

**APPENDIX B**  
**REGULATORY FRAMEWORK**

## **1.1 Transportation Regulatory Framework**

The “Regulatory Framework” in the 2010 Regional Connector Final EIS/EIR has remained unchanged and is hereby incorporated by reference. The 2010 Final EIS/EIR addressed the federal, state, regional, and local regulations, laws, policies, ordinances, and guidelines listed below.

### **Federal and State**

- National Environmental Protection Agency (NEPA)
- California Environmental Quality Act (CEQA)

### **Regional and Local**

- Los Angeles County Department of Transportation (LADOT)
- City of Los Angeles General Plan Circulation Element

The determination of whether a project may have a significant effect on the environment calls for careful judgement on the part of the public agency involved, based to the extent possible on scientific and factual data. There are few quantitative standards of significance related to transportation effects. The measurement and prediction of level of service (LOS) at potentially affected intersections is a standard that is used to evaluate the significance of potential traffic impacts. Predicted changes in level of service provide indications of how well road-based movements may function under the different alternatives, which may have implications for vehicular traffic, and certain types of transit and non-motorized transportation.

To represent the affected environment from a traffic operations perspective, only locations affected by the changes to the project description (extension of tunneling activities further south on Flower Street and the increase of muck truck activity to the Little Tokyo area) were analyzed. Updated 2014 traffic counts at key locations on Flower Street and within Little Tokyo were obtained from the LADOT. Additional count data was referenced from nearby projects and applicable growth rates were utilized where necessary.

#### **1.1.1 Transit**

Existing transit services within the project area that parallel the Regional Connector alignment were identified and tabulated to show destinations, existing headways, service characteristics, and operating time periods. No NEPA, or local thresholds are available for determining the significance of impacts to transit service. Changes to the transit network are described for each alternative in Section 3.3. This section analyzes transit impacts and benefits for each project refinement alternative by examining changes in transit performance. Transit performance includes travel speeds and times, transit service reliability, transit ridership, and passenger comfort and convenience. Evaluation criteria included:

- Transit travel times,
- Speed and reliability,
- Transit ridership, and
- Passenger comfort and convenience.

### 1.1.2 Traffic Circulation

Significant impacts generated by the project refinement alternatives were identified by comparing the LOS results to the Project. The reason for this is to determine the potential increase or decrease in significant impacts of the proposed alternatives compared to those already identified as part of the Project.

For purposes of this analysis, a focused study area was defined to be the locations where the changes to the project description could potentially affect LOS. Per the LADOT *Traffic Study Policies and Procedures* (June 2013), volume-to-capacity (v/c ratios) are used to analyze traffic operation conditions at study roadway segments.

Updated count data (counts taken in 2013 and 2014) for roadway segments within the Flower Street and Little Tokyo study areas were provided by LADOT in the form of daily traffic volumes (no intersection turning movements were provided). The roadway segment analysis was performed using these counts compared to the roadway capacity derived from the City’s General Plan designations. Due to the nature of construction the proposed project (reduced lane capacity on Flower Street and increased truck traffic in Little Tokyo), only roadway segment impacts were considered. In the event that roadway segment impacts are identified, the intersections along the impacted segments would also be considered impacted.

Traffic circulation impacts at study roadway segments were evaluated based on the project-related increase in v/c ratio beyond the Project. Table 1-1 presents the applicable thresholds for this evaluation. For example, an alternative would have a significant impact at a roadway segment with existing LOS C if it increases the v/c ratio by 0.020. If a roadway segment continues to operate at LOS A or B during construction or after implementation of an alternative, the alternative is considered to have no substantial adverse impact on that facility.

More information regarding the methodology used for traffic circulation impact evaluation is available in Appendix L, Transportation Technical Memorandum of the Final EIS/EIR.

**Table 1-1: Roadway Significance Thresholds**

Final LOS with Project	Roadway Thresholds	Intersection Thresholds
	Change in v/c from LPA	Change in Delay (in seconds) from LPA
LOS A	-----	-----
LOS B	-----	-----
LOS C	equal to or greater than 0.040	6.0
LOS D	equal to or greater than 0.020	4.0
LOS E	equal to or greater than 0.010	2.5

LOS F	equal to or greater than 0.010	2.5
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Source: Los Angeles Department of Transportation, June 2013

### 1.1.3 Parking

An on-street parking evaluation was conducted to assess the number of spaces that may be removed due to each of the project refinement alternatives, compared to the Project. The analysis included a field inventory of the number of available on-street parking and loading spaces and identification of peak period parking restrictions, if applicable. No NEPA or local thresholds are available to guide the determination of the significance of impacts to parking. Reductions in parking are described for each alternative in Section 3.3. Evaluation of potential parking impacts included consideration of:

- The availability of parking within one-half mile walking distance; and
- The availability of loading zones in relation to the location of commercial enterprises.

Refer to Section 4.2, Displacement and Relocation in the Final EIS/EIR, for analysis of off-street parking impacts.

### 1.1.4 Other Modes

Bicycle and pedestrian circulation was evaluated as part of this transportation analysis. No NEPA or local thresholds are available to guide the determination of significance of impacts to bicycle and pedestrian circulations. Changes to the bicycle and pedestrian network are described for each alternative in Section 3.3. Evaluation of potential impacts to bicycle and pedestrian circulation included consideration of:

- Detours that might lengthen bicycle commutes or pedestrian routes (which would increase travel time); and
- Safety of alternate routes.

## 1.2 Visual Quality Regulatory Framework

Guidance for assessing potential visual impacts of the tunneling alternatives is identified in the National Historic Preservation Act (NHPA), and was used to evaluate potential visual and aesthetic effects under NEPA and findings for the Project are from the Final EIS/EIR. Multiple federal agencies have developed analytical frameworks for visual resource management, including:

- United States Department of Agriculture (USDA), Forest Service (USFS 1974, 1995)
- United States Department of Interior (USDOI), Bureau of Land Management (BLM 1978)
- United States Department of Transportation (USDOT), Federal Highway Administration (FHWA 1981)

The methodology and assumptions used to assess visual and aesthetic impacts of these alternatives build on the guidance developed by these federal agencies, as described in the Final EIS/EIR.

Analyzing potential visual impacts includes evaluating the following effects of implementing an infrastructure project:

- Conflicts with or compliments the existing visual character
- Changes in visual quality
- Intrudes on or blocks sensitive views (emphasizes views protected by local jurisdictions)
- Creation of shadows
- Creation of new light or glare sources

### **1.2.1 Thresholds of Significance**

This analysis examines whether the alternatives under evaluation have the potential to cause significant visual impacts. Though NEPA offers no definition for “significance,” the CEQA Guidelines define a significant impact as “... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including ... objects of ... aesthetic significance.” The methodology applied to this assessment expands upon the CEQA definition and draws from methodology recommendations included in the Los Angeles CEQA Thresholds Guide, as followed in the Final EIS/EIR.

As outlined in Appendix G of the CEQA Guidelines, determination of a significant impact to visual and aesthetic resources is based on the following thresholds:

- Would the project have a substantial, adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within [view from] a state scenic highway?
- Would the project substantially degrade the existing visual character or quality of a site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

The City of Los Angeles CEQA Thresholds Guide includes the following criteria for identifying and evaluating potentially significant visual resources impacts from proposed actions occurring within the City:

- Would project-related structures result in the shading of shadow-sensitive uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Standard Time (between early April and late October)?

Additional background information regarding visual resource evaluation methodology is available in Visual and Aesthetic Impacts Technical Memorandum (Appendix P) of the Final EIS/EIR.

## **1.3 Air Quality Regulatory Framework**

The Regulatory Framework in the 2010 Regional Connector Final EIS/EIR has remained unchanged and is hereby incorporated by reference. The Final EIS/EIR addressed the federal and state regulations listed below:

- Clean Air Act
  - Clean Air Act 40 CFR 93, Subpart A Transportation Conformity Regulations
- California Clean Air Act

The Final EIS/EIR addressed the local plans and regulations listed below:

- Southern California Association of Governments (SCAG) Regional Transportation Plan;
- SCAG Regional Transportation Improvement Program; and
- South Coast Air Quality Management District (SCAQMD) Air Quality Management Plans

### 1.3.1. Standards of Significance

National ambient air quality standards (NAAQS) are used to determine air quality impacts under NEPA. The most recent CEQA thresholds of significance published by the SCAQMD were released in 2011. These thresholds supersede the City of Los Angeles thresholds; therefore, this analysis uses the most recent significance thresholds from the SCAQMD to determine construction air quality impacts under CEQA. CEQA thresholds of significance are also used to analyze NEPA compliance because NEPA does not contain thresholds specific to construction. Since CEQA has stricter requirements than NEPA, this is a conservative assumption. The SCAQMD construction significance thresholds include daily emission thresholds for regional air quality impacts, as listed in Table 1.3-1. These thresholds apply to total daily emissions from both on-site sources, such as construction equipment exhaust, and off-site sources, such as haul truck and worker commuting vehicle exhaust.

**Table 1.3-1: SCAQMD CEQA Construction Daily Emission Thresholds**

Pollutant	Daily Emission Threshold (pounds/day)
VOC	75
NO <sub>x</sub>	100
CO	550
SO <sub>2</sub>	150
PM <sub>10</sub>	150
PM <sub>2.5</sub>	55

The SCAQMD has also developed significance thresholds for local air quality impacts. Localized significance thresholds (LSTs) are applicable to the following criteria pollutants: NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub>. LSTs are analogous to NAAQS and CAAQS (pollutant levels below LSTs necessarily do not violate NAAQS and CAAQS). The SCAQMD has used dispersion modeling to develop LST emission look-up tables. The emission values in the tables depend on the size of the construction or operation area, the distance to the nearest receptor and the geographic source-receptor area. If the maximum daily on-site emissions are less than the emissions in the look-up tables, the emissions would not cause the LST to be exceeded.

## 1.4 Climate Change Regulatory Framework

The Regulatory Framework in the Final EIS/EIR hereby incorporated by reference. The 2010 Final EIS/EIR addressed the federal, state, and local regulations and policies listed below:

- Massachusetts et al. v. Environmental Protection Agency et al.
- Mandatory GHG Reporting Rule (U.S. Environmental Protection Agency (USEPA))
- Endangerment Finding (USEPA)
- American Clean Energy and Security Act of 2009
- Clean Energy Jobs and American Power Act
- California Assembly Bill 1493
- California Executive Order S-3-05
- Global Warming Solutions Act of 2006 (Assembly Bill 32)
- Senate Bill 97
- California Air Resources Board (CARB) Interim Significance Thresholds
- Senate Bill 375
- SCAQMD Guidelines and Regulations

Additional local plans related to climate change and GHG emission reductions recently adopted are described below:

- Los Angeles County Metropolitan Transportation Authority's Climate Action and Adaptation Plan, finalized in June 2012, identifies the regional GHG emissions inventory along with goals for future GHG emission reductions due to operation of Metro facilities.
- Los Angeles County Metropolitan Transportation Authority's Countywide Sustainability Planning Policy and Implementation Plan, adopted in December 2012, establishes goals for sustainable transportation solutions including provisions for clean-fueled, efficient, long-term transportation systems while minimizing material and resource use through conservation, re-use, recycling and re-purposing.

### **Metro Polices/City of LA Policies**

The Council on Environmental Quality (CEQ) dictates requirements for reporting environmental consequences under the National Environmental Policy Act (NEPA). While there are no specific NEPA criteria for analyzing climate change impacts, the CEQ developed draft guidance that directs environmental impact statements (EISs) to consider "the GHG emissions effects of a proposed action and alternative actions" and "the relationship of climate change effects to a proposed action or alternative, including the relationship to proposal design, environmental impacts, mitigation and adaptation measures." In addition, the South Coast Air Quality Management District (SCAQMD) developed *Interim GHG Significance Threshold Staff Proposal* (SCAQMD 2008) which states that an evaluation of project-level GHG emissions should be conducted and include direct, indirect, and, if possible, life-cycle emissions during construction and operation. The SCAQMD's recommendations regarding the quantification of emissions were followed for this project; however, the SCAQMD interim thresholds are largely geared towards industrial, residential, and commercial projects, and do

not specifically address transportation projects. Therefore, to establish additional context for considering the magnitude of a project alternative's construction-related GHG emissions, this analysis considers the following guidelines for identifying the levels of GHG emissions that would constitute a cumulatively considerable incremental contribution to the impact on climate change:

- Any residential, commercial, or industrial project that would generate more than 900 MT CO<sub>2</sub>e per year would make a cumulatively considerable incremental contribution to climate change.
- Facilities (i.e., stationary, continuous sources of GHG emissions) that generate more than 25,000 MT CO<sub>2</sub>e per year must report their GHG emissions to ARB, pursuant to AB 32.

The following additional significance criteria are based on Appendix G of the state CEQA Guidelines. The proposed project alternatives would result in a significant climate change and GHG emissions impact if they would:

- Result in an increase or reduce GHG emissions as compared to the existing environmental setting;
- Result in project emissions in excess of a threshold of significance that the lead agency determines applies to the project; or
- Result in non-conformance with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

In order to evaluate the affected environment from a climate change perspective, GHG emissions from construction activities associated with the changes to the project description (extension of tunneling activities further south on Flower Street and the increase of muck truck activity to the Little Tokyo area) were analyzed.

## **1.5 Noise and Vibration Regulatory Framework**

The Federal Noise Control Act of 1972 (Public Law 92-574) requires that all federal agencies administer their programs in a manner that promotes an environment free from noises that could jeopardize public health or welfare. The operational impacts were evaluated using the guidelines set forth by the FTA's guidance manual on *Transit Noise and Vibration Assessment* (May 2006).

### **1.5.1 Construction Noise and Vibration Criteria**

FTA guidelines address the potential for noise and vibration impacts during construction. In the absence of local criteria, construction noise may be evaluated using the FTA criteria summarized in Table 1.5-1. Similarly, the FTA guidelines also address the potential for construction-activity-induced vibration to damage buildings. The potential for ground-borne vibration to cause damage to a building

varies by the type of materials and structural techniques used to construct each building. FTA vibration damage criteria for various structural categories are shown in Table 1.5-2. The same criteria shown in Table 1.5-2 are also used to assess human annoyance and interference.

**Table 1.5-1: FTA Construction Airborne-Noise Criteria**

Land Use	General Assessment		Detailed Assessment		
	1-hour Leq (dBA)		8-hour Leq (dBA)		Ldn (dBA)
	Day	Night	Day	Night	30-day Avg.
Residential	90	80	80	70	75 <sup>a</sup>
Commercial	100	100	85	85	80 <sup>b</sup>
Industrial	100	100	90	90	85 <sup>b</sup>

a - In urban areas with very high ambient noise levels (Ldn > 65 dB), Ldn from construction operations should not exceed existing ambient + 10 dB.

b - Twenty-four-hour Leq, not Ldn.

**Table 1.5-2: FTA Construction Vibration Damage Criteria**

Building Category	PPV (in/sec)	RMS (in VdB) <sup>1</sup>
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

<sup>1</sup> RMS velocity in decibels (VdB) re 1 micro-inch/second

## 1.6 Geotechnical Regulatory Framework

Currently there are no federal regulations regarding geology, soils and seismicity issues. The International Building Code is modified by the State of California and incorporated into the California Building Code, which by state law must be used as minimum level of effort for designing structures in California. The design standards of these codes are also incorporated into Metro's design guidelines and safety standards. There are several hazardous materials regulatory agencies and policies in place that would apply to the monitoring and compliance of the Project and refinement alternatives including:

- United States Environmental Protection Agency (USEPA)
- Resources Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERLA)
- Superfund Amendments and Reauthorization Act (SARA)
- Toxic Substances Control Act (TSCA)
- Federal Occupational Safety and Health Act (OSHA)

Detailed information on each can be found in Section 3.1.1 in the Final EIS/EIR. There have been no new regulatory updates from publication of the Final EIS/EIR to the evaluation of the two tunneling method alternatives that would apply.

The National Environmental Policy Act (NEPA) does not have specific requirements related to geologic hazards or soils. NEPA requires an evaluation of potential impacts related to hazardous materials, which may be categorized in two different ways. First, there is potential for hazardous materials associated with previous land use to pose an impact for the proposed project. Second, there is potential for the proposed project to generate hazardous material impacts to the surrounding human and natural environments. Impacts associated with hazardous materials may occur during construction or operation of the project.

### **1.6.1 Evaluation Methodology**

In general, impacts related to hazardous materials associated with current or previous land use are most relevant to the project alternatives that entail property acquisition and/or construction and thus have the potential to encounter hazardous materials, including contaminated soil and/or groundwater that may exist in the area of potential impact. Generally, conditions along the Flower Street portion of the two tunneling method alternatives, compared to the Project, have remained unchanged. A reconnaissance of the regulatory database, field observations, historical information, and supplemental materials described in the Final EIS/EIR was completed. In addition, the Hazardous Materials Investigation and Analysis report (CDM 2009) identified sites along Flower Street and surrounding properties and provided a determination regarding level of concern associated with environmental contaminants and/or naturally occurring hazardous substances. The Hazardous Materials Investigation and Analysis report, and the Tunnel Feasibility Report form the basis of the evaluation of the two tunneling method alternatives and the potential for new impacts associated with any of these alternatives.

## **1.7 Energy Resources Regulatory Framework**

The Regulatory Framework in the Final EIS/EIR has remained unchanged and is hereby incorporated by reference (Final EIS/EIR, pages 4-223 to 4-224). The 2010 Final EIS/FEIR addressed the federal, state, and local regulations and policies listed below:

- The Energy Policy and Conservation Act of 1975
- The Alternative Fuels Act of 1988
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)
- Senate Bill 1389
- Executive Order S-3-05
- Metro's Energy and Sustainability Policy

The Council on Environmental Quality (CEQ) dictates requirements for reporting environmental consequences under the National Environmental Policy Act (NEPA). While there are no specific NEPA criteria for analyzing impacts to energy resources, 40 CFR § 1502.16(e) directs that environmental impact statements (EISs) include a discussion of the “energy requirements and conservation potential of various alternatives,” “natural or depletable resource requirements and conservation potential of various alternatives,” and potential mitigation measures. In addition, the following significance

criteria are based on Appendix G of the state CEQA Guidelines and the Los Angeles CEQA Thresholds Guide (2006). The tunneling alternatives would result in a significant impact to energy resources if they would:

- Require new (off-site) energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities
- Conflict with adopted energy conservation plans
- Use nonrenewable resources in a wasteful and inefficient manner
- Result in a need for new systems or substantial alterations to power or natural gas

In order to evaluate the affected environment from an energy resource perspective, energy usage from construction activities associated with the changes to the project description (extension of tunneling activities further south on Flower Street and the increase of muck truck activity to the Little Tokyo area) were analyzed.

## **1.8 Historic Resources Regulatory Framework**

This SEIS specifically addresses requirements for environmental review under NEPA and NHPA. NEPA guidelines include compliance with related federal laws that require identification of historic properties and consideration of project-related effects on those properties. Section 106 of NHPA and NEPA procedures, particularly through involvement of Native American and other public constituents in the identification, evaluation, and mitigation processes, might address impact resolution required under other federal laws.

For historic resources, including built environment and archaeological resources, the most relevant laws, regulations, and standards include:

- National Environmental Policy Act of 1969 (NEPA)
- National Historic Preservation Act of 1966 (NHPA)
- FTA Transit Vibration and Noise Standards

### **1.8.1 NEPA and NHPA**

Federal agencies must consider the effects of proposed projects on historic properties. Lead agencies evaluate potential impacts under NEPA and potential effects under NHPA to “historic properties” that are defined as resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP) in an effort to avoid potential significant impacts and adverse effects. Resources that may be eligible for listing in the NRHP include districts, sites, buildings, structures, and objects that are at least 50 years old and are significant in American history, prehistory, architecture, archaeology, engineering, and culture. To be eligible for listing, the resource must meet one of the NRHP Criteria for Evaluation (36 CFR 60.4):

- Criterion A: A property is associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: A property is associated with the lives of a person or persons significant in our past; or
- Criterion C: A property embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: A property has yielded, or may be likely to yield, information important in prehistory or history.

In addition, resources must possess integrity of location, design, setting, material, workmanship, feeling and association. Resources less than 50 years old may be eligible if they have exceptional importance and meet Criteria Consideration G, as described in the NPS's Bulletin No. 22, "How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last 50 Years." Other types of resources that are typically not eligible for the NRHP, including religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, and commemorative properties may be eligible under other specific NRHP criteria considerations.

NEPA requires that environmental impacts to historic properties be evaluated and addressed during the EIS process, in coordination with procedures established by Section 106 of NHPA to address effects on historic properties. A significant impact and/or an adverse effect would occur if the project would directly or indirectly diminish any of the characteristics that qualify a historic property for NRHP eligibility or listing. Under NEPA, a significant impact may be resolved with mitigation measures to avoid the impact or to reduce the impact to a level of less-than-adverse. Under Section 106 of NHPA, adverse effects must be resolved through a consultation process between the federal lead agency, SHPO, interested parties, and the Advisory Council on Historic Preservation (ACHP). If an adverse effect cannot be avoided, mitigation may be agreed upon and documented in a signed MOA to resolve the adverse effect. If mitigation is not agreed upon through the Section 106 process, consultation is terminated and the ACHP may make comments on the procedure.

As part of the original EIS/EIR study for the Project and the tunneling method alternatives, historic properties located in the APE were identified, evaluated for NRHP eligibility, and assessed for effects under Section 106 of NHPA and the Criteria of Adverse Effects as contained in 36 CFR Part 800.5 (a)(1). On June 1, 2010, SHPO concurred with the determinations of eligibility and finding of effects by the FTA. An MOA was prepared and signed in September 2011 to address adverse effects. Section 106 consultation is an on-going process, and project changes may require further consultation and potential amendments to the existing signed MOA.

## 1.8.2 FTA Transit Noise and Vibration Impact Assessment

FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA-VA-90-1003-06) (Hanson 2006) provides standards by which it can be determined whether noise and ground-borne vibration (GBV) will cause damage to adjacent buildings and structures. Noise generated by construction equipment can cause adverse effects to historic properties and significant impacts to historical resources when exposure exceeds the "severe level" as established by FTA (Hanson 2006). Noise that reaches a severe level that cannot be reduced through mitigation or other measures may cause a reduction in use or access to historic properties or historical resources, and thus cause an adverse effect to historic properties or a significant impact to historical resources. For properties or resources where the sense of quiet represents a characteristic of its historical significance, increases in noise may also cause adverse effects and/or significant impacts. GBV generated by construction equipment can also cause adverse effects to historic properties and significant impacts to historical resources that are close to construction activities. Construction-related vibration can cause damage ranging from minor cosmetic damage to interior plaster or woodwork damage to major structural damage. Thus, GBV can harm the characteristics that make historic properties eligible for the NRHP and historical resources eligible for the CRHR.

GBV is established by measuring the vibratory potential of construction equipment, the distance between the equipment and a sensitive receptor (i.e., historical resource or historic property), and the structural category of the historic property and/or historical resource. When assessing the potential for building damage, GBV is usually expressed in terms of the peak particle velocity (PPV) in units of inches per second. FTA vibration damage criteria for various structural categories are listed in Table 1.8-1. The FTA threshold for Category IV buildings (i.e., buildings that are extremely susceptible to vibration damage) of 0.12 inches per second PPV.

**Table 1.8-1: FTA Construction Vibration Damage Criteria**

Building Category and Description	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: U.S. Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual, May 2006. FTA-VA-90-1003-06. Table 12-3.

FTA guidelines address the potential for construction-activity-induced vibration to damage buildings. Project construction activities that have the potential for construction-related noise and vibration impacts include cut-and-cover construction, SEM construction, and TBM tunneling. Equipment, such as large bulldozers and drill rigs, would be the main source of construction vibration that could have the potential to cause vibration damage. Based on the FTA's minimum safe distances identified for Category IV buildings of 0.12 inches per second PPV, the minimum safe distance between construction activities (involving large bulldozers and drill rigs) and buildings would be 21 feet. As a

result, historic buildings within 21 feet of construction may be susceptible to vibration damage, and were identified in the MOA and MMRP.

## 1.9 Environmental Justice Regulatory Framework and Methodology

Executive Order (EO) 12898, **Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**, signed by President Clinton on April 11, 1994 directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse environmental effects of federal agency actions (including transportation projects) on minority and low-income populations. Following is a summary of other guidance and procedures that are used in the environmental justice analysis:

- **Environmental Justice Guidance under the National Environmental Policy Act (CEQ 1997):** Established guidance to assist federal agencies in effectively integrating the issue of environmental justice into their project development procedures.
- **United States Department of Transportation (USDOT) Updated Final Order on Environmental Justice, 5610.2(a) (USDOT 2012):** Provides detailed procedures for identifying environmental justice populations and for determining disproportionately high and adverse effects to the targeted populations.
- **FTA Circular 4703.1 Environmental Justice Policy Guidance for Federal Transit Administration Recipients (FTA 2012):** Provides guidance for incorporating environmental justice principles into plans, projects, and activities receiving funding from FTA.

The strategies developed under **FTA Circular 4703.1** are intended to ensure that communities are offered the opportunity to provide input on the planning and design of a federal action, as well as effects and mitigation measures, and disproportionately high and adverse effects on minority or low-income populations are appropriately addressed. The general methodology for addressing EO 12898 involves identifying the environmental justice populations within the study area and assessing whether the Project would result in disproportionately high and adverse effects on environmental justice populations, taking into consideration mitigation and enhancement measures and Project benefits, as appropriate. As part of the project, future public outreach efforts could include involvement of environmental justice groups when the outreach efforts are initiated given potential impacts to the Little Tokyo area.

The study area for the environmental justice analysis includes the Census block groups that fall within 1/4-mile of a proposed alignment. The assessment of the potential for disproportionate high and adverse effects is based upon the environmental impact information developed for the overall Project. Using the results of the technical studies conducted for the Project, the physical locations of adverse impacts were identified, and a map analysis was conducted to determine whether patterns or concentrations of adverse effects occurred in areas with environmental justice populations.

The data sources used in this SEIS analysis for the identification of minority, low-income, and LEP populations was the American Community Survey (ACS) 5-year average data for 2008-2012.

### 1.9.1 Identifying Low-Income and Minority Populations

The USDOT Order on Environmental Justice (5610.2a) and FTA Circular 4703.1 provide definitions of minority and low-income populations. These populations are as follows:

- **Minority Populations:** Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FTA program, policy, or activity. Minority includes persons who are American Indian or Alaskan Native, Asian American, Native Hawaiian or Other Pacific Islander, Black (not of Hispanic Origin), and Hispanic or Latino.
- **Low-Income Population:** Any readily identifiable group of low-income persons whose household income is at or below the US Department of Health and Human Services (DHHS) poverty guidelines, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed USDOT program, policy, or activity. As established by the DHHS, the poverty guidelines in 2012 are shown in Table 1.9-1 (Health and Human Services Poverty Guidelines, 2012).

**Table 1.9-1: Health and Human Services Poverty Guidelines, 2012**

Persons in Family	Annual Median Household Income Poverty Levels in 48 Contiguous States and Washington, D.C.
1	\$11,170
2	\$15,130
3	\$19,090
4	\$23,050
5	\$27,010
6	\$30,970
7	\$34,930
8	\$38,890
For each additional person, add	\$3,960

SOURCE: *Federal Register*, Vol. 77, No. 17, January 26, 2012, pp. 4034-4035.

When identifying environmental justice communities of concern, FTA calls for the analyses to include “reasonable efforts to identify the presence of distinct minority and/or low-income communities residing both within, and in close proximity to, the proposed project, or activity.” The first step in the process relied on the use of thresholds based on CEQ guidance provided in *Environmental Justice Guidance under NEPA* (CEQ 1997). An environmental justice community was defined to include any Census block group in which the minority or low-income population meets either of the following thresholds:

- Minority population or low-income households in the Census block group exceeds 50 percent;
- Percentage of a minority population in the affected area is meaningfully greater than the lowest percentage in either the county or study area; and

- c) Percentage of low-income households in the affected area is meaningfully greater than the lowest percentage in either the county or the study area. For low-income populations, FTA encourages the use of a locally developed threshold, such as that used for FTA's grant program (Public Law 112-141), or a percentage of median income for the area, provided that the threshold is at least as inclusive as the DHHS poverty guidelines.

The CEQ guidance does not define the specific percentage that should be used for determining if the minority or low-income household is "meaningfully greater" than the average in the surrounding jurisdiction. However, it is consistent with the CEQ guidance to set a threshold that is higher than (not the same as) the average of the low-income or minority population in the surrounding jurisdictions. For this Project, it was determined that the minority or low-income population is "meaningfully greater" than the average in the surrounding jurisdictions if it is higher than the average for the Los Angeles County.

Minority population and low-income household data from the U.S. Census Bureau were compiled at the state, county, and study area levels to provide a basis for identifying areas with high levels of environmental justice populations. Geographic Information System (GIS) maps were developed to illustrate the minority and income characteristics of the population in the study area.

### **Evaluating Potential Effects on Minority and Low-Income Populations**

Disproportionately High and Adverse Effect on Minority and Low-income Populations means an adverse effect that:

- Is predominantly borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Determinations of whether a project would have disproportionately high and adverse effects must take into consideration "mitigation and enhancements measures that will be taken and all offsetting benefits to the affected minority and low-income populations..." (USDOT Order, Section 8.b). The FTA Circular explains how benefits are considered in making this determination:

*"...your analysis also should include consideration of offsetting benefits to the affected minority and low-income populations. This is particularly important for public transit projects because they often involve both adverse effects (such as short-term construction impacts, increases in bus traffic, etc.) and positive benefits (such as increased transportation options, improved connectivity, or overall improvement in air quality). The NEPA environmental justice analysis will include a review of the totality of the circumstances before determining whether there will be disproportionately high and adverse effects on environmental justice populations." (See FTA Circular 4703.1, p. 46.)*

The potential environmental impacts related to operations would remain the same as was determined in the Final EIS/EIR for the Project. As such, analysis of potential environmental justice-related impacts focused on the potential construction impacts of each alternative. Section 2 describes the alternatives that are evaluated in this document.

## **1.10 NEPA Guidance**

An analysis of cumulative impacts is required by NEPA, as defined in 40 CFR 1508.7. The NEPA analysis of cumulative impacts follows the guidance of the Council on Environmental Quality (CEQ) 1997 document, *Considering Cumulative Effects under the National Environmental Policy Act*. In accordance with this guidance, the significance of impacts is evaluated based on context and intensity. Considerations of context and intensity also include a discussion of the severity of the impacts and the likelihood of their occurrence. The standards of significance for cumulative impacts depend on “the type of resource being analyzed, the condition of the resource, and the importance of the resource as an issue (as identified through scoping)” (CEQ 1997, p.45). Therefore, the standards of significance used for cumulative impacts are discipline-specific and may follow the same standards of significance established for the direct and indirect impacts of the project on each resource area. For some resources, limited details about other projects may prevent analysis from reaching the level of precision implied in the standards of significance for the direct and indirect impacts.