

Properties were also considered for California Register of Historical Resources (California Register) eligibility; although there is no established age threshold for the California Register, the same 50-year cutoff was used for this project. Under Public Resources Code (PRC) Section 5024.1, the California Register was established to serve as an authoritative guide to the state's significant historical and archaeological resources.

If a proposed project and its related impacts would adversely affect the values of an archaeological or built environment site that is either listed in or determined eligible for inclusion in the National or California Register, such effects and/or impacts would be considered adverse.

## 2.2 Report Format

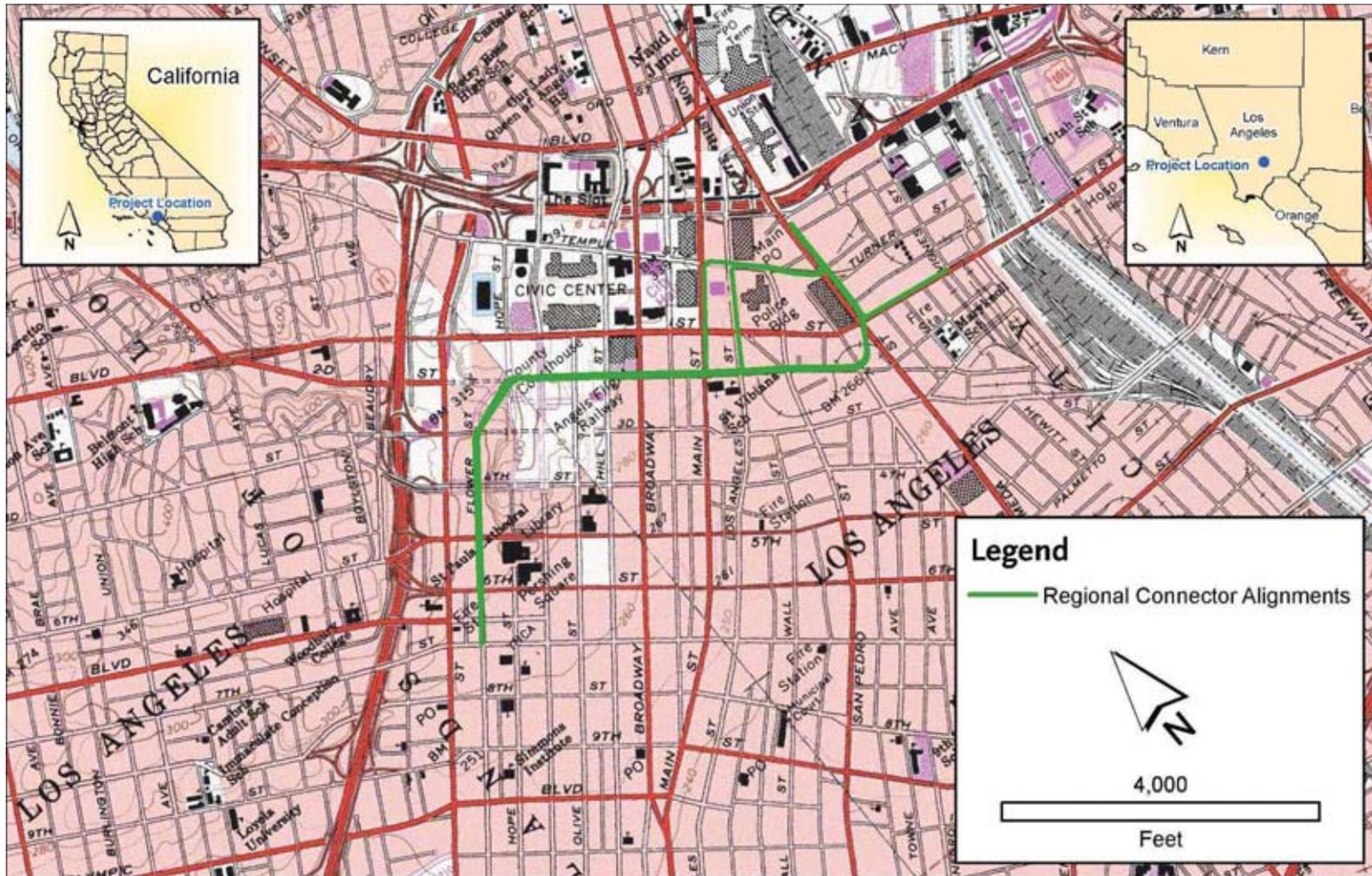
The report format used in this report follows *Archaeological Resource Management Reports: Recommended Contents and Format* (Office of Historic Preservation 1990). Archaeologist John Dietler, Ph.D., RPA was the principal investigator for this technical memorandum.

## 2.3 Project Description

The proposed project would extend 1.9 miles through downtown Los Angeles and provide enhanced Metro service throughout four distinct travel corridors that span over 50 miles across Los Angeles County (Figure 2-1). The proposed 1.9 miles of new dual-tracks in downtown Los Angeles would provide a direct link between the Metro Gold, Blue, and Expo Lines by bridging the gap in the regional light rail network between 7<sup>th</sup> Street/Metro Center Station at 7<sup>th</sup> and Flower Streets and the Little Tokyo/Arts District station at 1<sup>st</sup> and Alameda Streets. This would allow trains to travel directly from East Los Angeles to Culver City and from Long Beach to Pasadena. The project also includes construction of new stations in downtown that would allow all passengers on the Metro Gold, Blue, and Expo Lines to reach multiple destinations in the central business district without transferring.

The following alternatives are evaluated in this technical memorandum:

- No Build Alternative
- Transportation System Management (TSM) Alternative
- At-Grade Emphasis Light Rail Transit (LRT) Alternative
- Underground Emphasis LRT Alternative
- Fully Underground LRT Alternative- Little Tokyo Variation 1
- Fully Underground LRT Alternative- Little Tokyo Variation 2



Source: USGS

Figure 2-1. Project Location

### 2.3.1 No Build Alternative

Transit service under the No Build Alternative is focused on preservation of existing services and projects. The No Build Alternative does not include any major service improvements or new transportation infrastructure beyond what is listed in Metro's 2009 Long Range Transportation Plan (LRTP).

By the projection year of 2035, the Metro Expo Line and the Metro Gold Line to East Los Angeles will have opened, and a number of bus routes will have been reorganized and expanded to provide connections with these new rail lines. All bus and rail lines would operate using a fleet of vehicles similar to those currently in service or identified for purchase in the LRTP. The transit network within the project area will otherwise be largely the same as it is now.

### 2.3.2 Transportation System Management (TSM) Alternative

The Transportation System Management (TSM) Alternative includes all of the provisions of the No Build Alternative, plus two new express shuttle bus lines linking the 7<sup>th</sup> Street/Metro Center and Union Stations. These buses would run frequently, perhaps just a few minutes apart, especially during peak hours. Enhanced bus stops would be located every two to three blocks to maximize coverage of the area surrounding the routes. Rail service would remain the same as described for the No Build Alternative.

The two routes are described below and illustrated on Figure 2-2, TSM Alternative.

- Upper Grand Route – From the 7<sup>th</sup> Street/Metro Center Station, buses would proceed east on 7<sup>th</sup> Street, north on Olive Street, west on 5<sup>th</sup> Street, north on Grand Avenue, east on Temple Street, and then north on Los Angeles Street to Union Station. As a variation, buses could use Alameda Street between Temple Street and Union Station to allow a stop at Temple and Alameda Streets, near the Little Tokyo/Arts District Station. The alignment is assumed to follow the same route as part of the existing Los Angeles Department of Transportation (LADOT) DASH Route B service, proceeding from the 7<sup>th</sup> Street/Metro Center Station to Union Station using Grand Avenue, Temple Street, and Los Angeles Street. Shuttle buses would run less than eight minutes apart and provide coverage of the Bunker Hill and Civic Center areas.
- Lower Grand Route – This route would use the existing northbound bus-only lanes on Figueroa Street and mixed flow lanes on 2<sup>nd</sup> and 3<sup>rd</sup> Streets, which are lightly used by other bus lines. From the 7<sup>th</sup> Street/Metro Center Station, buses would proceed north on Figueroa Street, west on 2<sup>nd</sup> Street, and north on Alameda Street to Union Station. To return to 7<sup>th</sup> Street/Metro Center Station, buses would travel south on Alameda Street, west on 3<sup>rd</sup> Street, and south on Flower Street. The alignment passes by both

the Little Tokyo/Arts District Station and Union Station, and would provide good coverage of Little Tokyo and the southern edge of the Civic Center.

### 2.3.2.1 Operating Characteristics

The shuttle routes would be operated by Metro, and could use vehicles ranging from 30-foot shuttle buses to 60-foot articulated buses. Buses would run every few minutes during peak periods, and peak hour bus-only lanes would be created where possible by restricting parking on streets that do not already have dedicated all-day bus lanes. Similar to the Metro Rapid Bus lines, a Transit Priority System (TPS) that allows longer green lights to oncoming transit vehicles would be used where possible to increase bus speed and efficiency.

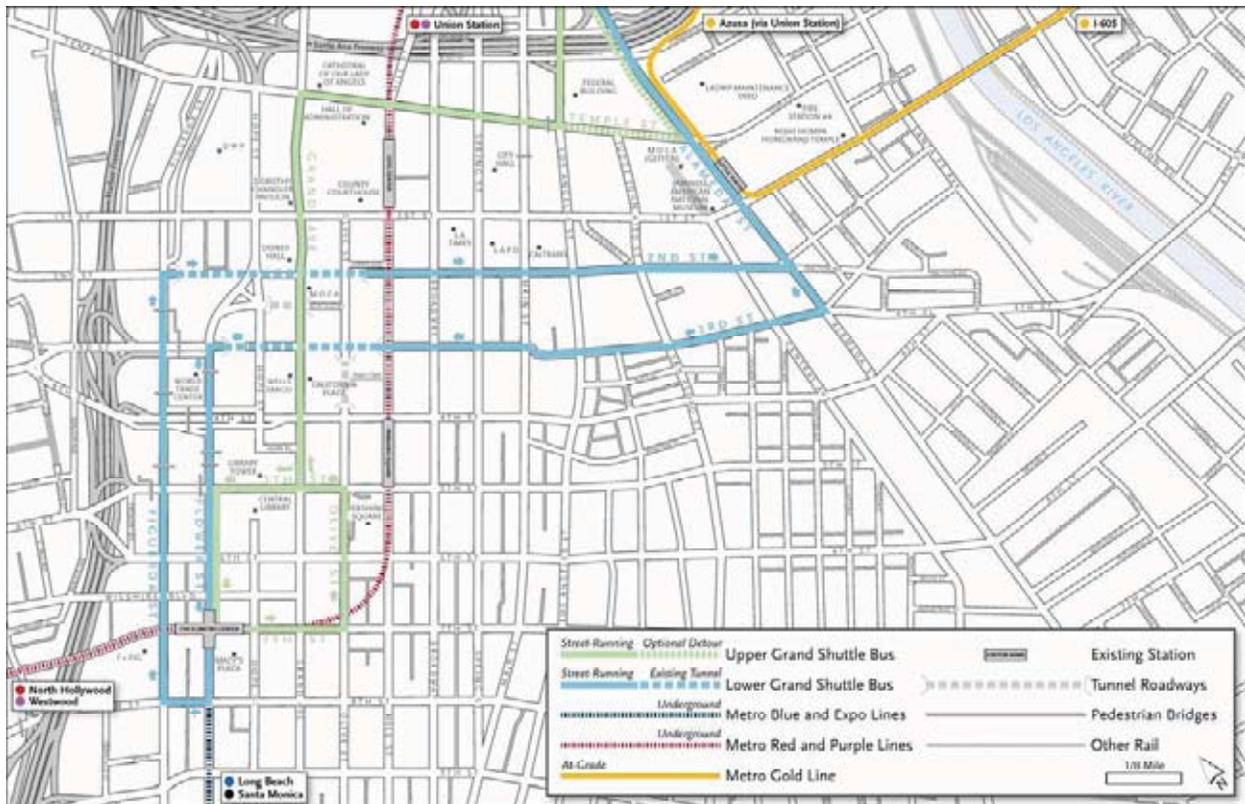


Figure 2-2. Transportation System Management (TSM) Alternative

### 2.3.3 At-Grade Emphasis Light Rail Transit (LRT) Alternative

#### 2.3.3.1 Overview

The At-Grade Emphasis LRT Alternative would provide a direct connection from the existing underground 7<sup>th</sup> Street/Metro Center Station to the Metro Gold Line at Temple and Alameda Streets. Three new stations would be added, one would be a split station with single-direction platforms one block apart. This alignment includes a combination of underground and at-

grade segments, with 46 percent of the route underground. New stations would serve the Civic Center, Grand Avenue, and the Financial District. Conversion of 2<sup>nd</sup> Street to a pedestrian-friendly transit mall is assumed.

To implement this alternative, the number of traffic lanes and on-street parking spaces on 2<sup>nd</sup> Street would be reduced. As a result, traffic is likely to divert to adjacent parallel streets such as 1<sup>st</sup> and 3<sup>rd</sup> Streets, but the roadway capacity along these streets would remain unchanged, as with the No Build Alternative. Traffic congestion along these streets would likely increase. Figure 2-3 illustrates the At-Grade Emphasis LRT Alternative.

### 2.3.3.2 Route Configuration

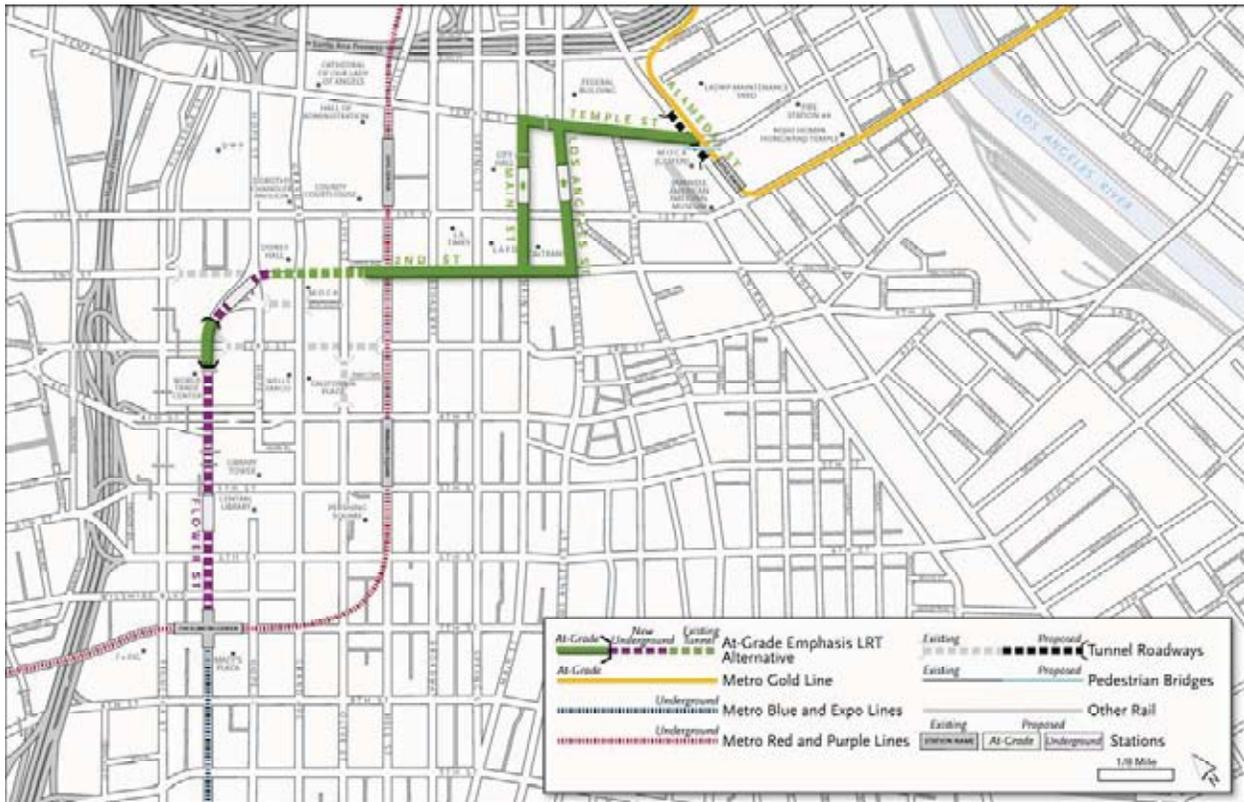
From the existing platform at the 7<sup>th</sup> Street/Metro Center Station, the tracks would extend north underneath Flower Street to a new underground station just south of 5<sup>th</sup> Street. The tracks would then continue north, surface just south of 3<sup>rd</sup> Street, cross 3<sup>rd</sup> Street at grade, and veer northeast through a portal in the hillside to an underground station at 2<sup>nd</sup> and Hope Streets. At this location, a new pedestrian bridge could be constructed to connect the station to Upper Grand Avenue. The tracks would continue northeast, “punch” through the wall of the existing 2<sup>nd</sup> Street tunnel, and then travel east in the 2<sup>nd</sup> Street tunnel toward Hill Street.

This alignment would reduce the 2<sup>nd</sup> Street tunnel from four lanes to one (potentially two lanes, pending further detailed engineering). Trains would proceed east on 2<sup>nd</sup> Street to Main Street. 2<sup>nd</sup> Street would be transit-dedicated, with its current two travel lanes and two parking lanes reduced to a single travel lane primarily for access to parking lots and loading zones. This type of configuration would extend from Hill Street to Los Angeles Street.

At Main Street, the alignment would split into two single-track alignments. One track (for northbound trains) would continue east to Los Angeles Street and then north to Temple Street. The other track (for southbound trains) would travel north on Main Street and then west on Temple Street. Both tracks would have an at-grade station just north of 1<sup>st</sup> Street.

At Temple and Los Angeles Streets, the two tracks would rejoin and proceed west on Temple Street to Alameda Street, where the tracks would join the Metro Gold Line to East Los Angeles in a three-way (wye) junction. Before reaching Alameda Street, the tracks would shift to the south side of Temple Street to provide an adequate turning radius for trains turning north onto the Metro Gold Line’s existing ramp leading to the bridge over the US 101 freeway to Union Station. The ramp would need to be reconfigured to a steeper slope to facilitate turning movements in the three-way junction area. The intersection of Temple and Alameda Streets would also have a vehicular underpass for through-traffic on Alameda Street and a pedestrian bridge to reduce potential conflicts between pedestrians, trains, and automobiles. The pedestrian bridge could potentially have endpoints located on each of the intersection’s four corners.

At-grade crossovers could be located on 2<sup>nd</sup> Street between Hill Street and Broadway, and on 2<sup>nd</sup> Street between Broadway and Spring Street. Crossovers are mechanical track installations along the double-track alignment that allow trains traveling in either direction on either track to move to the other track and continue traveling in the same direction without stopping. Trains may also pass through the crossover without switching tracks. A wider right-of-way may be required in the vicinity of at-grade crossovers, thus potentially increasing the amount of roadway space needed for LRT facilities.



**Figure 2-3. At-Grade Emphasis Light Rail Transit (LRT) Alternative**

In summary, the At-Grade Emphasis LRT Alternative would connect the Metro Blue and Expo Line tracks at the 7<sup>th</sup> Street/Metro Center Station to the Metro Gold Line tracks at a new junction north of the Little Tokyo/Arts District Station. This would be accomplished using new light rail right-of-way and new stations, enabling Metro Gold, Blue, and Expo Line services to be consolidated into two routes.

This report analyzes maximum potential effects for each station. Therefore, the actual effects may be smaller in magnitude than the impacts discussed in this analysis. Tunnel construction would be constrained by basements of existing buildings. No encroachments upon existing basements would occur except potentially at underground stations.

### 2.3.3.3 Operating Characteristics

Two consolidated routes:

- East-West Route – Trains on the Metro Expo Line tracks from Santa Monica would use existing tracks to the 7<sup>th</sup> Street/Metro Center Station, continuing along the new Regional Connector tracks to the new three-way junction at Temple and Alameda Streets. The alignment would then continue east along the Metro Gold Line tracks to East Los Angeles.
- North-South Route – Trains on the Metro Blue Line tracks would travel from the 7<sup>th</sup> Street/Metro Center Station north along the new Regional Connector tracks to the new three-way junction at Temple and Alameda Streets. The alignment would then continue north along the existing Metro Gold Line tracks to Pasadena and the future Metro Gold Line extension to Azusa.

### Vehicle and Pedestrian Circulation

For the at-grade segments of the At-Grade Emphasis LRT Alternative, the two LRT tracks would typically occupy a 26-foot-wide surface right-of-way bordered by mountable curbs. It is expected that this width would increase to 39 feet at center platform station locations.

Vehicular and pedestrian crossings would be limited to traffic signal–controlled intersections, with the signal phasing modified to provide adequate green time for the LRT vehicles to safely cross. For safety reasons, no uncontrolled mid-block vehicular crossings of the tracks would be permitted.

Access to existing parking structures, parking lots, loading docks, and commercial frontage would be affected by the at-grade LRT facilities. Left-turn parking access and egress is presently allowed at many downtown sites. However, the at-grade LRT facilities would prohibit uncontrolled mid-block left turns, thus modifying existing approach and departure traffic patterns.

The proposed At-Grade Emphasis LRT Alternative alignment would travel at-grade along 2<sup>nd</sup> Street. It is assumed that this street would be dedicated as a transit-only roadway between the tunnel and Los Angeles Street. This segment of 2<sup>nd</sup> Street may be closed to through traffic and provide only emergency vehicle access and local access to adjacent properties. As a result of this proposed change in street circulation, through traffic using 2<sup>nd</sup> Street would be diverted to parallel roadways such as 1<sup>st</sup> and 3<sup>rd</sup> Streets east of Los Angeles Street; 2<sup>nd</sup> Street would maintain its current physical features and operating characteristics.

The one-way transit couplet near City Hall along Main and Los Angeles Streets between 2<sup>nd</sup> and Temple Streets would consist of a single LRT track along each roadway. Both Main and Los Angeles Streets are wide enough to accommodate a single track and maintain acceptable

vehicular operations. The curb-to-curb width of Temple Street, between Main and Alameda Streets, is 62 to 71 feet, leaving one lane of traffic in each direction with potentially mountable curbs for use by emergency vehicles. Traffic operations along this segment of Temple Street would be affected by the lane reduction.

To minimize conflicts between rail, vehicular, and pedestrian traffic and minimize delays at the intersection of Temple and Alameda Streets, a vehicular underpass and a proposed pedestrian overpass are proposed along Alameda Street to route the through traffic beneath the rail tracks and Temple Street traffic. Temple Street and the rail tracks would remain at-grade and the existing at-grade segment of Alameda Street lowered to pass under Temple Street.

Through traffic traveling north and south on Alameda Street would operate unimpeded without being stopped or delayed at the intersection. Through traffic traveling east and west on Temple Street would continue to operate at-grade with a signal to control the movements between the vehicular and rail modes of transportation. In addition, a one-lane southbound at-grade frontage road would be provided along Alameda Street to maintain access to the businesses and properties on the west side of the street.

## **2.3.4 Underground Emphasis LRT Alternative**

### **2.3.4.1 Overview**

The Underground Emphasis LRT Alternative would provide a direct connection from 7<sup>th</sup> Street/Metro Center Station to the Gold Line tracks at the Little Tokyo/Arts District Station, including three new station locations. The alignment would extend underground from the 7<sup>th</sup> Street/Metro Center Station under Flower Street to 2<sup>nd</sup> Street. The tracks would then proceed east underneath the 2<sup>nd</sup> Street tunnel and 2<sup>nd</sup> Street to a new portal on the parcel bounded by 1<sup>st</sup> Street, Alameda Street, 2<sup>nd</sup> Street, and Central Avenue.

It is expected that a portion of this property would need to be acquired to construct the portal and stage construction of the tunnels beneath 2<sup>nd</sup> Street. The tracks would then connect to the Gold Line tracks.

The Underground Emphasis LRT Alternative would be located entirely underground except for a single at-grade crossing at the intersection of 1<sup>st</sup> and Alameda Streets in the same type of three-way junction proposed for the At-Grade Emphasis LRT Alternative. Figure 2-4 illustrates this alternative.

### **2.3.4.2 Route Configuration**

The Underground Emphasis LRT Alternative alignment would extend north from the existing platform at the 7<sup>th</sup> Street/Metro Center Station. Tracks would run underneath Flower Street to

the next proposed station, just north of 5<sup>th</sup> Street. The tracks would then continue north underneath Flower Street and veer northeast near the intersection of 3<sup>rd</sup> and Flower Streets.

A new underground station would be located just southwest of the intersection of 2<sup>nd</sup> and Hope Streets. At this location, a new pedestrian bridge could be constructed to connect the station to Upper Grand Avenue.

The tracks would then head east underneath 2<sup>nd</sup> Street to the next proposed station. There are two options for a station on 2<sup>nd</sup> Street. The Broadway Station option would place an underground station on 2<sup>nd</sup> Street between Broadway and Spring Street, and the Los Angeles Street Station option would include an underground station between Main and Los Angeles Streets.

The tracks would then continue east underneath 2<sup>nd</sup> Street to Central Avenue, where they would veer northeast and surface in the lot bounded by 1<sup>st</sup>, Alameda, and 2<sup>nd</sup> Streets, and Central Avenue. The tracks would then enter an at-grade three-way junction in the intersection of 1<sup>st</sup> and Alameda Streets.

A new underpass would carry car and truck traffic along Alameda Street beneath 1<sup>st</sup> Street and the rail junction, and a proposed overhead pedestrian bridge structure would reduce most potential conflicts between pedestrians and trains. The pedestrian overpass could potentially have endpoints at each of the four corners of the intersection.

Crossovers could be located just north of the proposed station at 5<sup>th</sup> and Flower Streets and just east of the proposed station on 2<sup>nd</sup> Street (whether it is between Broadway and Spring Street or between Main and Los Angeles Streets). Crossovers may not be needed at all of these locations and may ultimately be placed in locations that are not adjacent to stations. Underground crossover locations require cut-and-cover construction; tunnel-boring machines cannot be used to construct underground crossovers.

In summary, the Underground Emphasis LRT Alternative would link the Metro Blue and Expo Lines at the 7<sup>th</sup> Street/Metro Center Station to the Metro Gold Line from a new junction just south of the Little Tokyo/Arts District Station at 1<sup>st</sup> and Alameda Streets. This would be accomplished using new light-rail right-of-way and new stations, enabling the consolidation of the Metro Gold, Blue, and Expo Line services into two routes.

This study analyzes maximum potential impacts for each station. Ultimate impacts may therefore be less in magnitude than the impacts disclosed. Tunnel construction would be constrained by basements of existing buildings. No encroachments upon existing basements would occur except potentially at underground stations.

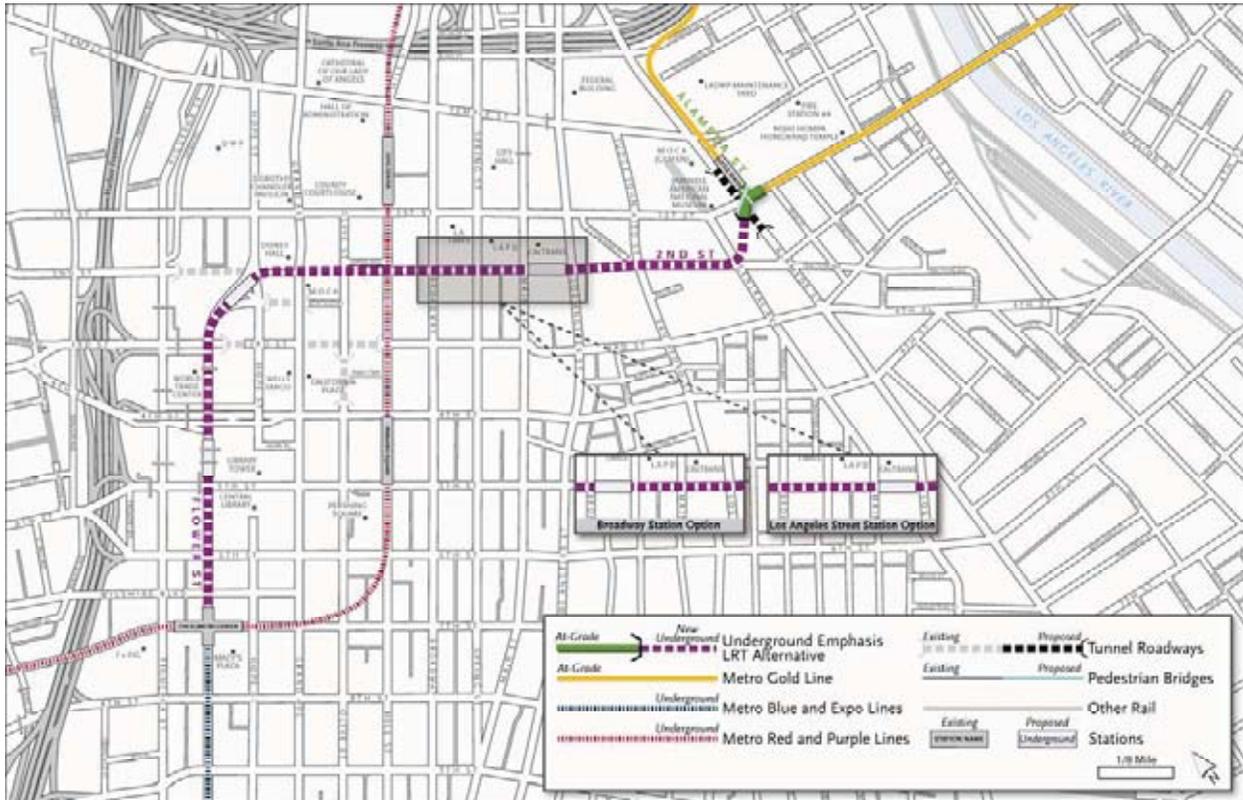


Figure 2-4. Underground Emphasis LRT Alternative

### 2.3.4.3 Operating Characteristics

Two consolidated routes:

- East-West Route – Trains on the Metro Expo Line tracks from Santa Monica would run on tracks to the 7<sup>th</sup> Street/Metro Center Station, then continuing north along the new Regional Connector tracks to the new three-way junction at the intersection of 1<sup>st</sup> and Alameda Streets. Trains would then turn east on 1<sup>st</sup> Street, bypassing the Little Tokyo/Arts District Station, and continue along the Metro Gold Line tracks to East Los Angeles.
- North-South Route – From the 7<sup>th</sup> Street/Metro Center Station, trains from Long Beach would continue north along the new Regional Connector tracks to the new three-way junction at 1<sup>st</sup> and Alameda Streets. The trains would then turn north on 1<sup>st</sup> Street and stop at the existing Little Tokyo/Arts District Station before continuing along the Metro Gold Line route to Pasadena and Azusa.

### Vehicle and Pedestrian Circulation

The Underground Emphasis LRT Alternative alignment would not affect surface traffic or pedestrian circulation except at the intersection of 1<sup>st</sup> and Alameda Streets, where the LRT

alignment would operate in an at-grade configuration. Consequently, vehicular circulation patterns along downtown streets adjacent to most of the alignment would continue to operate under current traffic flow patterns.

The future roadway levels of service for this alternative would be the same as the No Build Alternative except at the intersection of 1<sup>st</sup> and Alameda Streets, where a vehicular underpass and pedestrian overpass are proposed to separate the heavy traffic volumes along Alameda Street from rail traffic to minimize delays. The proposed underpass would result in uninterrupted flow along Alameda Street in the north and south directions between 2<sup>nd</sup> and Temple Streets. Through traffic traveling east and west on 1<sup>st</sup> Street would continue to operate at-grade with a signal to control the movements between the vehicular and rail modes of transportation.

To maintain access to adjacent businesses and properties, at-grade frontage roads would be provided along both sides of Alameda Street south of the intersection and on the southbound side of the street north of the intersection. A full northbound frontage road crossing 1<sup>st</sup> Street is not feasible because of the location of the tracks and the Little Tokyo/Arts District Station on the east side of Alameda Street.

### **2.3.5 Fully Underground LRT Alternative – Little Tokyo Variation 1**

#### **2.3.5.1 Overview**

The Fully Underground LRT Alternative - Little Tokyo Variation 1 would provide four new stations and a direct connection from 7<sup>th</sup> Street/Metro Center Station to the existing Metro Gold Line tracks to the north and east of 1<sup>st</sup> and Alameda Streets. The alignment would extend underground from the 7<sup>th</sup> Street/Metro Center Station under Flower Street to 2<sup>nd</sup> Street. The tracks would then proceed east underneath the 2<sup>nd</sup> Street tunnel and 2<sup>nd</sup> Street to Central Avenue.

At 2<sup>nd</sup> and Central, the tracks would continue underground heading northeast under 1<sup>st</sup> and Alameda Streets. A three-way junction would be constructed underground beneath the 1<sup>st</sup> and Alameda intersection. To the north and east of the junction, trains would rise to the surface through two new portals to connect to the Metro Gold Line heading north to Azusa and east to the San Gabriel Valley. One portal would be located northeast of the Little Tokyo/Arts District Station and tracks. This portal would rise to the north within the City of Los Angeles Department of Water and Power (LADWP) Maintenance Yard and connect to the existing LRT bridge over the US-101 freeway, allowing a connection to the Metro Gold Line to Azusa. The portal would be connected to the 1<sup>st</sup> and Alameda junction by a new tunnel crossing beneath Temple Street and the property proposed for the Nikkei Center (the parcel on the northeast corner of 1<sup>st</sup> and Alameda Streets), running immediately east of the Little Tokyo/Arts District Station and tracks.

The second portal would be located within 1<sup>st</sup> Street between Alameda and Vignes Streets. Tracks would rise to the east within this second portal and connect at-grade to the existing Metro Gold Line tracks toward I-605. 1<sup>st</sup> Street would be widened to the north to accommodate the portal. Street widening would be initiated at Alameda and continue east, tapering down significantly as it crosses Hewitt Street to join the existing 1<sup>st</sup> Street LRT tracks about one and half blocks west of the 1<sup>st</sup> Street Bridge.

Additional property would need to be acquired to stage construction of both portals, connect to the Gold Line LRT Bridge, and complete the tunnels beneath 2<sup>nd</sup> Street and the Nikkei Center property. The Fully Underground Alternative – Little Tokyo Variation 1 would be located entirely underground from east of the intersection of 1<sup>st</sup> and Alameda Streets to the 7<sup>th</sup> Street/Metro Center Station. Figure 2-5 illustrates this alternative.

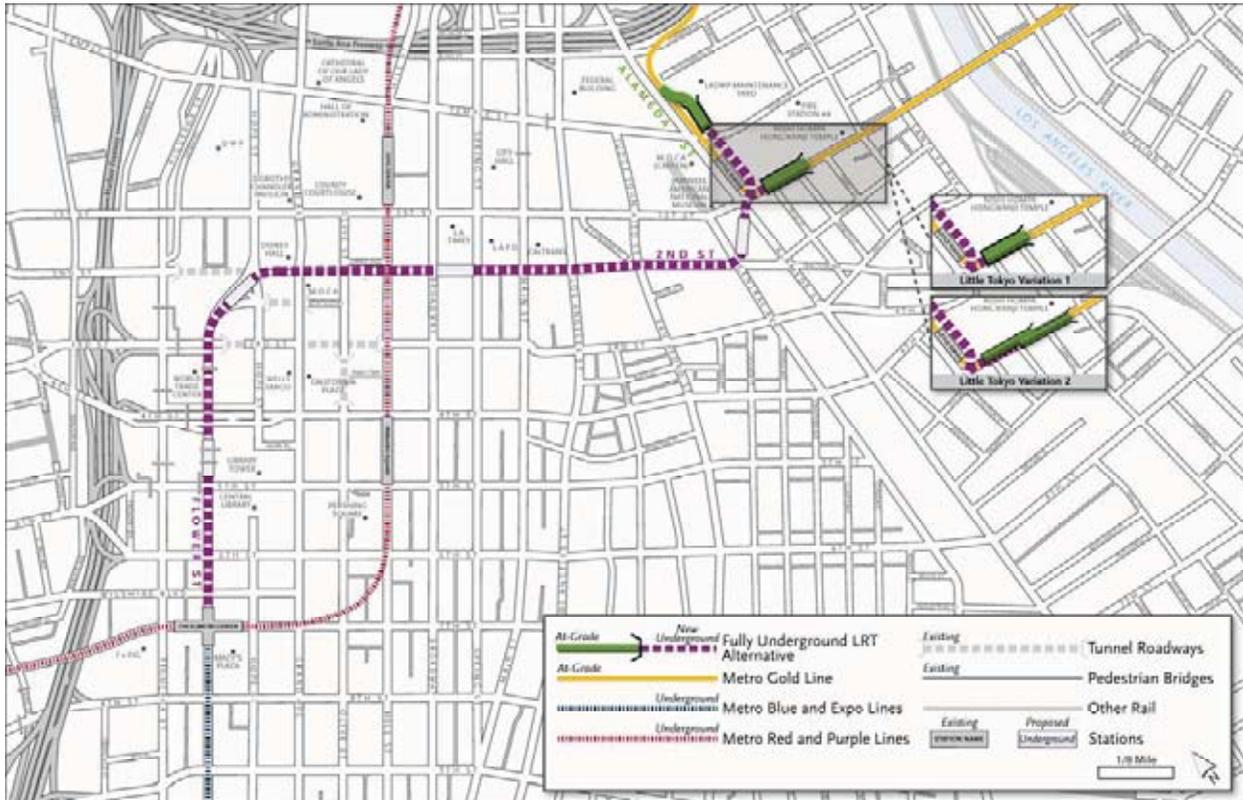
### 2.3.5.2 Route Configuration

The Fully Underground LRT Alternative- Little Tokyo Variation 1 alignment would extend north from the existing LRT platform at 7<sup>th</sup> Street/Metro Center Station. Tracks would run underneath Flower Street to the next proposed station, just north of 5<sup>th</sup> Street. The tracks would then continue north underneath Flower Street and veer northeast near the intersection of 3<sup>rd</sup> and Flower Streets.

A new underground station would be located just southwest of the intersection of 2<sup>nd</sup> and Hope Streets. At this location, a new pedestrian bridge could be constructed to connect the station to Upper Grand Avenue. The bridge could begin at street level near the station entrance and cross above the intersection and along Kosciuszko Way to reach Upper Grand Avenue.

The tracks would then head east underneath 2<sup>nd</sup> Street to the next proposed station at Broadway. The 2<sup>nd</sup> Street/Broadway station would be located under 2<sup>nd</sup> Street approximately between Broadway and Spring Street. The tracks would then continue east underneath 2<sup>nd</sup> Street to Central Avenue, where they would veer northeast to a new underground station, which would potentially be located within the property currently occupied by Office Depot and other small commercial uses.

The tracks would continue from the station under the 1<sup>st</sup> and Alameda intersection into a new underground three-way junction. Separating from the junction, one set of tracks would continue underground beneath the proposed Nikkei Center parcel (the parcel on the northeast corner of 1<sup>st</sup> and Alameda Streets), along the eastern side of the existing Little Tokyo/Arts District Station. These tracks would travel under Temple Street before surfacing in the LADWP yard and rising to connect to the existing Metro Gold Line LRT bridge over the US-101 Freeway. This would allow trains to continue along the Metro Gold Line to Pasadena, which will be extended to Azusa per Metro's Long Range Transportation Plan. Traffic lanes on Alameda Street would be reconfigured temporarily during construction.



**Figure 2-5. Fully Underground Emphasis LRT Alternative - Little Tokyo Variation 1 and Little Tokyo Variation 2**

The other set of tracks leaving the three-way junction would rise to the east within 1<sup>st</sup> Street to accommodate a new portal as well as existing Metro Gold line tracks. 1<sup>st</sup> Street would be widened to the north to accommodate the portal. Street widening would be initiated at Alameda and continue east, tapering down significantly as the alignment crosses Hewitt Street to join the existing 1<sup>st</sup> Street LRT tracks, about one and half blocks west of the 1<sup>st</sup> Street Bridge. This would allow trains to continue along the Metro Gold Line to East Los Angeles, which will be eventually extended to about I-605 per Metro’s Long Range Transportation Plan.

The signalized intersection of 1<sup>st</sup> and Hewitt Streets would be removed. North-south traffic along Hewitt Street would no longer be able to cross 1<sup>st</sup> Street. All left turns at 1<sup>st</sup> and Hewitt would be prohibited. Right turns to and from Hewitt Street would continue to be permitted. Automobile access to the proposed Nikkei Center parcel would continue to be available from Temple and 1<sup>st</sup> Streets. However, access at any driveways into the parcel along 1<sup>st</sup> Street would be restricted to right turns only.

The existing Metro Gold Line and the Little Tokyo/Arts District Station surface tracks and station would be maintained for continued service during construction, with only intermittent disruptions related to construction activities. Once construction is complete, operation of the

current Metro Gold Line between Pasadena and East Los Angeles would terminate. Metro would initiate operations on two routes: between Azusa and Long Beach, and between East Los Angeles and Santa Monica.

Crossovers could be located just north of the proposed station at 5<sup>th</sup> and Flower Streets and just east of the proposed station at 2<sup>nd</sup> Street and Broadway. Crossovers may not be needed at both of these locations, and may ultimately be placed in locations that are not adjacent to stations.

Underground crossover locations require cut-and-cover construction; tunnel boring machines cannot be used to construct underground crossovers. More information on these construction methods is provided in the Description of Construction.

In summary, the Fully Underground LRT Alternative – Little Tokyo Variation 1 would link the Metro Blue and Expo Lines at the 7<sup>th</sup> Street/Metro Center Station to the Metro Gold Line from a new junction under 1<sup>st</sup> and Alameda Streets. This would be accomplished using new light rail right-of-way and new stations, enabling Metro Gold, Blue, and Expo Line services to be consolidated.

This technical memorandum analyzes maximum potential impacts for each station. Ultimate impacts may therefore be smaller in magnitude than the impacts disclosed. Tunnel construction would be constrained by basements of existing buildings. No encroachments upon existing basements would occur except potentially at underground stations.

### 2.3.5.3 Operating Characteristics

#### Two consolidated routes:

The Regional Connector would consolidate the Metro Gold Line, Metro Expo Line, and Metro Blue Line into the two following routes:

- East-West Route - Metro Expo Line trains from Santa Monica would run on the existing tracks north of the existing 7th Street/Metro Center Station, continuing north along new Regional Connector tracks to a new three-way junction beneath the intersection of 1<sup>st</sup> and Alameda Streets. Trains would then travel to the new portal on 1<sup>st</sup> Street, and continue along the Metro Gold Line tracks to about I-605.
- North-South Route - After stopping at 7th Street/Metro Center Station, Metro Blue Line trains from Long Beach would continue north along the new Regional Connector tracks to the new three-way junction beneath 1<sup>st</sup> and Alameda Streets. Trains would then travel to the new portal on the LADWP site, and continue along the Pasadena Metro Gold Line to Azusa.

The east-west and north-south routes would each operate with 5-minute headways during peak hours, combining to yield trains every 2 ½ minutes in each direction along the Regional Connector corridor.

### **Vehicle and Pedestrian Circulation**

The Fully Underground LRT Alternative – Little Tokyo Variation 1 alignment would not affect surface traffic or pedestrian circulation on 1<sup>st</sup> Street between Alameda Street and the 1<sup>st</sup> Street bridge, where the LRT alignment would rise within a portal to an at-grade configuration. Street widening and sidewalk modifications would be required in this area.

Vehicular circulation patterns along downtown streets adjacent to most of the alignment would continue to operate under current traffic flow patterns except where a newly installed traffic signal at 1<sup>st</sup> and Hewitt Streets would be removed. Through traffic movements along Hewitt Street would no longer be permitted at 1<sup>st</sup> Street, and no left turns to or from Hewitt Street would be possible.

Permanent roadway and lane reconfigurations around the proposed 2<sup>nd</sup>/Hope Street and Flower/5<sup>th</sup>/4<sup>th</sup> Street stations would also be needed. At the proposed 2<sup>nd</sup>/Hope Street station, a short connector roadway would be removed, but all existing traffic movements would still be possible via the remaining connector roadways. At the proposed Flower/5<sup>th</sup>/4<sup>th</sup> Street station, one traffic lane would need to be removed from Flower Street to accommodate station entrances along the sidewalk.

## **2.3.6 Fully Underground LRT Alternative- Little Tokyo Variation 2**

### **2.3.6.1 Overview**

The Fully Underground LRT Alternative - Little Tokyo Variation 2 would provide four new stations and a direct connection from 7<sup>th</sup> Street/Metro Center Station to the existing Metro Gold Line tracks to the north and east of 1<sup>st</sup> and Alameda Streets. The alignment would be the same as the Fully Underground LRT Alternative – Little Tokyo Variation 1 from the 7<sup>th</sup> Street/Metro Center Station to 2<sup>nd</sup> Street and Central Avenue.

A new two-level underground junction would be constructed beneath the 1<sup>st</sup> and Alameda Streets intersection. Trains traveling north toward Azusa and east toward I-605 would use the lower level of the junction, and trains travelling south toward Long Beach and west toward Santa Monica would use the upper level. To the north and east of the junction, trains would rise to the surface through new portals to connect to the Metro Gold Line heading north to Azusa and east towards I-605.

One portal containing the northbound and southbound tracks would be located northeast of the Little Tokyo/Arts District Station and tracks. This portal would rise to the north within the

LADWP Maintenance Yard and connect to the existing LRT bridge over the US-101 freeway, allowing a connection to the Metro Gold Line.

This portal would be connected to the 1<sup>st</sup> and Alameda junction by a new cut-and-cover tunnel crossing beneath Temple Street and the property proposed for the Nikkei Center (the parcel on the northeast corner of 1<sup>st</sup> and Alameda Streets), running immediately east of the existing Little Tokyo/Arts District station and tracks. The new tunnel would feed southbound trains from the portal into the upper level of the junction, and carry northbound trains away from the lower level of the junction toward the portal.

Two portals, each containing one track, would rise to the east within the widened median of 1<sup>st</sup> Street to allow a connection to the Metro Gold Line towards I-605. The portal containing the westbound track would be located between Alameda and Garey Streets. The portal containing the eastbound track would be located adjacent to the westbound track between Hewitt and Vignes Streets.

1<sup>st</sup> Street would be widened to the north to accommodate the westbound portal. The widening would be initiated at Alameda and continue east, tapering down significantly as it crosses Hewitt Street. There, the new tracks would feed into the existing 1<sup>st</sup> Street LRT tracks, about a block west of the 1<sup>st</sup> Street Bridge. 1<sup>st</sup> Street would also be widened to the south between Hewitt and Vignes Streets to accommodate the eastbound track portal. The widening would taper down as it approaches Vignes Street. No modification to the 1<sup>st</sup> Street Bridge would be necessary.

Additional property would need to be acquired to stage construction of both portals, connect to the Gold Line LRT Bridge, and complete the tunnels beneath 2<sup>nd</sup> Street and the Nikkei Center property.

The Fully Underground Alternative – Little Tokyo Variation 2 would be located entirely underground from the 7<sup>th</sup> Street/Metro Center Station to west of the intersection of 1<sup>st</sup> and Alameda Streets. Figure 2-5 illustrates this alternative.

### **2.3.6.2 Route Configuration**

The Fully Underground LRT Alternative – Little Tokyo Variation 2 alignment would extend north from the existing LRT platform at 7<sup>th</sup> Street/Metro Center Station. Tracks would run underneath Flower Street to the next proposed station, just north of 5<sup>th</sup> Street. The tracks would then continue north underneath Flower Street and veer northeast near the intersection of 3<sup>rd</sup> and Flower Streets.

A new underground station would be located just southwest of the intersection of 2<sup>nd</sup> and Hope Streets. At this location, a new pedestrian bridge could be constructed to connect the station to Upper Grand Avenue. The bridge could begin at street level near the station

entrance and cross above the intersection and along Kosciuszko Way to reach Upper Grand Avenue.

From 3<sup>rd</sup> and Flower Streets, the tracks would head east underneath 2<sup>nd</sup> Street to the next proposed station at Broadway. The 2<sup>nd</sup> Street/Broadway station would be located under 2<sup>nd</sup> Street approximately between Broadway and Spring Street.

The tracks would then continue east underneath 2<sup>nd</sup> Street to Central Avenue, where they would veer northeast to a new underground station that would potentially be located within the property currently occupied by Office Depot and other small commercial uses.

As the tunnels turn northeast from 2<sup>nd</sup> Street, the northbound tunnel would descend and the southbound tunnel would rise so that the southbound tunnel would be stacked on top of the northbound tunnel. The new underground station near 2<sup>nd</sup> Street and Central Avenue would have two underground levels, each with a single-track platform. The northbound track with trains headed north and east would be on the lower level, and the southbound track with trains headed south and west would be on the upper level.

The tracks would continue from the station under the 1<sup>st</sup> and Alameda intersection into a new two-level underground junction. Separating from the junction, one track from the lower level (northbound) and one track from the upper level (southbound) would continue underground beneath the proposed Nikkei Center parcel (the parcel on the northeast corner of 1<sup>st</sup> and Alameda Streets), along the eastern side of the existing Little Tokyo/Arts District Station.

These tracks would travel under Temple Street before surfacing in the LADWP yard and rising to connect to the existing Metro Gold Line LRT bridge over the US-101 Freeway. This would allow trains to continue along the Metro Gold Line to Pasadena, which will be extended to Azusa per Metro's Long Range Transportation Plan. Traffic lanes on Alameda Street would be reconfigured temporarily during construction.

A second track (westbound) leaving the upper level of the junction would rise to the east within 1<sup>st</sup> Street between Alameda and Hewitt Streets and link to the existing Metro Gold Line track. Another track (eastbound) leaving the lower level of the junction would rise to the east within 1<sup>st</sup> Street between Hewitt and Vignes Streets, adjacent to the westbound track, and link to the existing Metro Gold Line track.

1<sup>st</sup> Street would be widened to the north and south to accommodate the portal and temporary tracks to maintain Metro Gold Line service during construction. Widening would be initiated at Alameda and continue east, tapering down significantly as the alignment crosses Hewitt Street and again at Vignes Street, where tracks would join the existing 1<sup>st</sup> Street LRT tracks, just west of the 1<sup>st</sup> Street Bridge. This would allow trains to continue along the Metro Gold

Line to East Los Angeles, which will be eventually extended toward I-605 per Metro's Long Range Transportation Plan.

The signalized intersection of 1<sup>st</sup> and Hewitt Streets would be removed. North-south traffic along Hewitt Street would no longer be able to cross 1<sup>st</sup> Street. All left turns at 1<sup>st</sup> and Hewitt would be prohibited. Right turns to and from Hewitt Street would continue to be permitted.

Automobile access to the proposed Nikkei Center parcel would continue to be available from Temple and 1<sup>st</sup> Streets. However, access at any driveways into the parcel along 1<sup>st</sup> Street would be restricted to right turns only. The existing Metro Gold Line and Little Tokyo/Arts District Station and surface tracks would be maintained for continued service during construction, with intermittent disruptions related to construction activities.

One lane of 1<sup>st</sup> Street would need to be temporarily closed during construction between Alameda and Vignes Streets to maintain these surface tracks. The surface tracks would not remain in place beyond construction. Once construction is complete, operation of the current Metro Gold Line between Pasadena and East Los Angeles would terminate. Metro would initiate operations on two routes: between Azusa and Long Beach, and between East Los Angeles and Santa Monica.

Crossovers could be located just north of the proposed station at 5<sup>th</sup> and Flower Streets and just east of the proposed station at 2<sup>nd</sup> Street and Broadway. Crossovers may not be needed at both of these locations and may ultimately be placed in locations that are not adjacent to stations. Underground crossover locations require cut-and-cover construction; tunnel boring machines cannot be used to construct underground crossovers. More information on these construction methods is provided in the Description of Construction.

In summary, the Fully Underground LRT Alternative – Little Tokyo Variation 2 would link the Metro Blue and Expo Lines at the 7<sup>th</sup> Street/Metro Center Station to the Metro Gold Line. The link would be provided by a new two-level junction under 1<sup>st</sup> and Alameda Streets using new light rail right-of-way and new stations, enabling Metro Gold, Blue, and Expo Line services to be consolidated.

This technical memorandum analyzes maximum potential impacts for each station. Ultimate impacts may therefore be smaller in magnitude than the impacts disclosed. Tunnel construction would be constrained by basements of existing buildings. No encroachments upon existing basements would occur except potentially at underground stations.

### 2.3.6.3 Operating Characteristics

#### Two consolidated routes:

- The Regional Connector would consolidate the Metro Gold Line, Metro Expo Line, and Metro Blue Line into the two following routes: East-West Route - Metro Expo Line trains from Santa Monica would run on the existing Flower Street tracks north of the junction at Washington and Flower Streets. After stopping at the existing 7<sup>th</sup> Street/Metro Center Station, they would continue north along the new Regional Connector tracks to the new two-level junction beneath the intersection of 1<sup>st</sup> and Alameda Streets. Trains would then travel to the new portals on 1<sup>st</sup> Street, and continue along the Metro Gold Line tracks towards I-605.
- North-South Route - After stopping at 7<sup>th</sup> Street/Metro Center Station, Metro Blue Line trains from Long Beach would continue north along the new Regional Connector tracks to the new two-level junction beneath 1<sup>st</sup> and Alameda Streets. The trains would then travel to the new portal on the LADWP site, and continue along the Pasadena Metro Gold Line to Azusa.

The east-west and north-south routes would each operate with 5-minute headways during peak hours, combining to yield trains every 2 ½ minutes in each direction along the Regional Connector.

#### Vehicle and Pedestrian Circulation

The Fully Underground LRT Alternative – Little Tokyo Variation 2 alignment would not permanently affect surface traffic or pedestrian circulation on 1<sup>st</sup> Street between Alameda Street and the 1<sup>st</sup> Street bridge, where the LRT alignment would rise within a portal to an at-grade configuration. Street widening and sidewalk modifications would be required in this area.

Vehicular circulation patterns along downtown streets adjacent to most of the alignment would continue to operate under current traffic flow patterns except where a newly installed traffic signal at 1<sup>st</sup> and Hewitt Streets would be removed. Through traffic movements along Hewitt Street would no longer be permitted at 1<sup>st</sup> Street, and no left turns to or from Hewitt Street would be possible.

Permanent roadway and lane reconfigurations around the proposed 2<sup>nd</sup>/Hope Street and Flower/5<sup>th</sup> /4<sup>th</sup> Street stations would also be needed. At the proposed 2<sup>nd</sup>/Hope Street station, a short connector roadway would be removed, but all existing traffic movements would still be possible via the remaining connector roadways. At the proposed Flower/5<sup>th</sup> /4<sup>th</sup> Street station, one traffic lane would need to be removed from Flower Street to accommodate station entrances along the sidewalk.

## 3.0 METHODOLOGY FOR IMPACT EVALUATION

This section describes the processes for identifying cultural resources, determining the significance of those resources, evaluating potential effects from construction and operation of the project, assessing potential permanent changes to historic properties and/or their contextual settings, and determining thresholds of significance that are applied to potential impacts. Section 4.0 describes the historic properties identified in the project area and their significance. Section 5.0 evaluates potential direct, indirect, and cumulative impacts to these resources from construction and operation.

### 3.1 Regulatory Framework and Standards of Significance

#### 3.1.1 Federal

A number of federal laws address the protection of historic and cultural resources. The analysis of potential effects to built environment resources are primarily guided by the National Environmental Policy Act of 1969; Section 106 of the National Historic Preservation Act of 1966, as amended; and Section 4(f) of the U.S. Department of Transportation Act (USDOT Act) of 1966.

##### 3.1.1.1 National Environmental Policy Act (NEPA)

The intent of NEPA is to protect the natural and built environment, including historic properties, from adverse effects resulting from federal actions. Before a federal agency may proceed with a proposed action, an environmental evaluation must be made to determine whether the action may have a significant effect on the environment. Effects on historic properties are usually assessed in coordination with the process established under Section 106 of the NHPA. The Section 106 process typically must be completed before an EIS can be finalized.

Under NEPA, historic and cultural resources generally include properties that are listed in or determined eligible for listing in the National Register. While NEPA does not provide specific definitions or criteria for determining the significance of historic properties, CEQA guidelines direct agencies to comply with Section 106 of the NHPA to be in compliance with NEPA.

NEPA requires federal agencies to evaluate the significance of potential project-related effects including both direct and tangible (e.g., demolition or alteration) and indirect effects (less tangible effects such as noise or visual). NEPA provides guidance for determining significance as a measure of impact intensity (Section 1508.27).

Intensity refers to the severity of impact. Decision-makers must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

- Impacts may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to expect a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources.
- Whether the action threatens a violation of federal, state, or local laws or requirements imposed for the protection of the environment.

### 3.1.1.2 National Historic Preservation Act (NHPA)

This report was completed under the provisions of NHPA Section 106 (36 CFR 800) in its applications for determining “effects,” or impacts, as described in Part 800.5(a)(1). Section 106 of the NHPA requires that federal agencies take into account effects on “historic properties” that may be caused by undertakings, and that the Advisory Council on Historic Preservation be afforded an opportunity to comment on those undertakings (16 USC 470a, 36 Code of Federal Regulations, CFR Part 800). Section 106 requires that historic properties be identified, that effects be analyzed, and if adverse effects would be expected, that appropriate mitigation be identified and implemented under a Memorandum of Agreement (MOA).

Cultural resources (or “historic properties” under NHPA) include any district, site, building, structure, or object that is included in or eligible for listing in the National Register (36 CFR Part 800.1).

Section 106 defines a historic property as:

Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR Part 800 Protection of Historic Properties, Section 800.16 Definitions[1]).

Properties of traditional religious and cultural importance— also referred to as Traditional Cultural Properties/Places, or TCPs)—to Native Americans are considered under Section 101(d)(6)(A) of the NHPA. TCPs can be National Register-eligible under any of the criteria, described in the following section.

### **National Register of Historic Places**

The National Register of Historic Places is the nation’s official list of districts, sites, buildings, structures, and objects worthy of preservation. The National Register currently includes approximately 80,000 listings, including icons of American architecture, engineering, culture, and history. Overseen by the National Park Service (NPS), under the Department of the Interior, the National Register was authorized under the NHPA, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by NPS.

For a property to be listed in or determined eligible for National Register listing, it must be demonstrated to have the quality of significance in American history, architecture, archaeology, engineering, and culture present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

- Be associated with events that have made a significant contribution to the broad patterns of our history;
- Be associated with the lives of persons significant in our past;
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in the National Park Service’s National Register guidance as the ability of a property to convey its significance. To be listed in the National Register, a property must not only be shown to be significant under the National Register criteria, but it also must retain integrity.

The National Register guidance asserts that properties be at least 50 years old to be considered for eligibility. Properties completed less than 50 years before they are evaluated must be “exceptionally important” (Criteria Consideration G) to be considered eligible for listing, or under certain circumstances they must be part of a historic district whose period of significance extends forward to a date less than 50 years ago.

Effects on historic properties under Section 106 of the NHPA are defined in the Assessment of Adverse Effects in 36 *CFR* Part 800.5(a) (1):

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Adverse effects on historic properties are defined as and include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the *Secretary's Standards for the Treatment of Historic Properties* (36 *CFR* Part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property’s use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 *CFR* Part 800.5(a) (2)).

To comply with Section 106, the criteria of adverse effect are applied to historic properties in the project Area of Potential Effects (APE), pursuant to 36 *CFR* Part 800.5 (a)(1). A finding of no adverse effect may be appropriate when the undertaking's effects do not meet the thresholds set forth in the criteria of adverse effect, or in certain cases when the undertaking is modified to avoid or lessen effects, or conditions are imposed to ensure review of rehabilitation plans for conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (codified in 36 *CFR* Part 68). If adverse effects findings are made, mitigation would be proposed and resolution of adverse effects occurs through consultation pursuant to 36 *CFR* Part 800.6(a) to avoid, minimize, or mitigate adverse effects on historic properties.

Historic properties in the APE are described in Section 4. Sections 5 and 7 present the analysis of potential effects on historic properties in the APE. Recommended mitigation to reduce adverse effects is described in Section 6.

### 3.1.1.3 U.S. Department of Transportation Act (USDOT), Section 4(f)

Section 4(f) (23 *CFR* 774) of the USDOT Act of 1966, as amended (49 USC 1653[f]), defines impacts of transportation agency projects as the “use” of certain types of resources, including “historical sites.”

USDOT agencies, including FTA, cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and historical sites (defined as listed in or determined eligible for listing in the National Register) unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use (FHWA 2009).

In the Federal Highway Administration (FHWA) guidance “What is Section 4(f)?” the regulations are described as applying to “any publicly or privately owned historic site listed or [determined] eligible for listing on the National Register” (FHWA 2009). The guidance defers

to the definitions of “historical sites” found in the NHPA and its National Register criteria for historic properties as described in Section 3.1.1.2.

Impacts to 4(f) properties, defined as “use” of the property, must be either avoided, minimized, or mitigated, in that order. FTA follows FHWA procedures for resolving “*de minimis*” impacts through recorded administrative decisions, and mitigating impacts through 4(f) procedures (FHWA 2009).

#### **3.1.1.4 Other Federal Regulations**

Other federal laws include the Archaeological Data Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1989, among others. Section 106 and NEPA procedures—particularly through involvement of Native American and other public constituents in the identification, evaluation, and mitigation processes—might address impact resolution through these other federal laws.

### **3.1.2 State**

#### **3.1.2.1 California Environmental Quality Act (CEQA)**

Concurrently with the federal process, the California Environmental Quality Act (*Public Resources Code or PRC*, Section 5024) requires evaluation of proposed projects that may cause significant effects on historical resources. Under CEQA, “historical resources” must be identified, expected impacts must be analyzed, and mitigation must be identified and implemented as above, where necessary. For CEQA conformance, historical resources include the built environment as well as “unique paleontological resources” or “unique geologic features.”

CEQA guidelines define a “historical resource” as:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register) PRC Section 5024.1, Title 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1 (g) of the Public Resources Code, shall be presumed to be historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered an historical resource, provided the

lead agency's determination is supported by substantial evidence in light of the whole record.

CEQA equates a “substantial adverse change” in the historic significance of a resource with a significant effect on the environment (PRC Section 21084.1). Thresholds of substantial adverse change are established in PRC Section 5020.1 as demolition, destruction, relocation, or “alteration activities that would impair the significance of the historic resource.”

If a project is expected to result in an effect on historic resources, CEQA guidelines require analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the most basic objectives of the project and avoid or substantially lessen any significant effects on the historical resource.

A proposed project that may affect historic resources is submitted to the SHPO for review and comment prior to project approval by the lead CEQA agency, and before any project-related clearance, demolition, or construction activities commence. If any CEQA impact conditions are met by the project's effects on historic properties, mitigation measures are recommended for avoidance, to minimize impacts, or to provide balanced compensation for adverse effects. See Sections 5.0 and 7.0 for an evaluation of project effects and impacts on those properties, and Section 6.0 for recommended mitigation measures.

### **3.1.2.2 California Register of Historical Resources (California Register)**

Under California PRC Section 5024.1, the California Register was established to serve as an authoritative guide to the state's significant historic and archaeological resources. A resource is considered historically significant if it meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1, Title 14 CCR, Section 4852). For a property to be considered eligible for listing in the California Register, it must be found to be significant under at least one of the following four criteria by the State Historical Resources Commission. If the resource:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history

In addition to possessing one of the above-listed characteristics, resources must retain “substantial” integrity to their period of significance to be eligible for listing in the California Register. The seven aspects or qualities of integrity are the same as those applied to National Register-eligible properties: location, design, setting, materials, workmanship, feeling, and association.

The California Register also includes properties that:

- Have been determined eligible for listing in, or are listed in the National Register.
- Are registered State Historical Landmark No. 770 and all consecutively numbered landmarks above Number 770 (see Section 3.1.2.3).
- Are points of historical interest that have been reviewed and recommended to the State Historical Resources Commission for listing (see Section 3.1.2.4).
- Are city- and county-designated landmarks or districts (see Section 3.1.3). Historic Districts are a concentration of historic buildings, structures, objects, or sites within precise boundaries that share a common historical, cultural or architectural background. Individual resources within an historic district may lack individual significance but be considered a contributor to the significance of the historic district.
- Are identified as significant in a historic resource survey and meet the following criteria:
  - 1) The survey has been or will be included in the State Historical Resources Inventory.
  - 2) The survey and the survey documentation were prepared in accordance with California Office of Historic Preservation (OHP) procedures and requirements.
  - 3) The resource is evaluated and determined by the office to have a significance rating of category “1 to 5” on California Department of Parks and Recreation (CDPR) series 523 form.
  - 4) If the survey is five or more years old at the time of its nomination for inclusion in the California Register, it is updated to identify historical resources that have become eligible or ineligible due to changed circumstances or further documentation and those that have been demolished or altered in a manner that substantially diminishes the significance of the resource (PRC Section 5024.1[g]).

### 3.1.2.3 California Historical Landmarks

Designated California Historical Landmarks (CHLs) are numbered sequentially as they are listed by the State Historical Resources Commission. CHLs numbered 770 and higher are

automatically listed in the California Register. According to PRC Section 5031 (a), to be eligible for California Historical Landmark designation, a property must be of “statewide historical importance” and must demonstrate its statewide significance by meeting one of the following three requirements:

- The property is the first, last, only, or most significant historical property of its type in the region. The regions are Southern California, Central California, and Northern California. If a property has lost its historic appearance (integrity), it may not be listed as a site.
- The property is associated with an individual or group having a profound influence on the history of California. The primary emphasis should be the place or places of achievement of an individual. Birthplace, death place, or place of interment shall not be a consideration unless something of historical importance is connected with his or her birth or death. If a property has lost its historic appearance (integrity), it may not be listed as a site.
- The property is a prototype of, or an outstanding example of, a period, style, architectural movement, or construction, or is one of the more notable works, or the best surviving work in a region, of a pioneer architect, designer, or master builder.

#### **3.1.2.4 California Points of Historical Interest**

California Points of Historical Interest include “sites, buildings, features, or events that are of local (city or county) significance and have an anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other value.”

Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. To be designated, a property must meet at least one of the following criteria:

- The first, last, only, or most significant of its type within the local geographic region (city or county);
- Associated with an individual or group having a profound influence on the history of the local area; or
- A prototype of, or an outstanding example of, a period, style, architectural movement, or construction, or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

### **3.2 Delineation of Area of Potential Effects**

The project-specific APE (Figures E-1 through E-9, Appendix E) was established through consultation between the lead federal agency, FTA, the lead CEQA agency, Metro, the SHPO,

and other consulting parties in accordance with 36 CFR 800.16(d). Section 106 defines an APE as:

the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

The project APE was delineated to ensure identification of significant cultural resources that may be directly or indirectly affected by the project, and are listed in or eligible for inclusion in the National and/or California Register. The APE was established using methodology consistent with those of previous Metro projects (Figures E-1 through E-9, Appendix E). The 1.9-mile-long APE consists of 213 Los Angeles County Office of the Assessor parcels, some of which are subdivided into multi-property entities.

The proposed project APE was determined by consensus between the undertaking's lead federal agency, FTA, and consulting parties, led by the SHPO. The California OHP defines the boundaries within which properties are identified and evaluated for their historic significance, and effects of the proposed project are analyzed. The project APE was approved on September 9, 2009. Correspondence between FTA and SHPO for this project is included in Appendix D.

For archaeological and paleontological resources, the proposed direct APE includes the proposed at-grade and underground right-of-way and/or areas of direct ground disturbance. The direct APE also includes areas with permanent site improvements and areas for staging and temporary construction activities. For much of the project alignment, the direct APE includes the full width of the street along which the alignment runs, as well as the adjacent sidewalks. The direct APE includes additional street segments and portions of adjacent city blocks in areas of proposed stations, connections with existing rail lines, alignments that deviate from existing streets, and staging areas.

To anticipate effects that may result by implementing both above-ground and subterranean construction and implementation, the proposed vertical APE extends from approximately the existing ground surface to 25 feet above the existing ground surface and approximately 100 feet below the existing ground surface.

### **3.3 Native American Coordination**

SWCA contacted the California Native American Heritage Commission (NAHC) by letter dated February 10, 2009, requesting a review of the Sacred Lands File and a list of appropriate Native American contacts for the project. The NAHC search of the Sacred Lands File

indicated the presence of Native American cultural resources in the project area. The NAHC also provided a list of five Native American contacts.

SWCA sent letters via U.S. mail to the five Native American contacts on April 16, 2009, requesting information regarding potential cultural resources that may be located within the project APE. These letters included location maps and a description of the proposed project and its related APE (Appendix B). A follow-up contact with each group was made via telephone on May 11, 2009, and subsequent follow-ups via telephone and/or email were made as necessary. Not all of the contacts responded.

One of the groups, the Gabrieleno/Tongva San Gabriel Band of Mission Indians, expressed dismay with Metro because the Band had never been contacted by anyone about the Metro Gold Line to East Los Angeles project, which was completed in November 2009. Tribal Chairperson Anthony Morales stated that he was concerned with the proposed project's proximity to the prehistoric village of Yangna and considers the project area highly sensitive for Native American resources and sacred places.

Mr. Morales further stated that he is aware that cultural resources, including human remains, have been uncovered during construction of various projects in the downtown area, and he wants Metro to know that his tribe has concerns.

A second tribe, the Tongva Ancestral Territorial Tribal Nation, responded via email that it objects to the proposed project and would like to prepare a detailed response, but has not received sufficient information to do so.

Metro is consulting with the Gabrieleno/Tongva San Gabriel Band of Mission Indians and Tongva Ancestral Territorial Tribal Nation should the project proceed. Details of SWCA's contacts with the Gabrieleno/Tongva San Gabriel Band of Mission Indians and Tongva Ancestral Territorial Tribal Nation are provided in Table 3-1.

**Table 3-1. Contacts with Native Americans**

Native American Contact	Letter Sent	Reply Date	Follow Ups	Results
Cindi Alvitre Ti'At Society 6515 E. Seaside Walk, #C Long Beach, CA 90803	4/16/09, via U.S. Priority Mail		5/11/09, message and email by Kip Harper (KH)	Left message. No further action necessary.
Robert Dorame Gabrielino Tongva Indians of California Tribal Council P.O. Box 490 Bellflower, CA 90707	4/16/09, via U.S. Priority Mail	5/11/09, telephone call from Mr. Dorame	5/11/09, telephone and email by KH	Mr. Dorame suggested that we look at historic maps/roadways. He said that he received the letter and would review the information and would respond via letter/email. He said that if we did not hear from him, then he had no response. SWCA re-sent the letter via email to facilitate his response. No response received. No further action necessary.
Sam Dunlap Gabrielino Tongva Nation P.O. Box 86908 Los Angeles, CA 90086	4/16/09, via U.S. Priority Mail		5/11/09, telephone and email by KH	Left message. No further action necessary.
Anthony Morales Gabrieleno/Tongva San Gabriel Band of Mission Indians P.O. Box 693 San Gabriel, CA 91778	4/16/09, via U.S. Priority Mail	4/17/09, telephone call from Mr. Morales	4/17/09, telephone by KH	On 4/17/09, Mr. Morales left a message stating that he wanted to talk about the project. On 4/17/09, K. Harper spoke to Mr. Morales about the proposed project. Mr. Morales expressed dismay that Metro had never contacted him about the Gold Line Extension project.  Mr. Morales stated that he is concerned with the Regional

**Table 3-1. Contacts with Native Americans**

Native American Contact	Letter Sent	Reply Date	Follow Ups	Results
				<p>Connector’s proximity to the village of Yangna. In addition, he stated that he considers the project area to be highly sensitive for Native American resources and sacred places considering that the project is located in the heart of the city. Mr. Morales said that he is aware that cultural resources have been uncovered during construction of pipelines in the downtown area, and that human remains were uncovered during construction of the Metropolitan Water District building.</p> <p>Mr. Morales wants Metro to know that a local tribe—the Gabrielino—has concerns.</p> <p>SWCA recommends that Metro consult with the Gabrielino/Tongva San Gabriel Band of Mission Indians.</p>
John Tommy Rosas Tongva Ancestral Territorial Tribal Nation (TATTN)	4/16/09, via email (Samantha Murray)	4/16/09, via email; 4/17/09 via email; 5/11/09 via email	4/17/09, email by KH  5/11/09, email by KH	<p>On 4/17/09, K. Harper responded to Mr. Rosas’ email stating that his comments were received.</p> <p>Mr. Rosas responded via email on 4/17/09. In his email, Mr. Rosas stated that he objects to the proposed project “on the grounds that it[']s a growth inducing negative impact under CEQA, on violations to our indigenous rights, and that the TATTN lands are ours and so the claimed land titles by project [owners] is defective and illegal.”</p>

**Table 3-1. Contacts with Native Americans**

Native American Contact	Letter Sent	Reply Date	Follow Ups	Results
				<p>On 4/17/09, Mr. Rosas also responded stating that he would send a more detailed response. No response was received.</p> <p>On 5/11/09, K. Harper emailed Mr. Rosas to follow up on his 4/17/09 response to facilitate his response. Mr. Rosas responded stating “Your information attachment-does not contain any environmental construction reports or details so we can continue our detailed response.” Mr. Rosas did not provide any consequential information regarding cultural resource in the project area.</p> <p>SWCA recommends that Metro consult with the TATTN.</p>

## 4.0 AFFECTED ENVIRONMENT

The project is located within the City of Los Angeles in Los Angeles County, California. Specifically, the direct APE extends in a northeasterly direction from the intersection of Flower and 7<sup>th</sup> Streets to the Gold Line at Alameda Street between 2<sup>nd</sup> and Temple Streets within downtown Los Angeles. The project crosses several communities of downtown Los Angeles, including the Bunker Hill, Historic Core, Civic Center, and Little Tokyo communities.

This area is highly urbanized, with development ranging from commercial to public and institutional uses. Most of the native vegetation has been removed and replaced by non-native trees and grasses. Elevations range from 250 to 270 feet (76 to 82 meters) above mean sea level. The nearest natural water source includes the now channelized course of the Los Angeles River, located approximately 0.72 miles (1.1 km) east of the project area.

The climate within the project area is typified by hot, dry summers with moderate winter precipitation. Summers are influenced by a high-pressure zone associated with descending dry air from the upper atmosphere. This persistent high pressure generally prevents rain-bearing storms from entering the area, keeping summers dry.

Summer temperatures can be hot, commonly reaching 80 or 90 degrees Fahrenheit (°F) and sometimes exceeding 100°F. Autumn brings the Santa Ana winds, which blow from the Mojave Desert westward toward the Pacific Ocean. Winter is generally characterized by alternating sporadic rainstorms with predominantly clear, sunny days (Schoenherr 1992).

### 4.1 Cultural Setting

#### 4.1.1 Prehistoric Overview

Numerous chronological sequences have been devised to help understand cultural changes within southern California. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is still widely used today and is applicable to near-coastal and many inland areas. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. Although Wallace's (1955) synthesis initially lacked chronological precision due to a paucity of absolute dates (Moratto 1984), this situation has been alleviated by the availability of thousands of radiocarbon dates that have been obtained by southern California researchers in the last three decades (Byrd and Raab 2007).

Several revisions have been made to Wallace's (1955) synthesis using radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Mason and Peterson 1994; Koerper et al. 2002). The summary of prehistoric chronological sequences for southern California coastal and near-coastal areas presented in this memorandum is a composite of

information in Wallace (1955) and Warren (1968) as well as more recent studies, including Koerper and Drover (1983).

#### **4.1.1.1 Horizon I – Early Man (ca. 10,000–6,000 B.C.)**

When Wallace defined the Horizon I (Early Man) period in the mid-1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C.

Archaeological work in the intervening years has identified numerous pre-8000 B.C. sites, both on the mainland coast and the Channel Islands (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984; Rick et al. 2001).

The earliest accepted dates for occupation are from two of the northern Channel Islands, located off the coast of Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002). Present-day Orange and San Diego Counties contain several sites dating to 9,000 to 10,000 years ago (Byrd and Raab 2007; Macko, 1998a; Mason and Peterson 1994; Sawyer and Koerper 2006).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones, et al. 2002) and on Pleistocene lake shores in eastern San Diego County (Moratto 1984). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Dillon 2002; Erlandson, et al. 1987), it is generally thought that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many sites from this period include, for example, leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Wallace 1978).

Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal climatic regime, a warm and dry period that lasted for about 3,000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

#### **4.1.1.2 Horizon II – Milling Stone (6000–3000 B.C.)**

The Milling Stone Horizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000 to 3000 B.C.) are characterized by subsistence strategies centered on collecting plant foods and small animals. Food procurement activities included hunting small and large terrestrial mammals, sea mammals, and birds; collecting shellfish and other shore species; near-shore fishing with barbs or gorges; processing yucca and agave; and extensively using seed and plant products (Kowta 1969; Reinman 1964).