



SR-710 Study

Alternatives Analysis Report

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## Appendix R

Environmental Justice Technical Memorandum





## SR-710 Study

### TECHNICAL MEMORANDUM

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## Environmental Justice

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DATE: December 2012  
PROJECT NUMBER: 428908

Environmental justice has been a long-standing concern within the SR-710 study area, and it was a major concern raised by the El Sereno Community during the review of the I-710 EIR/EIs in the 1980's and 1990s. Therefore, the potential for an alternative to result in environmental justice impacts (i.e., disproportionate adverse impact to low income and minority populations) was identified as one of the criteria for the Alternatives Analysis. 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. The 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.

This memorandum describes the potential effects to Environmental Justice populations under each Level I and Level II Alternative evaluated for the SR-710 Project Study. The Level I screening analysis evaluated 42 alternatives including 1 advanced technologies, 1 spot/local improvement, 7 bus rapid transit, 8 commuter and light rail, 11 freeway, and 13 highway alternatives along with the No Build alternative. The Level II screening analysis evaluated 12 alternatives (with 3 variations) including a TSM/TDM improvement, 3 bus rapid transit, 4 light rail transit, 4 freeway, and 2 highway alternatives along with the No Build alternative. All alternatives are discussed below in detail.

### Methodology

For the Level I and II Screening process, the methodology used to provide the analysis was the review of each Level I and Level II Alternative using Geographical Information System (GIS) analysis, specifically using the ArcGIS viewer software. This viewer allows for the collection of data from an aerial map of the study area with overlays of each Level I and Level II Alternatives. Approximately 170 United States census tracts are located with the SR-710 Study Area and the ArcGIS viewer shows the alternative alignments in relationship to the existing census tracts. The analysis for the Environmental Justice populations was compiled from data collected in the United States Census, specifically from the American Community Survey (ACS) 2006 to 2010 and was used to create the Census layer for the viewer. The analysis of the potential effects to Environmental Justice populations was determined by the location of each alternative's disturbance limit lines (DLL) of their alignment, and the physical location of the existing census tracts, beneath each alternative's DLL. A more detailed explanation of the Environmental Justice analysis criteria is provided below under the section titled *Resources in the Study Area*.

## Regional Setting

The regional setting is within north-central Los Angeles County, in the San Gabriel Valley, California. The regional setting for Environmental Justice populations is the San Gabriel Valley. According to the Los Angeles County Economic Development Corporation, Kyser Center for Economic Research, the San Gabriel Valley covers over 400 square miles and is divided into 41 cities and unincorporated areas. The population in 2010 was 1,682,953.

(Source: *2012 San Gabriel Valley Economic Forecast & Regional Overview*, <http://www.valleyconnect.com/index.php/library/economic-data>, accessed August 10, 2012)

## Local Setting

The alternatives proposed as part of the Level I and Level II Screening process include routes through several cities and communities located in north-central Los Angeles County. For Environmental Justice populations the local setting includes the cities and communities that have Environmental Justice populations that would potentially be affected by the Level I and Level II SR-710 Study alternatives. These cities and communities include: Alhambra, Arcadia, Burbank, Commerce, East Los Angeles, El Monte, El Sereno, Glendale, Los Angeles, Montebello, Monterey Hills, Monterey Park, Pasadena, Pico Rivera, Rosemead, San Gabriel, and South Pasadena. These cities and communities are typical of the dense urban/suburban character of the region.

## Resources in Study Area

As stated above, the analysis for the Environmental Justice populations was compiled from data collected from the U. S. Census, ACS 2006 to 2010. Five analysis criteria are used for evaluating Environmental Justice populations for each census tract in the Study Area. The five analysis criteria are the following U.S. Census data categories: percentage of Hispanic or Latino populations, percentage of Non-white populations, percentage of below poverty level populations, percentage of transit-dependent populations and median household income (in dollars). The Federal Transit Administration defines transit-dependent persons as those 1) without private transportation, 2) elderly (over age 65), 3) youths (under age 18), and 4) persons below poverty or median income levels defined by the U.S. Census Bureau.

A color coding system of the census tracts was developed to provide a comparison of the five analysis criteria and was incorporated into the ArcGIS viewer. If a census tract was shaded in yellow, there were no Environmental Justice criteria met in that census tract. If a census tract was shaded in orange, then that census tract met one of the five criteria for Environmental Justice populations. If a census tract was shaded in red, then that census tract met a combination of two of the five criteria for Environmental Justice populations. If a census tract was shaded in dark pink, then that census tract met a combination of three of the five criteria for Environmental Justice populations. If a census tract was shaded in magenta, then that census tract met a combination of four of the five criteria for Environmental Justice populations and if the census tract was shaded in blue, then that census tract met all five criteria for Environmental Justice populations. The shaded census tracts showing the five colored analysis criteria system for each census tract in the Study Area is provided in Figure 1.

The evaluation of the Level I Alternatives used a numbering system to determine the best likely outcome, a moderate outcome, and a worst likely outcome for each alternative. If an alternative affected zero to 5 census tracts that met at least two of the five analysis criteria, it had a best likely outcome and was rated a 5. If an alternative affected 6 to 15 census tracts, it had a moderate outcome and was rated a 3, and if an alternative affected more than 15 census tracts that met at least two of the five analysis criteria, then it had a worst likely outcome and was rated a 1. The number of affected census tracts for each Level I Alternative was calculated based on the number of census tracts that met at least two or more of the five criteria (tracts that are shaded red, dark pink, magenta, and blue). The number of affected census tracts for each Level II alternative was calculated based on the number of census tracts that met at least three or more of the five criteria (tracts that are shaded dark pink, magenta, and blue). The total number of affected census tracts are discussed under each alternative below and summarized in Table 1 for the Level I Screening alternatives and Table 2 for the Level II Screening alternatives.

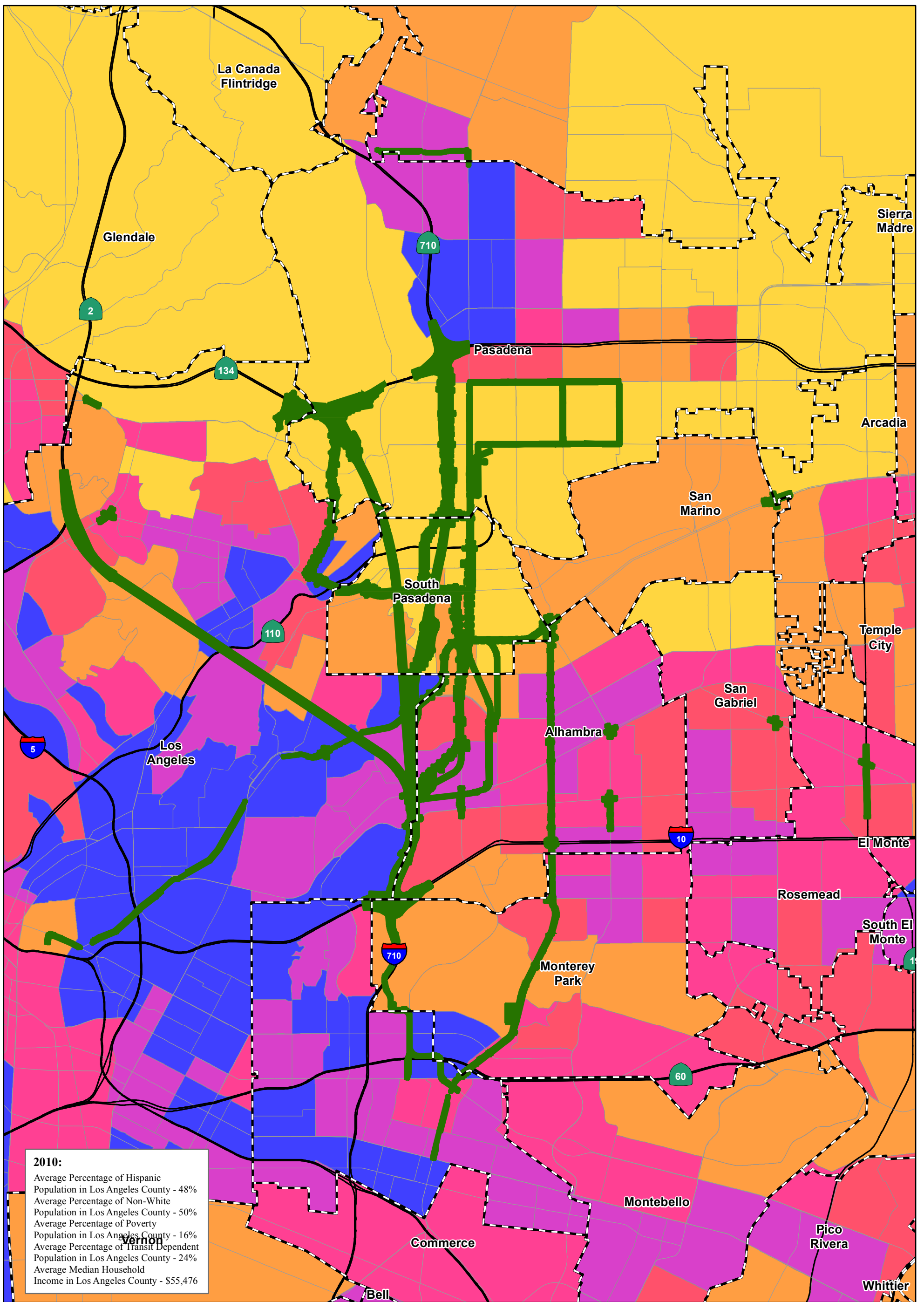
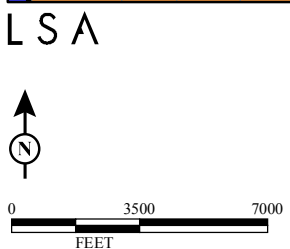


FIGURE 1



SOURCE: Census (2010); TBM (2011)

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## Potential Effects to Resources

### Level I Screening

#### No Build Alternative

The No Build Alternative would not have direct impacts to Environmental Justice populations, but would also not provide any mobility benefits to Environmental Justice populations, especially transit-dependent populations. The No Build Alternative would not extend the I-710/SR-710 freeway and would not provide improvements to local and regional traffic circulation. The No Build Alternative would not be consistent with Southern California Association of Governments' (SCAG) adopted 2012 Regional Transportation Plan (RTP) and Sustainable Communities Strategy goals and objectives, Measure R goals and objectives and Metro's Long Range Transportation Plan goals and objectives.

#### Transportation System Management/Travel Demand Management (TSM/TDM) Alternative

The TSM/TDM Alternative would provide spot improvements, local street improvements, intelligent transportation systems (ITS) improvements, expanded transit service and add active transportation facilities (pedestrian and bicycle facilities). A total of 42 local street and hot spot improvements (A1-EX through A41-EI and one unidentified alternative not labeled on the CAD files) were reviewed in the ArcGIS viewer. For the initial TSM/TDM Alternative analysis, a total of 93 Environmental Justice population census tracts would be affected by these alternatives. The total of Environmental Justice population census tracts includes each census tract that would be affected by each alternative. The same census tract or tracts could be affected by some or all of the Level I Alternatives. This alternative would have a worse likely outcome and was rated a 1 in Table 1.

#### Bus Rapid Transit Alternatives

##### BRT-1

Alternative BRT-1 would affect 15 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 2035, 2033, 1999, 1991.20, 1991.10, 2014.01, 2013.01, 2014.01, 2015.03, 2011.20, 4616, and 4619.01 met all five of the analysis criteria. The first nine census tracts in this group are located in Los Angeles, El Sereno and Alhambra. The last three census tracts in this group are located in Pasadena. Census tract 2015.01 met four of the analysis criteria and is located in Los Angeles. Census tract 4619.02 met two of the five analysis criteria and is located in Pasadena.

##### BRT-2

Alternative BRT-2 would affect 14 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 2035, 2033, 1999, 1991.20, 1991.10, 2014.01, 2013.01, 2014.01, and 2015.03 met all five of the analysis criteria. These nine census tracts in are located in Los Angeles, El Sereno and Alhambra. Census tracts 2015.01, 4800.11, and 4307.23 met four of the analysis criteria, census tract 2015.01 is located Los Angeles and census tracts 4800.11 and 4307.23 are located in San Gabriel. Census tracts 4808.04 and 4308.01 met two of the five analysis criteria and are located in Alhambra and Arcadia.

##### BRT-3

Alternative BRT-3 would affect 18 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 2035, 2033, 1999, 1991.20, 1991.10, 2014.01, 2013.01, 2014.01, and 2015.03 met all five of the analysis criteria. These nine census tracts in are located in Los Angeles, El Sereno and Alhambra. Census tracts 2015.01, 4803.03, 4803.04 and 4810.01 met four of the analysis criteria. These census tracts are located in Los Angeles and Alhambra. Census tracts 4803.02 and 4811.01 met three of the analysis criteria and are located in Alhambra and

San Gabriel, respectively. Census tracts 4808.03, 4812.01 and 4319 met two of the five analysis criteria and are located in Alhambra, Rosemead and Temple City.

#### **BRT-4**

Alternative BRT-4 would affect 15 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 2036, 2035, 2033, 2032, 2031, 5307, 46.19.01 and 4616 met all five analysis criteria. The first six census tracts in this group are located in Los Angeles, and census tracts 4619.01 and 4616 are located in Pasadena. Census tracts 5306.01, 2016.02, 4808.02 met four of the analysis criteria and are located in City Terrace/East Los Angeles, El Sereno and Alhambra, respectively and census tract 5306.02 met three of the analysis criteria and is located in City Terrace/East Los Angeles. Census tracts 4819.01, 4808.03 and 4619.02 met two of the five analysis criteria and are located in Alhambra and Pasadena.

#### **BRT-5**

Alternative BRT-5 would affect 9 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tract 5304 met all five analysis criteria and is located in East Los Angeles. Census tracts 5316.04, 5315.04, 5305, and 4808.02 met four of the analysis criteria and are located in East Los Angeles and Alhambra. Census tract 5316.03 met three of the analysis criteria and is located in East Los Angeles. Census tracts 4821.01, 4819.01 and 4808.03 met two of the five analysis criteria and are located in Monterey Park and Alhambra.

#### **BRT-6**

Alternative BRT-6 would affect 12 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tract 5304 met all five analysis criteria and is located in East Los Angeles. Census tracts 5317.01, 4817.14, 4803.03 and 4803.04 met four of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra. Census tracts 5030.01, 4827.01, 4817.13, 4809.02 and 4809.01 met three of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra. Census tracts 4821.01 and 4809.03 met two of the five analysis criteria and are located in Monterey Park and Alhambra.

#### **BRT-7**

This is an at-grade feeder lines alternative. Alternative BRT-7 would affect 18 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 1253.10, 3012.06, 3020.02, 3018.02, 3023.02, 3022.02, 3022.01, 3021.03 and 1814 met three of the analysis criteria and are located in Burbank, Glendale and Pasadena. Census tracts 1253.20, 1255.01, 3107.02, 3107.03, 3015.02, 3019, 3021.04, 4619.02 and 4622.02 met two of the five analysis criteria and are located in Burbank, Glendale and Pasadena.

### **Light Rail Transit Alternatives**

#### **LRT-1**

Alternative LRT-1 would affect 17 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 2060.10, 1990 and 1864.01 met all five analysis criteria and are located in Los Angeles and Glendale. Census tracts 2071.03 and 1871.02 met four of the analysis criteria and are located in Los Angeles. Census tracts 2071.02, 1853.02, 3025.05, 3024.01, 3023.02, 3017.02 and 3105.01 met three of the analysis criteria and are located in Los

Angeles, Glendale and Burbank. Census tracts 3106.01, 3107.02, 3107.03, 3016.01, and 4800.10 met two of the five analysis criteria and are located in Burbank, Glendale and Los Angeles.

## **LRT-2**

Alternative LRT-2 would affect 6 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 3105.01 and 3017.02 met four of the analysis criteria and are located in Burbank and Glendale. Census tracts 3106.01, 3107.02, 3107.03 and 3016.01 met two of the five analysis criteria and are located in Burbank and Glendale.

## **LRT-3**

Alternative LRT-3 (four options combined) would affect 14 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 2060.10, 1997, 1999, 1991.20, 1991.10, 2013.01, 2014.01, 2033, 2012, 2015.03 and 2011.20 met all five analysis criteria and are located in Los Angeles, El Sereno and Monterey Hills. Census tract 2015.01 met four analysis criteria and is located in El Sereno. Census tract 4800.11 met three of the analysis criteria and is located in San Gabriel. Census tract 4808.03 met two of the five analysis criteria and is located in Alhambra.

## **LRT-4**

Alternative LRT-4 (all options combined) would affect 8 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 5304 and 2017 met all five of the analysis criteria and are located in East Los Angeles and Los Angeles. Census tract 5316.03 met four of the analysis criteria and is located in East Los Angeles. Census tracts 5305, 2016.02 and 4808.02 met three of the analysis criteria and are located in East Los Angeles, Los Angeles and Alhambra. Census tracts 4819.01 and 4808.03 met two of the five analysis criteria and are located in Alhambra.

## **LRT-5**

Alternative LRT-5 would affect 21 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 2060.10, 1997, 1999, 2033, 2031, 2017, 4328.02, and 4328.01 met all five analysis criteria and are located in Los Angeles, Alhambra, San Gabriel, and Rosemead. Census tracts 2014.02, 2016.02, 4808.02, 4810.01, 4810.02, 4811.02 and 4327 met four of the analysis criteria and are located in Los Angeles, East Los Angeles, Alhambra, San Gabriel, and Rosemead. Census tracts 4809.02, 4816.04 and 4811.01 met three of the analysis criteria and are located in Alhambra and San Gabriel. Census tracts 4815, 4811.03 and 4812.01 met two of the five analysis criteria and are located in San Gabriel and Rosemead.

## **Commuter Rail Alternatives**

### **CR-1**

Alternative CR-1 would affect 21 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 2060.10, 1997, 1999, 2033, 2031, 2017, 4328.02, and 4328.01 met all five analysis criteria and are located in Los Angeles, Alhambra, San Gabriel, and Rosemead. Census tracts 2014.02, 2016.02, 4808.02, 4810.01, 4810.02, 4811.02 and 4327 met four of the analysis criteria and are located in Los Angeles, East Los Angeles, Alhambra, San Gabriel, and Rosemead. Census tracts 4809.02, 4816.04 and 4811.01 met three of the analysis criteria and are

located in Alhambra and San Gabriel. Census tracts 4815, 4811.03 and 4812.01 met two of the five analysis criteria and are located in San Gabriel and Rosemead.

## **CR-2**

Alternative CR-2 would affect 21 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a worse likely outcome and was rated a 1 in Table 1. Census tracts 2060.10, 2035, 2033, 2031, 5307, 2017, 4328.01, 4332 and 4333.04 met all five of the analysis criteria and are located in Los Angeles, East Los Angeles and Rosemead. Census tracts 4816.05, 4823.01, 4823.03, 4327 and 4333.02 met four of the analysis criteria and are located in Alhambra, San Gabriel and Rosemead. Census tracts 4824.01, 4336.01 and 4331.01 met three of the analysis criteria and are located in Rosemead. Census tracts 4819.01, 4809.03, 4815 and 4070.02 met two of the five analysis criteria and are located in Alhambra and El Monte.

## **CR-3**

Alternative CR-3 would affect 13 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 2060.10, 2035, 2060.32 and 2051.20 met all five analysis criteria and are located in Los Angeles. Census tracts 5320.01, 5320.02, 5321.01, 5006 and 5004.02 met four of the analysis criteria and are located in Montebello and Pico Rivera. Census tracts 2060.50, 5323.02 and 5323.03 met three of the analysis criteria and are located in Los Angeles and Commerce. Census tract 5004.03 met two of the five analysis criteria and is located in Pico Rivera.

## **Freeway Alternatives**

### **Freeway-1**

Alternative Freeway-1 would affect one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4819.01 met two of the five analysis criteria and is located in Alhambra.

### **Freeway-2**

Alternative Freeway-2 affects one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4819.01 met two of the five analysis criteria and is located in Alhambra.

### **Freeway-3.**

Alternative Freeway-3 affects 2 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 1997 met all five of the analysis criteria and is located in Los Angeles. Census tract 4619.02 met two of the five analysis criteria and is located in Pasadena.

### **Freeway-4**

Alternative Freeway-4 affects 2 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 5307 met all five of the analysis criteria and is located in Los Angeles. Census tract 4619.02 met two of the five analysis criteria and is located in Pasadena.



### **Freeway-5**

Alternative Freeway-5 affects one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4819.01 met two of the five analysis criteria and is located in Alhambra.

### **Freeway-6**

Alternative Freeway-6 affects 2 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 4819.01 and 4619.02 met two of the five analysis criteria and are located in Alhambra and Pasadena.

### **Freeway-7**

Alternative Freeway-7 affects 9 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 5307, 2017, 4619.01 and 4616 met all five analysis criteria and are located in Los Angeles, East Los Angeles and Pasadena. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in Los Angeles and Alhambra. Census tract 5306.02 met three of the analysis criteria and is located in East Los Angeles. Census tracts 4819.01 and 4619.02 met two of the five analysis criteria and are located in Alhambra and Pasadena.

### **Freeway-8**

Alternative Freeway-8 affects one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4819.01 met two of the five analysis criteria and is located in Alhambra.

### **Freeway-9**

Alternative Freeway-9 affects one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4819.01 met two of the five analysis criteria and is located in Alhambra.

### **Freeway-10**

Alternative Freeway-10 affects one Environmental Justice population census tract that meets two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 2047 met four of the analysis criteria and is located in Los Angeles.

### **Freeway-11**

Alternative Freeway-11 affects 9 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 5307, 2017, 4619.01 and 4616 met all five analysis criteria and are located in Los Angeles, East Los Angeles and Pasadena. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in Los Angeles and Alhambra. Census tract 5306.02 met three of the analysis criteria and is located in East Los Angeles. Census tracts 4819.01 and 4619.02 met two of the five analysis criteria and are located in Alhambra and Pasadena.

## Highway/Arterial Alternatives

### Highway-1

Alternative Highway-1 affects 9 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tract 1831.03 met all five of the analysis criteria and is located in Los Angeles. Census tracts 2016.02, 4808.02, and 1832.20 met four of the analysis criteria and are located in El Sereno, Alhambra and Los Angeles. Census tracts 4819.01, 4808.03, 1831.01, 1832.21 and 1832.22 met two of the five analysis criteria and are located in Alhambra and Los Angeles.

### Highway-2

Alternative Highway-2 affects 6 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tract 1831.03 met all five of the analysis criteria and is located in Los Angeles. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in El Sereno and Alhambra. Census tracts 4819.01, 4808.03 and 1831.01 met two of the five analysis criteria and are located in Alhambra and Los Angeles.

### Highway-3

Alternative Highway-3 will not affect any Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1.

### Highway-4

Alternative Highway-4 affects 3 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4808.02 met four of the analysis criteria and is located in Alhambra. Census tracts 4819.01 and 4808.03 met two of the five analysis criteria and are located in Alhambra.

### Highway-5

Alternative Highway-5 affects 4 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in El Sereno and Alhambra. Census tracts 4819.01 and 4808.03 met two of the five analysis criteria and are located in Alhambra.

### Highway-6

Alternative Highway-6 affects 4 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 2016.02 and 2015.01 met four of the analysis criteria and are located in El Sereno. Census tracts 4819.01 and 4808.03 met two of the five analysis criteria and are located in Alhambra.

### Highway-7

Alternative Highway-7 affects 8 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 4619.01, 4620.01, 4620.02 and 4616 met all five analysis criteria and are located in Pasadena. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in El Sereno and Alhambra. Census tracts 4808.03 and 4619.02 met two of the five analysis criteria and are located in Alhambra and Pasadena.

## Highway-8

Alternative Highway-8 affects 4 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in El Sereno and Alhambra. Census tracts 4819.01 and 4808.03 met two of the five analysis criteria and are located in Alhambra.

## Highway-9

Alternative Highway-9 affects 11 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tract 4615.02 met all five of the analysis criteria and is located in Pasadena. Census tracts 4808.02, 4810.01, 4803.04, 4621 and 4609 met four of the analysis criteria and are located in Alhambra and Pasadena. Census tracts 4809.02 and 4622.01 met three of the analysis criteria and are located in Alhambra and Pasadena. Census tracts 4819.01, 4622.02 and 4615.01 met two of the five analysis criteria and are located in Alhambra and Pasadena.

## Highway-10

Alternative Highway-10 affects 6 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a moderate outcome and was rated a 3 in Table 1. Census tracts 4816.05, 4810.01 and 4803.04 met four of the analysis criteria and are located in Alhambra. Census tracts 4816.06, 4816.03 and 4803.02 met three of the analysis criteria and are located in Alhambra.

## Highway-11

Alternative Highway-11 affects 4 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tract 4823.01 met four of the analysis criteria and is located in San Gabriel. Census tract 4811.02 met three of the analysis criteria and is located in San Gabriel. Census tracts 4814.02 and 4822.02 met two of the five analysis criteria and are located in San Gabriel and Monterey Park.

## Highway-12

Alternative Highway-12 affects 5 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 4322.02 and 4800.11 met three of the analysis criteria and are located in San Gabriel. Census tracts 4329.01, 4812.01 and 4800.12 met two of the five analysis criteria and are located in Rosemead and San Gabriel.

## Highway-13

Alternative Highway-13 affects 5 Environmental Justice population census tracts that meet two or more of the analysis criteria. This alternative would have a best likely outcome and was rated a 5 in Table 1. Census tracts 4332, 4324.02 and 4324.01 met all five analysis criteria and are located in El Monte. Census tract 4327 met four of the analysis criteria and is located in El Monte. Census tract 4308.01 met two of the five analysis criteria and is located in Arcadia.

## Summary of Potential Effects to Resources

### Table 1: Summary of the Level I Potential Effects to Resources by Alternative

The following table provides the summary of the Level I analysis of potential effects to Environmental Justice population census tracts within the SR-710 Project Study Area.

TABLE 1  
 Level I Screening of SR-710 Project Alternatives  
 Summary of Potential Effects to Environmental Justice Population Census  
 Tracts by Alternative

Resources	1) No Build	2) TSM/TDM	3) BRT-1	4) BRT-2	5) BRT-3	6) BRT-4	7) BRT-5	8) BRT-6	9) BRT-7	10) LRT-1	11) LRT-2	12) LRT-3	13) LRT-4	14) LRT-5	15) CR-1	16) CR-2	17) CR-3	18) F-1	19) F-2	20) F-3	21) F-4	22) F-5	23) F-6	24) F-7	25) F-8	26) F-9	27) F-10	28) F-11	29) H-1	30) H-2	31) H-3	32) H-4	33) H-5	34) H-6	35) H-7	36) H-8	37) H-9	38) H-10	39) H-11	40) H-12	41) H-13
Potential Effects on Environmental Justice Populations <sup>1</sup> : Best likely outcome = 5, Moderate outcome = 3, Worst likely outcome = 1	5	1	3	3	1	3	3	3	1	1	3	3	3	1	1	1	3	5	5	5	5	5	5	3	5	5	5	3	3	3	5	5	5	5	3	5	3	3	5	5	5
Number of Environmental Justice Population Census Tracts affected by Alternative	0	93	15	14	18	15	9	12	18	17	6	14	8	21	21	21	13	1	1	2	2	1	2	9	1	1	1	9	9	6	0	3	4	4	8	4	11	6	4	5	5

Source: U. S. Census, ACS 2006-2010 -

Note 1: -

Best likely outcome represents minor effects to Environmental Justice Populations - (0 to 5 Census Tracts meeting 2 or more of the five analysis criteria) -

Moderate outcome represents moderate effects to Environmental Justice - Populations (6 to 15 Census Tracts meeting 2 or more of the five analysis criteria) -

Worst likely outcome represents major effects to Environmental Justice Populations - (more than 15 Census tracts meeting 2 or more of the five analysis criteria) -

## Summary of Potential Effects to Resources

### Level II Screening

#### No Build Alternative

Refer to the information on the No Build Alternative provided above under the Level I Screening analysis.

#### TSM/TDM Alternative

The refined Level II TSM/TSM Alternative proposes expanded transit service, which includes bus service improvements, active transportation, which includes pedestrian and bicycle facilities, ITS improvements, which includes traffic signal synchronization, travel demand analysis, intersection hot spot improvements and local street improvements on the roadways within the study area. These improvements can potentially have direct and indirect effects to Environmental Justice populations that live in the SR-710 Study Area.

**Elements of the TSM/TDM Alternative with No Effects to Environmental Justice Populations.** The following elements of the TSM/TDM alternative would provide benefits for Environmental Justice populations: bus service improvements and ITS improvements. Transit-dependent populations within the SR-710 Project Study Area would benefit from the improved bus service provided by elements BUS-1 and BUS-2. As discussed in the TSM/TDM Technical Memorandum, (CH2M Hill Team, July 2012), peak period service will increase for bus routes in the Study Area from zero to more than 75 percent and Bus Route 766 will provide new rapid bus service along Rosemead Boulevard to Colorado Boulevard. These improvements will provide improved service and increase travel times for the transit-dependent populations that rely on the bus service for commuting to employment and commercial areas. The ITS element will provide signal optimization and transit signal priority to bus service routes that operate along Del Mar Avenue (Route 489), Rosemead Boulevard (Routes 266, 489 and 766) and Peck Road (Route 270). These improvements will also increase travel times and benefit transit-dependent populations.

Bicycle facility improvements will provide Class I (off-street facility) or Class II (striped bicycle lanes) facility projects within the Study Area. These improvements would benefit any persons living in the study area that rely on bicycle transportation for commuting to employment and commercial areas in the area.

The travel demand management (TDM) element would continue to support rideshare matching services, the guarantee ride home program and other TDM efforts. There would be no effects related to the TDM element to Environmental Justice populations.

**Elements of the TSM/TDM Alternative with Potential Effects to Environmental Justice Populations.** The TSM/TDM Alternative proposes to provide at-grade intersection and local street improvements in the Study Area. There are 28 improvements proposed in this TSM/TDM element. Of the 27 proposed improvements, 20 are improvements to intersections and 7 are local street improvements. The ArcGIS viewer was used to review the intersection and local street improvements and their potential effects to Environmental Justice populations. The TSM/TDM Alternative would affect a total of 28 Environmental Justice population census tracts.

Of the 20 at-grade intersection improvements, 8 intersection improvements will affect Environmental Justice populations. Intersection I-16 will affect 4 Environmental Justice population census tracts. Intersections I-3, I-4, I-5 and I-17 will affect 3 Environmental Justice population census tracts. Intersections I-2, I-12 and I-20 will affect one Environmental Justice population census tract. Intersections I-1, I-6, I-7, I-8, I-9, I-10, I-11, I-13A, I-13B, I-13C, I-18, and I-19 will not affect any Environmental Justice population census tracts.

Of the 7 at-grade local street improvements, 5 local street improvements will affect Environmental Justice Populations. A total of 9 Environmental Justice population census tracts will be affected by the Local street improvements. Local street improvement L-4 will affect 4 Environmental Justice population census tracts. Local street improvement L-3 will affect 2 Environmental Justice population census tracts. Local street improvements L-2b, L-2c and L-5 will each affect one Environmental Justice population census tracts. Local street improvements L-1 and L-2a will not affect any Environmental Justice population census tracts. As stated above, the same census tract or tracts could be affected by some or all of the Level II alternatives.

## Bus Rapid Transit Alternatives

The two Bus Rapid Transit (BRT) Alternatives, BRT-1 and BRT-6 and a variation of the BRT-6 alternative, labeled BRT-6a, would add two rapid transit bus routes in the study area. These BRT Alternatives would provide at-grade transit routes and would provide transit-dependent populations with decreased travel times for those commuters that would utilize these bus routes for employment and/or commercial uses. The effects listed for each BRT alternative could include benefits for the transit-dependent populations included in the Environmental Justice analysis provided below.

### BRT-1

Alternative BRT-1 will affect 12 Environmental Justice population census tracts along its alignment. Census tracts 2035, 2033, 1999, 1991.20, 1991.10, 2014.01, 2013.01 2012, 2015.03 and 2011.20 met all five analysis criteria and are located in Los Angeles, El Sereno, Alhambra and Pasadena. Census tract 2015.01 met four of the analysis criteria and is located in Los Angeles and census tract 2011.10 met three of the analysis criteria and is located in Monterey Hills.

### BRT-6

Alternative BRT-6 will affect 13 Environmental Justice population census tracts along its alignment. Census tract 5304 met all five analysis criteria and is located in East Los Angeles. Census tracts 5317.01, 4817.14, 4816.05, 4810.01, 4803.03 and 4804.04 met four of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra. Census tracts 5303.01, 4827.01, 4817.13, 4809.02, 4816.06, and 4809.01 met three of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra.

### BRT-6a

Alternative BRT-6a will affect 13 Environmental Justice population census tracts along its alignment. Census tract 5304 met all five analysis criteria and is located in East Los Angeles. Census tracts 5317.01, 4817.14, 4816.05, 4810.01, 4803.04 and 4803.03 met four of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra. Census tracts 5303.01, 4827.01, 4817.13, 4816.06, 4809.02, and 4809.01 met three of the analysis criteria and are located in East Los Angeles, Monterey Park and Alhambra.

## Light Rail Transit Alternatives

The two Light Rail Transit (LRT) Alternatives, LRT-4 with three variations labeled LRT-4a, LRT-4b and LRT-4d, and LRT-6 would add two light rail alternatives in the study area. These LRT Alternatives would be constructed in a variety of configurations along their alignments. Variation LRT-4a is configured to be constructed with an aerial segment, an excavated segment, an at-grade segment, and a bored tunnel segment. Variation LRT-4b is configured to be constructed with an aerial segment, an excavated segment, an at-grade segment, and a bored tunnel segment with a second at-grade component and variation LRT-4d is configured to be constructed with a cut and cover segment, an aerial segment, an at-grade segment, and a second cut and cover segment with two at-grade components. Alternative LRT-6 is configured to be constructed with an aerial segment, an at-grade segment, a second aerial segment, a second at-grade segment and a third aerial segment. These alternatives would also provide a benefit to transit-dependent populations that would utilize the LRT Alternatives for employment or commercial uses. The effects listed for each LRT alternative could also include benefits for the transit-dependent populations included in the Environmental Justice analysis provided below.

### LRT-4a

Alternative LRT-4a will affect 5 Environmental Justice population census tracts along its alignment. Census tracts 5304 and 2017 met all five analysis criteria and are located in East Los Angeles and Los Angeles. Census tracts 5305, 2016.02 and 4808.02 met four of the analysis criteria and are located in East Los Angeles and El Sereno.

#### **LRT-4b**

Alternative LRT-4b will affect 5 Environmental Justice population census tracts along its alignment. Census tracts 5304 and 2017 met all five analysis criteria and are located in East Los Angeles and Los Angeles. Census tracts 5305, 2016.02 and 4808.02 met four of the analysis criteria and are located in East Los Angeles and El Sereno.

#### **LRT-4d**

Alternative LRT-4d will affect 6 Environmental Justice population census tracts along its alignment. Census tracts 5304 and 2017 met all five analysis criteria and are located in East Los Angeles and Los Angeles. Census tracts 5305, 2016.02 and 4808.02 met four of the analysis criteria and are located in East Los Angeles and El Sereno. Census tract 5303.01 met three of the analysis criteria and is located in East Los Angeles.

#### **LRT-6**

Alternative LRT-6 will affect 10 Environmental Justice population census tracts along its alignment. Census tract 5304 met all five analysis criteria and is located in East Los Angeles. Census tracts 4817.14, 4816.05, 4810.01, 4803.03 and 4803.04 met four of the analysis criteria and are located in Monterey Park, and Alhambra. Census tracts 4827.01, 4817.13, 4816.06 and 4809.02 met three of the analysis criteria and are located in Monterey Park and Alhambra.

### **Freeway Alternatives**

The four Freeway Alternatives, F-2, F-5, F-6 and F-7 would construct a new freeway from the Interstate 710/Interstate 10 interchange, to three different northern termini locations. Alternative F-2 would terminate/connect with State Route 2. Alternative F-5 would terminate/connect with State Route 134 and Alternatives F-6 and F-7 both terminate/connect with the State Route 134/Interstate 210 interchange. The construction of the freeway alternative would affect Environmental Justice populations and are discussed below.

#### **F-2**

Alternative F-2 will affect 5 Environmental Justice population census tracts along its alignment. Census tracts 5307 and 2017 met all five analysis criteria and are located in Los Angeles. Census tracts 2016.02 and 4804.02 met four of the analysis criteria and are located in Los Angeles and Alhambra. Census tract 5306.02 met three of the analysis criteria and is located in Los Angeles.

#### **F-5**

Alternative F-5 will affect 5 Environmental Justice population census tracts along its alignment. Census tracts 5307 and 2017 met all five analysis criteria and are located in Los Angeles. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in Los Angeles and Alhambra. Census tract 5306.02 met three of the analysis criteria and is located in Los Angeles.

#### **F-6**

Alternative F-6 will affect 7 Environmental Justice population census tracts along its alignment. Census tracts 5307, 2017 and 2011.20 met all five analysis criteria and are located in Los Angeles and Monterey Park. Census

tracts 2016.02, 4808.02 and 2015.01 met four of the analysis criteria and are located in Los Angeles, Alhambra and El Sereno. Census tract 5306.02 met three of the analysis criteria and is located in Los Angeles.

## F-7

Alternative F-7 will affect 7 Environmental Justice population census tracts along its alignment. Census tracts 5307, 2017, 4619.01 and 4616 met all five analysis criteria and are located in Los Angeles and Pasadena. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in Los Angeles and Alhambra. Census tract 5306.02 met three of the analysis criteria and is located in Los Angeles.

## Highway or Arterial Improvement Alternatives

The two Highway/Arterial Alternatives, H-2 and H-6 would provide at-grade improvements to arterial streets and add a connector from the Interstate 710 stub to two different termini in the northern part of the study area. Alternative H-2 would terminate/connect with State Route 134 and Alternative H-6 would terminate/connect with the State Route 134/Interstate 210 interchange. The arterial improvements and construction of the connectors for the highway alternatives would affect Environmental Justice populations and are discussed below.

## H-2

Alternative H-2 will affect 4 Environmental Justice population census tracts along its alignment. Census tracts 2017 and 1813.03 met all five of the analysis criteria and are located in Los Angeles and South Pasadena. Census tracts 2016.02 and 4808.02 met four of the analysis criteria and are located in Los Angeles and Alhambra.

## H-6

Alternative H-6 will affect 4 Environmental Justice population census tracts along its alignment. Census tract 2011.20 met all five of the analysis criteria and is located in El Sereno. Census tracts 2016.02, 4808.02 and 2015.01 met four of the analysis criteria and are located in Los Angeles and Alhambra.

## Summary of Potential Effects to Resources

### Table 2: Summary of the Level II Potential Effects to Resources by Alternative

The following table provides the summary of the Level II analysis of potential effects to Environmental Justice population census tracts within the SR-710 Project Study Area.

As shown in Table 2, the No Build Alternative would not affect any Environmental Justice population census tracts, the TSM/TDM Alternative would affect a total of 28 Environmental Justice population census tracts. Alternatives BRT-1, BRT-6 and variation BRT-6a would affect 12, 13 and 13 Environmental Justice population census tracts, respectively. Alternative variations LRT-4a, LRT-4b, LRT-4d would affect 5, 5, and 6 Environmental Justice population census tracts, respectively and Alternative LRT-6 would affect 10 Environmental Justice population census tracts. Alternatives F-2, F-5, F-6, F-7 would affect 5, 5, 7, and 7 Environmental Justice population census tracts, respectively. Alternatives H-2 and H-6 would each affect 4 Environmental Justice population census tracts.



TABLE 2  
 Level II Screening of SR-710 Project  
 Alternatives  
*Summary of Potential Effects to  
 Environmental Justice Population Census  
 Tracts by Alternative*

Resources	No Build	TSM/ TDM	BRT-1	BRT-6	BRT-6a	LRT-4a	LRT-4b	LRT-4d	LRT-6	F-2	F-5	F-6	F-7	H-2	H-6
Total of Environmental Justice Population Census Tracts affected by Alternative	0	28	12	13	13	5	5	6	10	5	5	7	7	4	4

Source: U. S. Census, ACS 2006-2010