reubicación, que es para ayudarle en localizar una propiedad de reemplazo conveniente, y

2. El Programa de Pagos para Reubicación, que le reembolsará de ciertos costos envueltos en la reubicación. Estos pagos están clasificados como:

   - Gastos Relacionados a Mudanza (costos de mover propiedad personal no adquirida).
   - Gastos de Reestablecimiento (gastos relacionados a la propiedad de reemplazo.)
   - Pagos Fijos (pago fijo en vez de los gastos de mudanzas y otros gastos relacionados, y gastos de reestablecimiento).

***Nota:*** *Pagos por pérdida de clientela es considerado un costo de adquisición. La ley de California y las regulaciones federales mandan que los pagos de reubicación no pueden duplicar otros pagos, como los pagos de pérdida de clientela.*

Usted **no** puede ser elegible a recibir ningún pago de reubicación hasta que el Estado haya hecho la primera oferta escrita para comprar su propiedad. Usted tambien recibirá un aviso escrito por lo menos 90 días antes que se tenga que mover.

## Algunas Definiciones Importantes...

Sus beneficios de relocalización pueden ser entendidos mejor si usted se familiariza con los siguientes términos:

***Negocio:*** Cualquier actividad legal, con la excepción de operaciones agrícolas, conducida principalmente para la compra, venta, arrendamiento, y alquiler de bienes personales o bienes raices, o para la fabricación, elaboración y/o mercadotecnia de productos, mercancías, u otros bienes personales, o solamente para el propósito de ésta Acta, un rótulo con anuncio o anuncios, cuando el rótulo(s) tenga(n) que ser movido(s) como resultado del proyecto.

***Negocios Pequeños:*** Un negocio que tenga no más de 500 empleados trabajando en el lugar que esta siendo adquirido o desplazado por un programa o proyecto.

***Contribuye Materialmente:*** Un negocio u operación agrícola debe de haber tenido un ingreso bruto en recibos de al menos $5,000 o un promedio anual de ingreso netos de al menos $1,000, para poder calificar como una operación de buena fé.

***Operación Agrícola:*** Cualquier actividad conducida sola o primarialemente para la producción de uno o más productos de agricultura o mercancías, incluyendo venta de madera, para la venta y uso en casa, y producción ordinaria de tales productos o mercancía en cantidades suficientes para tener la capacidad de contribuir materialmente al soporte del operario.

***Organización No-lucrativa:*** Una entidad pública o privada que haya establecido su estado de organización no-lucrativa bajo las leyes aplicables.

***Persona desplazada:*** Cualquier individuo o familia que se muda de una propiedad o mueva sus bienes personales de una propiedad como resultado de la acquisición de bienes raíces, en todo o en parte, o como resultado de una notificación escrita de una agencia para desocupar la propiedad que se necesita para un proyecto de transportación. En el caso de una adquisición parcial, Caltrans determinará si la persona es desplazada directamente como resultado de la adquisición.

Los residentes que no están legalmente en los Estados Unidos no son elegibles para recibir pagos y asistencia de reubicación.

Los beneficios de reubicación varían según el tipo y tiempo de ocupación. Como una persona desplazada de un unidad residencial usted puede ser clasificado como:

- Un dueño ocupante de una propiedad residencial (incluye casas movibles)
- Un inquilino ocupante de una propiedad Residencial (incluye casas movibles y cuartos para dormir)

# GASTOS DE MUDANZA

Si usted califica como un negocio, operación agrícola, u organización no-lucrativa desplazada, usted puede recibir reembolso de los gastos de mudanza y ciertos gastos relacionados incurridos en la mudanza. Para calificar, usted tiene que ocupar la propiedad legalmente como dueño o inquilino cuando Caltrans inicie negociaciones para la adquisición de la propiedad, O al tiempo que Caltrans adquiera título, o tome posesión de la propiedad. Sin embargo, para asegurar su elegibilidad y el pronto pago de los gastos de mudanza, usted tiene que haber contactado a su Agente de Reubicación antes de que se mude.

## Usted Puede Escoger Entre:

**Gastos Razonables de Mudanza Actual** – Usted tiene que haber pagado por sus gastos de mudanza razonables y gastos relacionados cuando una compañia comercial hace la mudanza.

El reembolso será limitado a mudanza de 50 millas o menos. Los gastos relacionados, con limitaciones, ***pueden*** incluir:

- Transportación.
- Empacamiento y desempacamiento de la propiedad personal.
- Desconnección y reconneción relacionada a la operación de la propiedad personal.
- Almacenamiento temporal de la propiedad personal.

Seguros mientras la propiedad está en almacenamiento o en tránsito, o la propiedad personal es perdida y dañada, si los seguros no son razonablemente disponible.

- Gastos en encontrar un lugar de reemplazamiento.
- Servicios profesionales para planificar y supervisar la mudanza de la propiedad personal al nuevo lugar.
- Licencias, permisos y honorarios requiridos en el lugar de reemplazamiento.

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**Contrato de Mudanza Propia** – Usted puede ser pagado por mover su propia propiedad personal basado en la más baja de dos ofertas aceptables obtenidas por Caltrans. Bajo esta opción, usted deberá todavía ser elegible para el reembolsamiento de los gastos arriba relacionados que no fueron incluídos en la oferta

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**Pago Fijo** – Usted puede aceptar un pago fijo entre $1,000 y $20,000 basado en sus ganancias anuales EN VEZ de los costos y gastos relacionados de la mudanza.

## Costos Actuales Razonables de Mudanza:

Pueden pagársele los gastos actuales razonables y necesarios de su mudanza si lo transporta con una compañía comercial de muebles y mudanzas. Todos sus gastos deben de ser respaldados con recibos u otra evidencia de gastos incurridos. Además de los gastos de transportación de su propiedad personal, ciertos otros gastos también pueden ser reembolsados, tales como empaque, embalaje, desempaque y desembalaje, desconexión, desmantelación, removimiento, reensamblamiento, y reinstalación de maquinaria relocalizada, equipos y otras propiedades personales. Otros gastos necesarios tales como servicios profesionales para planificar y supervisar la mudanza, almacenaje temporal y el costo para licencias, permisos y certificados también pueden ser reembolsables. Esta no es la intención de ser una lista inclusiva de todos los gastos relacionados de mudanza. Su Agente de Reubicación puede proveerle una explicación completa de los gastos reembolsables.

## Contrato de Mudanza Propia

Si usted elige tomar la responsabilidad total o parcial para la mudanza de su negocio, operación agrícola, u organización no-lucrativa, Caltrans puede aprobar un pago sin exceder el presupuesto mas bajo de dos ofertas aceptables de una compañía comercial de muebles y mudanzas o por el Agente de Reubicación. Una mudanza a costo bajo o sin complicaciones puede ser basada en una sola oferta o estimado. En realidad, la ventaja de esta opción es que releva de la obligación al operador del negocio, operación agrícola u organización no-lucrativa desplazadas de documentar todos los gastos de mudanza. Caltrans puede hacer el pago sin documentación adicional siempre y cuando el pago sea limitado a la cantidad más baja aceptable de la oferta o del estimado. Otros gastos tales como servicios profesionales para planificar, costos de almacenaje y el costo de licencias, permisos, y certificados también pueden ser reembolsables si son necesarios. Estos gastos tienen que ser aprobados de ante mano por el Agente de Reubicación.

### Requisitos:

Antes de que se mueva, usted tiene que proveer a Caltrans con:

- El inventario certificado de toda la propiedad personal que va a mover.
- La fecha que usted intenta desalojar la propiedad.
- La dirección de la propiedad de reemplazamiento.
- La oportunidad de supervisar e inspeccionar la mudanza desde la propiedad adquirada a la propiedad de reemplazo.

## Gastos Relacionados

(1) **Gastos Para la Búsqueda de una Propiedad de Reemplazo** – Negocios, operaciones agrícolas, y organizaciones no-lucrativas tienen derecho a un reembolso por gastos actuales razonables, incurridos en la búsqueda de una propiedad de reemplazo, sin exceder $1,000. Los gastos pueden incluir transportación, alimento y alojamiento cuando esté lejos de su casa; el valor razonable del tiempo que ha gastado buscando una propiedad de reemplazo; los honorarios pagados a agentes de bienes raíces o asesores; y otros gastos determinados por Caltrans como razonables y necesarios.

(2) **Pérdidas Directas de Bienes Personales Tangibles:** Los negocios, operaciones agrícolas, y organizaciones no-lucrativas desplazadas pueden ser elegibles para un pago por pérdidas directas de bienes personales tangibles incurrido como resultado de la mudanza o descontinuación de la operación. Este pago deberá ser basado en el menor de:

(a) El valor de mercado de un producto para uso continuo en el sitio de desplazamiento menos la ganancia por su venta.

O

(b) El costo estimado de mudanza y reinstalación de los objetos reemplazados es basado en la oferta mas baja o el estimado obtenido por Caltrans para mudanza elegible y costos relacionados, incluyendo desmantelamiento y reemsamblaje, pero sin pago por almacenamiento.

POR EJEMPLO:

Usted determina que el "cortador de documentos" no puede ser movido a la nueva localidad por su condición, y usted no lo va a reemplazar en la nueva localidad.

| | |
|---|---|
| El Valor de Mercado del Cortador de Documentos basado en su uso actual en la localidad actual es de | $1,500 |
| Ganancia: Precio recibido por la venta del Cortador de Documentos | – $ 500 |
| Valor Neto | $1,000 |
| Ó | |
| El costo estimado de moverlo | $ 1,050 |
| Basado en el "menor de", la cantidad de la "Perdida de Propiedad Personal Tangible" | = **$ 1,000** |

***Nota:*** *Usted tambien tiene derecho a todos los costos rasonables incurrido en su esfuerzo por vender el cortador de documentos (por ejemplo, anuncio commercial)*

**(3) Compra de Substitución de la Propiedad Personal:** Si un objeto de propiedad personal, el cual es usado como parte del negocio, la operación agrícola, o la organización no-lucrativa, no es movido pero es prontamente reemplazado con un objeto substituto que hace una función comparable en el sitio de reemplazo, el desplazado tiene derecho al menor de:

(a) El costo de un objeto substituto, incluyendo los costos de instalación en el sitio de reemplamiento, menos cualquier ganacia por la venta o intercambio del objeto reemplazado.

O

(b) El costo estimado de mudanza y reinstalación del objeto de reemplazo, basado en la oferta mas baja aceptable o el estimado obtenido por Caltrans para una mudanza elegible y gastos relacionados, incluyendo el desmantelamiento y reensamblaje, pero sin pago por almacenamiento

EJEMPLO A:

Usted puede determinar que la máquina copiadora no puede ser movida a la nueva localidad porque es ahora obsoleta y la va a reemplazar.

| | |
|---|---|
| Costo de substuitir una Máquina Copiadora incluyendo costos de instalación en el sitio de reemplazamiento. | $ 3,000 |
| Pago por el Intercambio | – $ 2,500 |
| Valor Neto | $ 500 |
| O | |
| Costo estimado de la mudanza | $ 550 |
| Basado en el "menor de" la cantidad de "La Propiedad Personal Substituida" | **$ 500** |

EJEMPLO B:

Usted determina que las sillas no van a ser usadas en la nueva localidad, porque ya no combinan con la decoración, y usted las quiere reemplazar.

| | |
|---|---|
| Costo de la sillas substitutas | $ 1,000 |
| Ganancias: Por la venta de las Sillas | – $ 100 |
| Valor Neto | $ 900 |
| O | |
| Costo estimado de la mudanza | $ 200 |
| Basado en el "menor de", la cantidad de "La Propiedad Personal de Substitución" | **$ 200** |

***NOTA:*** *Usted tambien tiene derecho a todos los gastos razonables incurridos en su esfuerzo por vender la copiadora (Ejemplo A) o las sillas (Ejemplo B).*

(4) **Desconección y Reinstalación:** Usted va a ser reembolsado por los costos actuales y razonables de desconección, desmantelamiento, mudanza, reem-samblaje, e reinstalación de cualquier maquinaria, equipo u otra propiedad personal en relación a la mudanza a su nuevo local. Esto incluye conección a los servicios públicos disponibles en el lugar y a cualquier modificación de los objectos personales que sean necesario para adaptar a los servicios públicos en el sitio de reemplazamiento.

(5) **Cambios Físicos en el nuevo local:** Usted puede ser reembolsado por ciertos cambios físicos de la propiedad de reemplazamiento si los cambios son necesarios para permitir la reinstalación de la maquinaria o equipo necesario para la continua operación del negocio.

***Nota:*** *Los cambios no pueden incrementar el valor del edificio para propósitos generales, tampoco pueden incrementar la capacidad mecánica de los edificios más alla de los requerimientos normales.*

## Gastos De Reestablecimiento

Un pequeño negocio, operación agrícola, u organización no-lucrativa puede ser elegible para un pago, que no exceda $10,000, para los gastos actuales incurridos en la reubicación y el reestablecimiento en el sitio de reemplazo.

Gastos de reestablecimiento pueden incluir, pero no están limitados a, lo siguiente:

1. Reparación y mejoramiento de la propiedad de reemplazamiento requerido por las leyes, códigos, u ordenanzas federales, estatales o locales.

2. Modificaciones de la propiedad de reemplazamiento para hacer la estructura(s) apropiado para la operación del negocio.

3. Construcción e instalación de los letreros exteriores para anunciar el negocio.

4. El costo de instalación de servicios públicos desde la línea del derecho de vía a la estructura(s) o mejoramientos en el sitio de reemplazamiento.

5. Redecoración o reemplazamiento como pintura, tapizado de pared, paneles, o carpetas cuando sean requeridas por la condición del sitio de reemplazo o con propósitos estéticos.

6. El costo de licencias, honorarios, y permisos cuando no sean cubiertos como gastos de mudanza.

7. Estudios de mercado, estudios de factibilidad y exámen de suelo.

8. Anunciar la localidad del nuevo negocio.

9. Servicios profesionales de bienes raíces necesarios para la compra o la renta de un lugar de reemplazo.

10. El aumento del costo estimado de operación en el lugar de reemplazo durante los primeros dos años, por objectos como:

    a. Cargas de rentas,
    b. Impuestos de propiedad personal o propiedad real
    c. Prima de seguros, y
    d. Carga de servicios públicos (excluyendo honorarios de impacto).

11. Evaluación de una-vez o honorarios de impacto por alta utilización de servicios públicos.

12. Otros objetos que el Departmento considere esenciales para el reestablecimiento del negocio ú operación agrícola.

## Pago De Una Vez (O Pago Fijo)

Negocios que han sido desplazados, operaciones agrícolas, y organizaciones no-lucrativas podrían ser elegibles para un pago fijo (en vez de) por los gastos actuales de mudanza, pérdida de propiedad personal, gastos de búsqueda, y gastos de reestablecimiento. Los pagos fijos no podrán ser menos de $1,000 o más de $20,000.

Para que un negocio sea elegible por un pago fijo, Caltrans debe de determinar lo siguiente:

1. El negocio posee o renta propiedad personal que debe de ser movida debido al desplazamiento.

2. El negocio no puede ser relocalizado sin una pérdida substancial de la clientela existente.

3. El negocio no es parte de un empresa comercial que tiene mas de tres otros negocios conectados en una misma o actividad similar, las cuales están bajo el mismo dueño y no están siendo desplazadas por el Departamento.

4. El negocio contribuyó materialmente a las ganancias del operador del negocio desplazado durante los dos años anteriores al desplazamiento.

Cualquier operación del negocio que está conectado solamente en la renta del espacio de otros, no es elegible para un pago fijo. Esto incluye la renta de espacio con propósitos residenciales o de negocios.

Los requerimientos de elegibilidad para las operaciones agrícolas y organizaciones no-lucrativas son un poco diferentes a los requerimientos para negocios. Si usted está siendo desplazado de una granja o usted representa una organización no-lucrativa y está interesado en un pago fijo, por favor consulte con su consejero de reubicación para información adicional.

## La computación de Su Pago Fijo

El pago fijo para un negocio desplazado o una operación agrícola es basado en el promedio anual neto de ganancias de la operación por los dos años immediatamente precedentes al año en el cual fue desplazado. Caltrans puede usar un período de dos años diferentes, si se determina que los dos últimos años no reflejan con certeza las ganacias de la operación.

**EJEMPLO:** Caltrans adquiere su propiedad y usted se mueve en el 2001:

| | |
|---|---|
| 1999 Ganancias Netas Anuales | $10,500 |
| 2000 Ganancias Netas Anuales | $12,500 |
| TOTAL | $23,000 |
| Promedio de los dos años | $11,500 |

Este podría ser la cantidad de su pago fijo. Recuerde – esto es "en vez de" todos los otros beneficios de mudanza. Usted tendrá que proveer Caltrans pruebas de las ganacias netas para verificar su reclamo.

Prueba de las ganancias netas pueden ser documentas con sus declaraciones de impuestos, cartas financieras certificadas, u otra evidencia razonable de las ganancias netas aceptables por Caltrans.

***Nota:*** *La computación de las organizaciones no-lucrativas difiere en que los pagos son computados en la base del promedio anual grueso de las ganancias menos los gastos administrativos por el período de los dos años especificados arriba.*

## Antes de que se Mueva:

A. Complete una forma de "Aplicación para Determinación de sus Derechos" que la puede obtener de su Agente de Reubicación, y devuélvala con la mayor prontitud posible.

B. Incluya una declaración escrita de las razones por las cuales su negocio no puede ser reubicado sin una pérdida substancial en la ganancias netas.

C. Provea una copia certificada de su declaración de impuestos de los dos años immediatamente precedentes al año en el que se va a mover. (Si usted se mueve en cualquier momento en el año 2001, sin importar de cuando comenzaron las negociaciones o cuando el Estado tomó título de su propiedad, los años serán el de 1999 y el 2000.

D. Usted deberá ser notificado de la cantidad a la que tiene derecho después que la aplicación es recibida y aprobada.

E. Usted no puede recibir un pago hasta que se haya movido de la propiedad, Y que haya entregado un reclamo de pago dentro de los 18 meses de la fecha de mudanza.

# Asistencia de Asesoría de Reubicación

A cualquier negocio, operación agrícola, u organización no-lucrativa, desplazado por Caltrans debe de ofrecerle los servicios de asistencia de reubicación con el propósito de localizar una propiedad de reemplazamiento. Los servicios de reubicación deben de ser proveídos por un empleado de Caltrans. Es la meta y el deseo de nosotros de servirle y asistirle en cualquier manera posible para ayudarle a reubicarse exitosamente.

Un Agente de Reubicación de Caltrans se comunicará con usted personalmente. Los servicios de reubicación y los pagos deberán ser explicados a usted de acuerdo con su elegibilidad. Durante la entrevista inicial con usted, sus necesidades y deseos deberán determinarse así como su necesidad de asistencia.

Usted puede esperar recibir los siguientes servicios, consejos, y asistencia de su Agente de Reubicación quien le:

- Determinará sus necesidades y preferencias.
- Explicará los beneficios de reubicación y su elegibilidad.
- Proveerá información en las propiedades de reemplazo para su consideración.
- Proveerá información en aconsejarle como puede obtener ayuda para minimizar la adversidad en ajustarse a su nuevo local.
- Asistirá en completar los documentos de préstamos, aplicaciones de rentas o Formas de Reclamos de Reubicación.

Y puede proveerle información en:

- Depósitos de seguridad.
- Taza de intereses y términos.
- Pagos típicos de enganches.
- Permisos, honorarios, y ordenanzas locales.
- Requirimientos de préstamos SBA
- Impuestos de bienes raíces.
- Literatura de educación al consumidor.

Si usted desea, su Agente de Reubicación le dará una lista actual de otras propiedades de reemplazamiento que esten disponibles. Se le proveerá transportación para inspeccionar la propiedad disponible, especialmente si usted es anciano o desabilitado. Aunque usted puede usar los servicios de un vendedor de bienes raíces, Caltrans no lo puede referir a un agente específico.

Su Agente de Reubicación está familiarizado con los servicios proveído por otros en su comunidad y le proveerá información de otros programas federales, estatales y locales que ofrecen asistencia a las personas desplazadas. Si usted tiene necesidades especiales, su Agente de Reubicación hará un esfuerzo para asegurar los servicios del personal entrenado de estas agencias que tienen la experiencia para ayudarle.

Si el proyecto de carreteras requiere que un número considerable de personas sean reubicadas, Caltrans establecerá Oficinas temporales de Reubicación en o cerca del proyecto. Las oficinas de projectos de reubicación serán abiertas durante las horas convenientes y hasta horas de la noche si es necesario.

Además de estos servicios, Caltrans será requerido a coordinar las actividades de reubicación con otras agencias causantes de desplazamiento para asegurar que todas las personas desplazadas reciban beneficios de reubicación iguales y consistentes.

Recuerde – Su Agente de Reubicación está ahí para ofrecer consejos y asistencia. No tenga dudas en preguntar. Y esté seguro que usted entiende completamente todos los derechos y beneficios disponibles.

# SUS DERECHOS COMO UNA PERSONA DESPLAZADA

Es importante que recuerde que los beneficios de reubicación no tendrán un efecto adverson en su:

- Elegibilidad para Seguro Social
- Elegibilidad para Asistencia Social
- Declaración de Impuestos.

Además, el **Título VIII del Acta de Derechos Civiles de 1968**, y las actas anteriores y sus enmiendas hacen ilegal las prácticas en la venta y renta de las unidades residenciales que estén basadas en la raza, color, religion, sexo, u origen nacional.

**Los Procedimientos No-Descriminatorios** de Caltrans aseguran que todos los servicios y/o beneficios sean administrados al público en general sin diferencia de raza, color, origen nacional, o sexo en cumplimiento con el Título VI del Acta de Derechos Civiles de 1964. (42 USC 2000 (d.) et seq.).

Y usted siempre tiene el **Derecho de Apelar** una decisión de Caltrans en relación a sus beneficios de reubicación y elegibilidad.

Su Derecho de Apelación es garantizado en la "Ley Uniforme" que establece que una persona puede apelar con el responsible de la agencia si esta persona cree que la agencia ha fallado en determinar apropiadamente la elegibilidad de la persona o la cantidad de un pago autorizado por la Ley.

Si usted indica su disatisfacción, ya sea verbalmente o por escrito, Caltrans puede asistirle en entregar su caso y explicar los procedimientos a seguir. A usted le darán la oportunidad de ser oído pronta y totalmente. Usted tiene el derecho de ser representado por un consejero legal u otro representante en conección con la apelación (pero solamente a su propio costo.)

Caltrans puede considerar todas las justificaciones pertinentes y materiales entregadas por usted y cualquier otra información disponible que sea necesaria para asegurar una revisión justa. Caltrans le proveerá con una determinación de la apelación por escrito con una explicación de la base de la decisión. Si usted todavía no está satisfecho con la asistencia prestada, Caltrans le aconsejará que usted puede buscar una revisión judicial.

**Noticiero de la Ley para Americanos con Incapacidades Físicas (ADA):**

**Para personas con incapacidades físicas, este documento es disponible en formatos alternativos. Para Información llame al número (916) 654-5413 Voz, CRS: 1-800-735-2929, o escriba a Derecho de Vía, MS 37, 1120 N Street, Sacramento, CA 95814.**

# NOTAS: