

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The following sections discuss the impacts associated with environmental resources for the tunneling method Alternatives A and B. The construction methods described in Chapter 2.0, Alternatives Considered have varying construction impacts along the focused Flower Street segment and Little Tokyo area analyzed in this SEIS. For some environmental resource areas, operational impacts are not changed from those identified in the Final EIS and are not discussed further. Resource areas with no additional operational impacts beyond those identified for the Project in the Final EIS include:

- Visual Quality
- Air Quality
- Climate Change
- Geotechnical
- Energy Resources
- Historical Resources
- Cumulative

In order to identify potential impacts during construction of the tunneling method alternatives, possible effects from construction activities along Flower Street and in Little Tokyo were analyzed. Impacts from construction activities for other portions of the Project Area from the Final EIS were not analyzed because they would be the same for these alternatives as for the Project.

4.1 VISUAL QUALITY

This section summarizes the existing visual and aesthetic environment within the Study Area for this SEIS and evaluates the potential visual and aesthetic impacts resulting from construction of Alternatives A and B. Potential visual impacts to historic resources are summarized in Section 4.7 Historic Resources of this SEIS.

4.1.1 Affected Environment

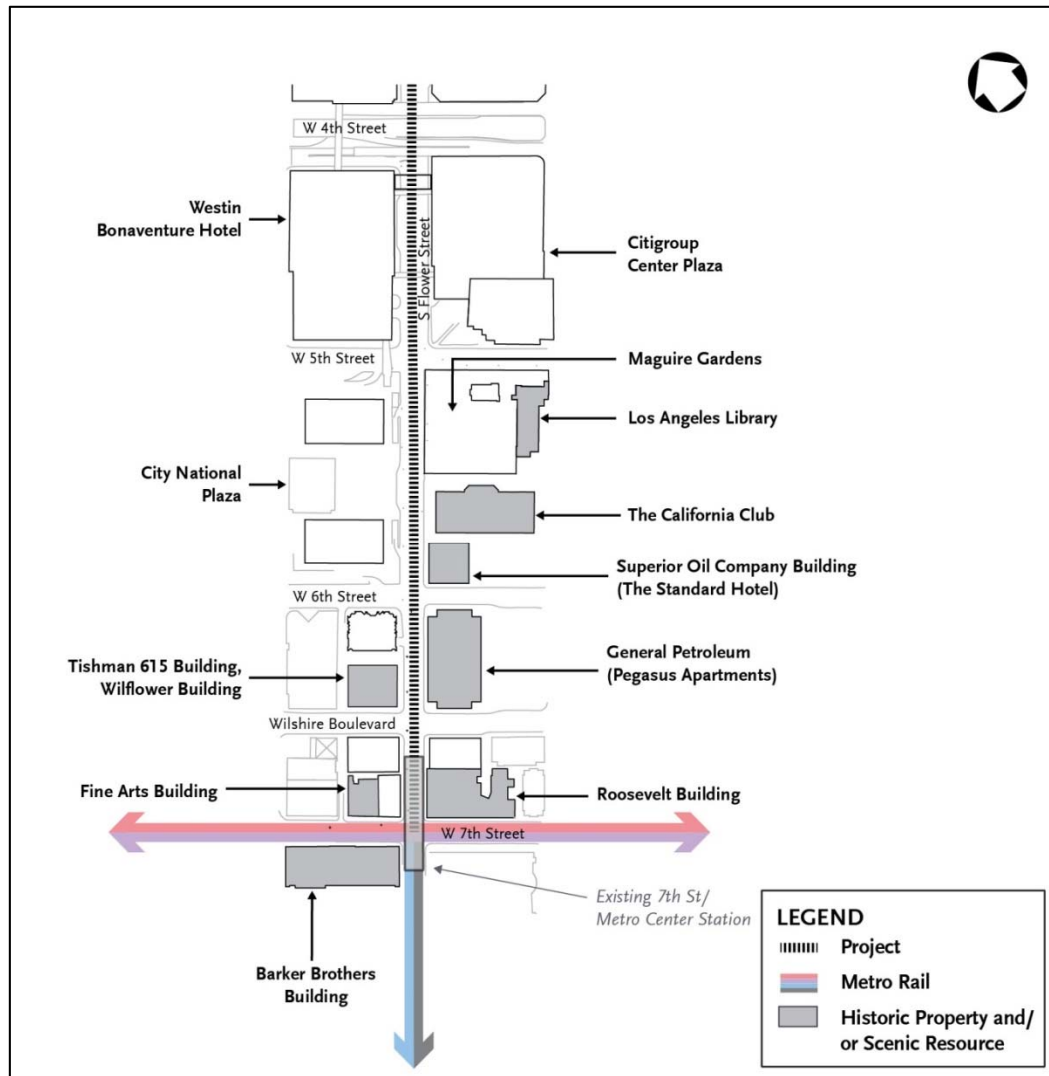
As identified in Section 4.4 Visual and Aesthetic Impacts of the Final EIS, the area for the visual impact analysis consists of the area one city block adjacent to each side of the two tunneling method alternatives along the Flower Street segment between 4th Street and 7th Street/Metro Center Station in the Financial District, and the Mangrove portal site in Little Tokyo.

4.1.1.1 Visual Resources

The existing visual and aesthetic environment is characterized by an established urban landscape. Research was completed to locate visual and aesthetic resources. These resources include, but are not limited to, structures of architectural or historic significance or visual prominence; public plazas, art, and gardens; heritage oaks or other trees or plants protected by the City of Los Angeles; consistent design elements (such as setbacks, massing, height, and signage) along a street or district; pedestrian amenities; and landscaped medians or park areas. Based on site reviews, the predominant visual resources along Flower Street and in Little Tokyo are recognized historic buildings. Figures 4.1-1 and

4.1-2 illustrate identify Flower Street and Little Tokyo buildings respectively that are recognized as historic or visual resources adjacent to the proposed Alternative A and B alignments.

Figure 4.1-1: Historic Properties and Scenic Resources along Flower Street



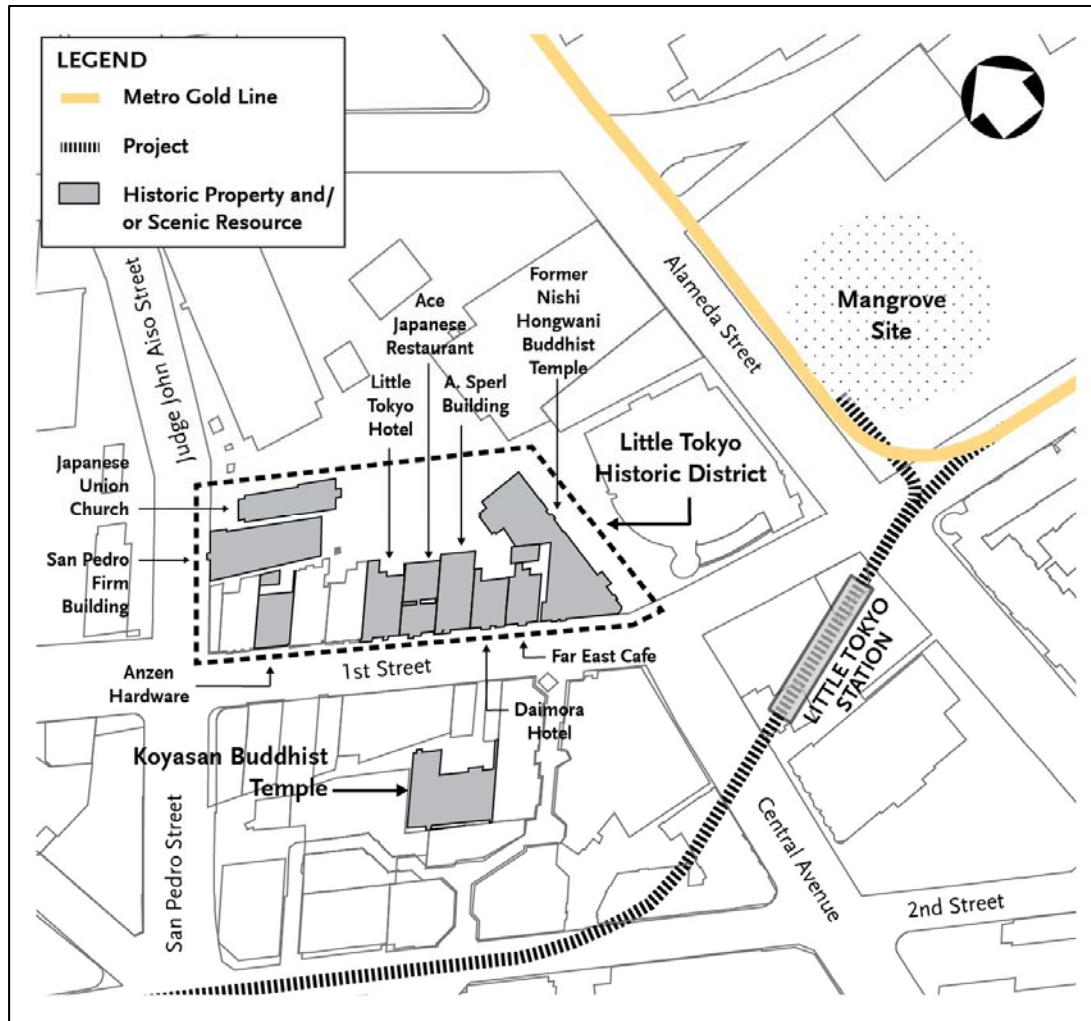
Along Flower Street:

- Pegasus Apartments, 612 South Flower Street
- The Standard Hotel, 550 South Flower Street
- The California Club, 538 South Flower Street
- Los Angeles Central Library and Maguire Gardens, 630 West 5th Street
- Tishman 615 Building, 811 Wilshire Boulevard
- Roosevelt Building, 727 West 7th Street
- Barker Brothers Building, 818 West 7th Street

In the Little Tokyo Area:

- Little Tokyo Historic District
- Los Angeles Homba Hongwanji Temple
- Union Center Arts

Figure 4.1-2: Historic Properties and Scenic Resources in Little Tokyo



4.1.1.2 Scenic Vistas

The City of Los Angeles General Plan and the Scenic Highways Plan within the General Plan's Circulation Element state that there are no scenic highways in downtown Los Angeles. Although Objective 11 of the General Plan's Circulation Element is to "preserve and enhance access to scenic resources and regional open space," there are no such features adjacent to the alternatives under evaluation along Flower Street or in the Little Tokyo area.

4.1.2 Environmental Consequences

Potential impacts to historic resources are evaluated in Section 4.7 Historic Resources of this SEIS. Scenic byways, scenic vistas, and protected public view corridors are not located along the Flower Street segment or Mangrove portal site in Little Tokyo, the Study Area for this SEIS. Therefore, the two tunneling method alternatives would neither impede views from any nationally recognized scenic highways, designated scenic routes, corridors, or parkways nor would they affect any otherwise recognized or valued public viewing locations.

Methodology

The extent of the potential impact from a particular visual change is subjective and depends upon the degree of alteration, the scenic quality of the area disturbed, and the sensitivity of the viewers. The degree of alteration refers to the extent of change, including changes to a structure height, landscaping, and setback, as well as the introduction of construction equipment. Scenic quality is often indicated by a city's special zoning and planning overlay zones, but can also be assessed based on memorability of the view, and unity of the elements within the view.

Due to the location of the tunneling method alternatives in downtown Los Angeles, construction activities would be visible to several different groups of people. To assess their potential responses to the tunneling method alternatives, it is important to identify and categorize different types of viewers depending on their sensitivity to change in the landscape. Viewer groups who currently experience the Study Area include local residents of downtown Los Angeles; patrons and employees of businesses and public facilities in the Financial District and Little Tokyo, and motorists passing through the Study Area. Viewer sensitivity varies depending on the location of the viewer at the time the view is experienced, the duration of that view, the typical activities being undertaken while the view is experienced, and the number of viewers in the sensitive viewer group. A description of each viewer group follows, in order from the most to least sensitive.

The Pegasus Apartments and Roosevelt Building are multi-family residences located directly adjacent to the project alignment along Flower Street and currently have views of the project site in the Financial District. In addition, a multi-family residential complex (Savoy Community Association) is located at the southeast corner of the intersection of Alameda and 1st Streets, directly across the street from the Mangrove site in Little Tokyo.

Patrons and employees of Los Angeles Central Library and Maguire Gardens, California Club, Standard Hotel, City National Plaza, Citigroup Center Plaza, and 811 Wilshire Boulevard currently have direct views of the project site along Flower Street. In addition, patrons and employees of businesses and community facilities currently have direct and indirect views of the Mangrove site in Little Tokyo. Patrons and employees are typically considered less sensitive viewers because they would generally continue to patronize and work in the area despite negative impacts and aesthetics of the area and project site. Patrons and employees at these locations would have a moderate sensitivity to changes in the Study Area.

Motorists pass through the project site along the Flower Street segment in the Financial District, as well as the Mangrove site in Little Tokyo. Motorists are generally considered to be the least sensitive of the viewers identified here as views are fleeting and temporary. However, motorists traveling in the Study Area during peak traffic periods may have a longer duration of views while waiting at traffic signals.

4.1.2.1 Alternative A – EPBM/Open Face Shield/SEM Project Profile

4.1.2.1.1 Construction Impacts

Scenic Resources

There would be no impact from Alternative A to either Flower Street or in the Little Tokyo area as there are no adjacent scenic resources within view from a scenic highway. Potential impacts to visual character and setting, including the setting of historic resources are discussed below.

Construction of Alternative A would not result in adverse effects to scenic resources. Therefore, construction of this alternative would not contribute to a cumulative scenic resource impact

Visual Quality/Visual Character

During construction of Alternative A, activities occurring aboveground in roadways and along sidewalks would temporarily alter the existing visual character and views along Flower Street and in the vicinity of the Mangrove property in Little Tokyo. Construction equipment and staging locations would be visible to nearby land uses and passersby; however, the construction sites themselves would be screened from public view by temporary construction barriers to the extent possible.

Flower Street Impacts

As previously mentioned, highly visible jet grouting and mixing equipment, with certain pieces over 100 feet tall, are of a size, type, and quantity that could not be entirely screened. The proposed grouting rigs to be used for construction of Alternative A are similar in size to the drill rigs and cranes to be used for cut and cover construction under the Project. The difference is due to the number of grouting rigs and supporting equipment, and the duration of grouting compared to cut and cover construction. Grouting rigs are supported by cement and water silos that are similar in size to the rigs, and require mixing and electrical generation equipment to facilitate the mixing and flow of the grouting material.

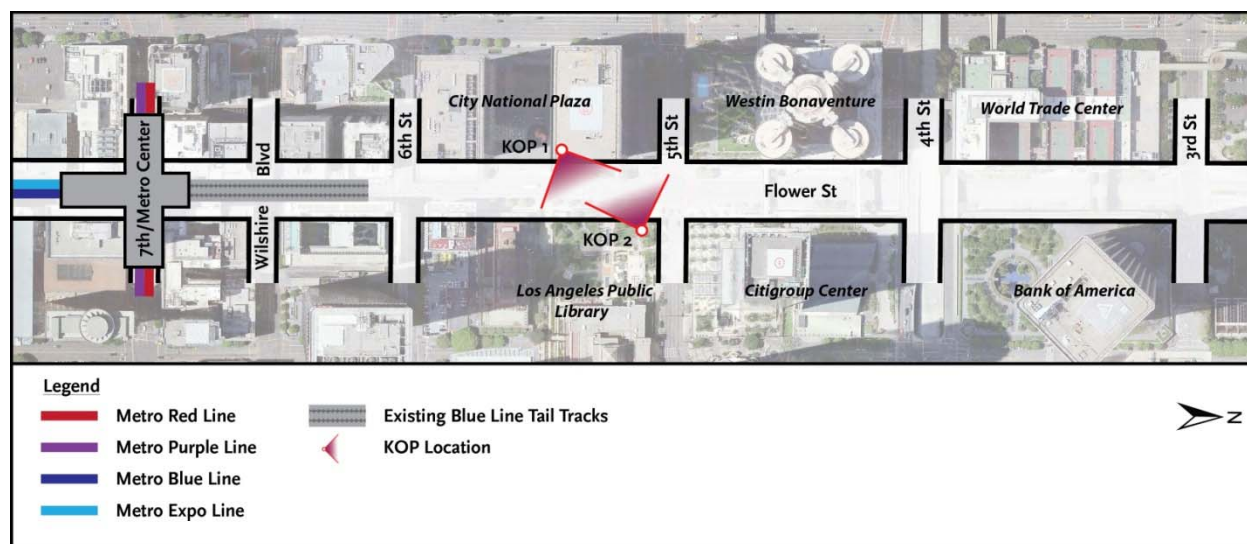
The construction and grouting staging sites are proposed to be located generally in the travel lanes along the east side of Flower Street, from south of 4th Street to 6th Street as discussed and illustrated in Chapter 2, Alternatives Considered. Staging locations were not located on east-west streets such as 5th Street as they typically provide access to the north-bound and south-bound I-110 Freeway two blocks to the west of Flower Street. In the case of 5th Street, while the street is five lanes in width, taking two lanes for equipment storage would significantly reduce the peak period carrying capacity and operations of the street, while Flower Street serves only south-bound downtown traffic and has more capacity to store equipment. In addition, locating construction and grouting activities on 5th

Street would result in significant access impacts to the Los Angeles Central Library and a restaurant business that would need to be closed for the duration of construction due to equipment blocking both views of the business and parking/valet access for the building.

On Flower Street, grouting equipment would be located directly adjacent to the previously identified visual resources, including the Los Angeles Central Library and Maguire Gardens, California Club, The Standard Hotel, and the Pegasus Apartments. As a result of the numerous types, amount, and scale of the equipment associated with grouting, this segment of Flower Street would exhibit an altered visual environment.

As part of a visual character analysis, several viewpoints or key observation points (KOPs) were selected that represented valued views along this segment of Flower Street. The two KOPs, KOP 1 and KOP 2, are located along Flower Street, between 5th and 6th Streets. Each of these KOPs represents public pedestrian, transit rider, and vehicle driver views along Flower Street of nearby valued visual resources such as the Los Angeles Central Library and Maguire Gardens, and the California Club. Figure 4.1-3 shows the locations of KOP 1 and KOP 2.

Figure 4.1-3: Location of Flower Street Key Observation Points (KOPs) 1 and 2



Figures 4.1-4 through 4.1-7 illustrate “before and after” visual simulations, which compare the existing affected environment (before) to the visual character of the use of jet grouting and mixing and other construction equipment (after). The “after” representations of the construction equipment to be used under Alternative A are considered to be conceptual at this time and may not represent the exact construction equipment and/or conditions that would occur if Alternative A were to be constructed.

The view from KOP 1, illustrated in Figures 4.1-4 and 4.1-5, includes an east-facing view of the Los Angeles Central Library and Maguire Gardens, and the California Club along Flower Street from City National Plaza on the west side of Flower Street. The Los Angeles Central Library building is not clearly visible in the view; however, the associated Maguire Gardens includes the mature trees on the left side. The California Club building includes a historic red-brick building toward the right side of the

view. This view is representative of the experience of local residents, patrons, and employees, and passing motorists and pedestrians. Both the Los Angeles Central Library and the California Club and Maguire Gardens are considered to be visual resources.

Figure 4.1-4: Before View of Flower Street Facing East Between 5th and 6th Streets



Figure 4.1-5: After View of Flower Street with Construction and Grouting Equipment Facing East Between 5th and 6th Streets



The before and after views from KOP 2, shown in Figures 4.1-6 and 4.1-7, includes a west-facing view of City National Plaza from within the Maguire Gardens grounds on the east side of Flower Street. The angular orange sculpture is visible within the center of the plaza and is the Plaza's iconic artwork.

This view is representative of the experience specifically of patrons and employees, and passing pedestrians of Maguire Gardens. City National Plaza is considered to be a visual resource.

Figure 4.1-6: Before View of Flower Street Facing West Between 5th and 6th Streets



Figure 4.1-7: After View of Flower Street with Construction and Grouting Equipment Facing West Between 5th and 6th Streets



Although it is not uncommon to have construction activities in a heavily urbanized environment consisting of high- and mid-rise buildings, construction of Alternative A would require the use of large-scale jet grouting and mixing equipment along Flower Street that would noticeably reduce the visual quality or alter viewing context from the perspective of KOP 1 and KOP 2. From KOP 1, views of the mature trees and garden setting of Maguire Gardens, as well as the California Club would be significantly disrupted and blocked by construction activities. Similarly, from KOP 2, west-facing views from within Maguire Gardens toward City National Plaza would be blocked. The visual intrusion of the construction and grouting equipment from the perspective of both KOPs would dominate views for all viewer groups. Temporary construction impacts on visual character along Flower Street would be adverse. Mitigation may not be available to reduce these impacts due to the size, type, and quantity of the construction and grouting equipment.

Little Tokyo Impacts

For Alternative A, construction activities proposed for the Mangrove site would result in an increased number of muck trucks driving through the Little Tokyo area. Although the trucks would not directly impact the visual environment, view of the truck would be temporary and fleeting. Views of the Mangrove site during construction may alter the visual environment for residents, area patrons and employees, as well as passing motorists. Temporary construction impacts on visual character near the Mangrove site would not be reduced with screening to not adverse.

In summary, unlike the Project which does not require the use of grouting, construction of Alternative A would alter the visual quality of the street due to major equipment being located adjacent to historic properties during the entire duration of grouting, approximately 12 months and possibly up to 24 months. Overall, Alternative A would result in more intense, but temporary impacts to the visual character along Flower Street as compared to the Project. Therefore, it would contribute to a temporary cumulative visual impact. All other visual and aesthetic effects from construction of this alternative would not be substantially adverse. Alternative A would result in temporary construction-related adverse effects on the visual character of Flower Street between 4th and 6th Streets that could not effectively be mitigated. Therefore, it would contribute to a temporary cumulative visual character impact. There would be no impacts beyond those identified for the Project, in Little Tokyo.

Nighttime Lighting/Shade and Shadow

During construction of Alternative A, nighttime lighting would predominantly consist of security lighting that would be directed on-site. Construction is expected to occur in two shifts per day, while grouting activities are currently anticipated to take place in one ten-hour, daytime shift per day. Depending on the final contractor work schedule, which may include a second nighttime grouting shift, there would be a potential for nighttime lighting impacts on hotels and businesses along Flower Street. Lighting from construction activity would be limited to the street level, which is currently highly lighted during the night. These construction impacts would be temporary.

The construction of Alternative A would not result in adverse nighttime lighting or shade and shadow impacts along Flower Street based on a single daytime grouting shift. While there would be an increase in truck activity level and duration in Little Tokyo, the trucks would only be operated during

the day. Therefore, this alternative would not contribute to cumulative nighttime lighting or shade and shadow impacts.

4.1.2.2 Alternative B – EPBM/SEM Low Alignment

4.1.2.2.1 Construction Impacts

Scenic Resources

There would be no impact from Alternative B to either Flower Street or in the Little Tokyo area as there are no adjacent scenic resources within view from a scenic highway. Potential impacts to visual character and setting, including the setting of historic resources are discussed below.

Construction of Alternative B would not result in adverse impacts to scenic resources. Therefore, construction of this alternative would not contribute to a cumulative scenic resource impact.

Visual Quality/Visual Character

During construction of Alternative B, activities occurring aboveground in roadways and along sidewalks would temporarily alter the existing visual character and views along Flower Street and adjacent to the Mangrove property in Little Tokyo in similar ways to those identified for Alternative A.

Flower Street Impacts

As previously discussed for Alternative A, highly visible jet grouting and mixing equipment, with certain pieces over 100 feet tall, are of a size, type, and quantity that could not be entirely screened. While the proposed grouting rigs to be used for construction of Alternative B are similar in size to the drill rigs and cranes to be used for the Project's cut and cover construction, the number of grouting rigs and supporting equipment, and the duration of the grouting compared to cut and cover construction would have significant impacts over those of the Project.

For Alternative B, the single construction and grouting staging site required for this alternative is proposed to be located generally in the travel lanes along the east side of Flower Street between just south of 5th Street to 6th Street as discussed and illustrated in Chapter 2, Alternatives Considered. Staging locations were not located on east-west streets such as 5th Street as they typically provide access to the north-bound and south-bound I-110 Freeway two blocks to the west of Flower Street. Taking of two lanes on east-west streets for equipment storage would significantly reduce the peak period carrying capacity and operations of the street, while Flower Street serves only south-bound downtown traffic and has more capacity to store equipment. Similar to Alternative A, locating construction and grouting activities on 5th Street would result in significant access impacts to the Los Angeles Central Library and a restaurant business that would need to be closed for the duration of construction.

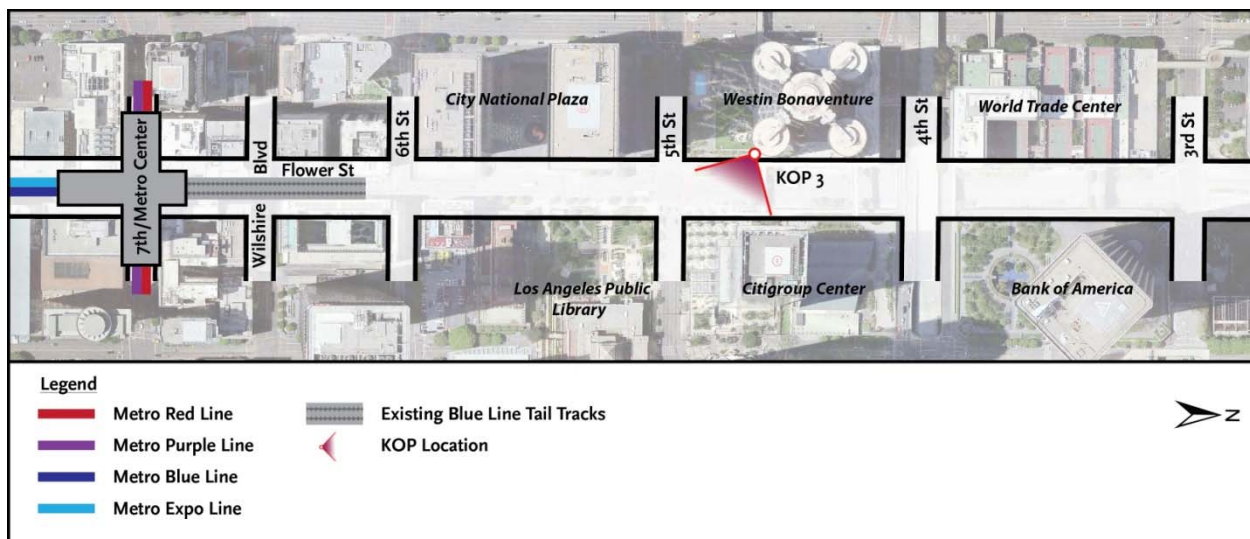
On Flower Street, grouting equipment would be located directly adjacent to the previously identified visual resources, including the Los Angeles Central Library and Maguire Gardens, California Club, The Standard Hotel, and the Pegasus Apartments. As a result of the numerous types, amount, and scale

of the equipment associated with grouting, this segment of Flower Street would exhibit an altered visual environment.

Construction staging locations would be visible to nearby land uses and passersby; however, the construction sites themselves would be sheltered from direct public view by temporary construction barriers. As previously mentioned, highly visible jet grouting equipment, with certain pieces over 100 feet tall that could not be screened, would be located in travel lanes along the east side of Flower Street, from south of 5th Street to just south of 6th Street. As a result of the numerous types, amount, and scale of the equipment associated with jet grouting and mixing, this segment of Flower Street would exhibit an altered visual environment.

As part of the visual character analysis for Alternative B, one KOP was selected that represented a valued view along this segment of Flower Street, and the location where construction conditions along the street would change versus those of the Project. Construction activities in/around the Little Tokyo area remain unchanged, with the exception being the increased length of time of associated construction haul activities due to changes in construction along Flower Street. Figure 4.1-8 illustrates the location of the KOP 3, which is located along Flower Street between 5th and 6th Streets.

Figure 4.1-8: Location of Flower Street KOP 3



The before and after views from KOP 3, illustrated in Figures 4.1-9 and 4.1-10, represents public pedestrian, transit rider, and vehicle driver views along Flower Street of valued visual resources such as the Los Angeles Central Library and Maguire Gardens, and the California Club. The figures compare the existing affected environment (before) to the visual character of the use of jet grouting, mixing, and other construction equipment (after). The “after” representation of the construction equipment to be used under Alternative B are considered to be conceptual at this time and may not represent the exact construction conditions that would occur if Alternative B were constructed.

Figure 4.1-9: Before View of Flower Street Facing Southeast North of 5th Street



Figure 4.1-10: After View of Flower Street Facing Southeast North of 5th Street



Although it is not uncommon to have construction activities in a heavily urbanized environment consisting of high- and mid-rise buildings, the construction of Alternative B, including the use of large-scale jet grouting equipment, would noticeably reduce visual quality or alter viewing context from the perspective of KOP 3. Views of the mature trees of the Citigroup Center Plaza, and Maguire Gardens, as well as the California Club would be significantly disrupted and blocked by construction activities. The visual intrusion of the construction equipment would dominate views for all viewer groups. Furthermore, temporary construction impacts on visual character would be adverse. Mitigation may not be available to reduce these impacts due to the size of the equipment.

Little Tokyo Impacts

For Alternative B, construction activities proposed for the Mangrove site would result in an increased number of muck trucks driving through the Little Tokyo area. Although the trucks would not impact the visual environment, as views of the truck would be temporary. Views of the Mangrove site during construction may alter the visual environment for residents, area patrons and employees, as well as passing motorists. Temporary construction impacts on visual character near the Mangrove site would not be adverse with mitigation similar to the Project. All other visual and aesthetic effects from construction of this alternative would not be substantially adverse.

In summary, unlike the Project which does not require the use of grouting, construction of Alternative B would alter the visual quality of the street due to major equipment being located adjacent to historic properties during the entire duration of grouting, approximately 8 months and possibly up to 16 months. Overall, Alternative B would result in more intense, but temporary impacts to the visual character along Flower Street during construction as compared to the Project. Alternative B would result in temporary construction-related adverse effects on the visual character of Flower Street between 5th and 6th Streets that could not effectively be mitigated. Therefore, it would contribute to a temporary cumulative visual character impact. There would be no impacts, beyond those identified for the Project, in Little Tokyo.

Nighttime Lighting/Shade and Shadow

During construction of Alternative B, nighttime lighting would predominantly consist of security lighting that would be directed on-site. Construction is expected to occur in two shifts per day, while grouting activities are currently anticipated to take place in one ten-hour, daytime shift per day. If the contractor adds a second nighttime grouting shift were added, there would be a potential for nighttime lighting impacts on hotels and businesses along Flower Street. Lighting from construction activity would be limited to the street level, which is currently highly lighted during the night. These construction impacts would be temporary.

The construction of Alternative B would not result in adverse nighttime lighting or shade and shadow impacts along Flower Street based on a single daytime grouting shift. While there would be an increase in truck activity level and duration in Little Tokyo, the trucks would only be operated during the day. Therefore, this alternative would not contribute to cumulative nighttime lighting or shade and shadow impacts.

4.1.3 Mitigation Measures

Mitigation measures to reduce potential visual quality impacts during construction were identified in the Final EIS for the Project. Implementation of mitigation measures VA-1 through VA-5 from the Final EIS would apply for Alternatives A and B. Below is a summary of the identified mitigation measures and a detailed description can be found in Appendix G:

- VA-1: Co-ordination with station area communities
- VA-2: Appropriate integration of urban design elements for the LRT at the street level
- VA-3: Minimizing lighting impacts during construction through shielding
- VA-4: Appropriately locating stockpiles in less visually sensitive locations
- VA-5: Placement of construction sheds and barricades to avoid obstructing views

As with the Project, potentially adverse effects during construction would remain after implementation of these mitigation measures for Alternatives A and B, which would have additional visual quality impacts along Flower Street beyond those identified for the Project due to the type, size, and quantity of grouting and support equipment required for construction of these alternatives.