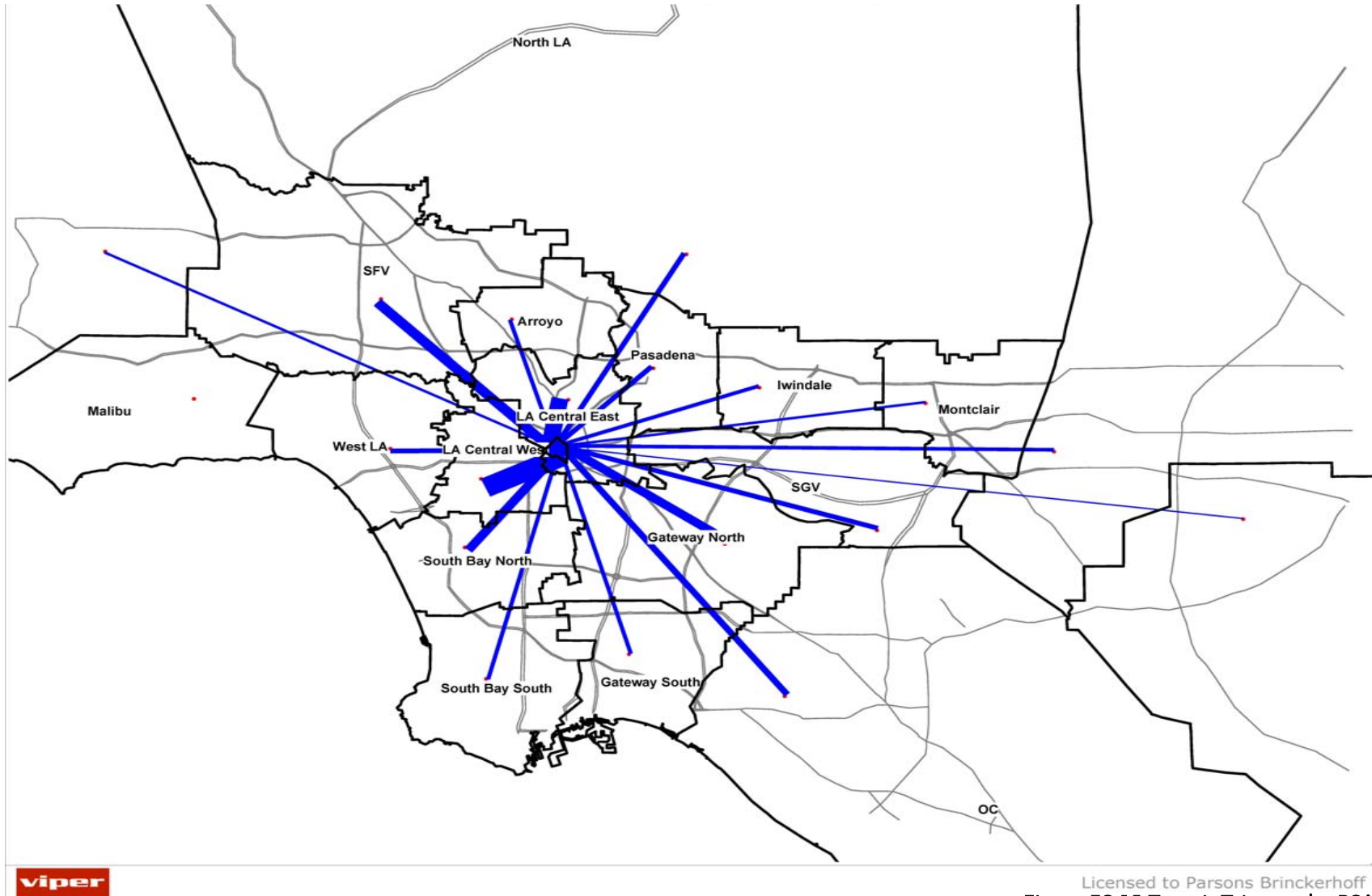
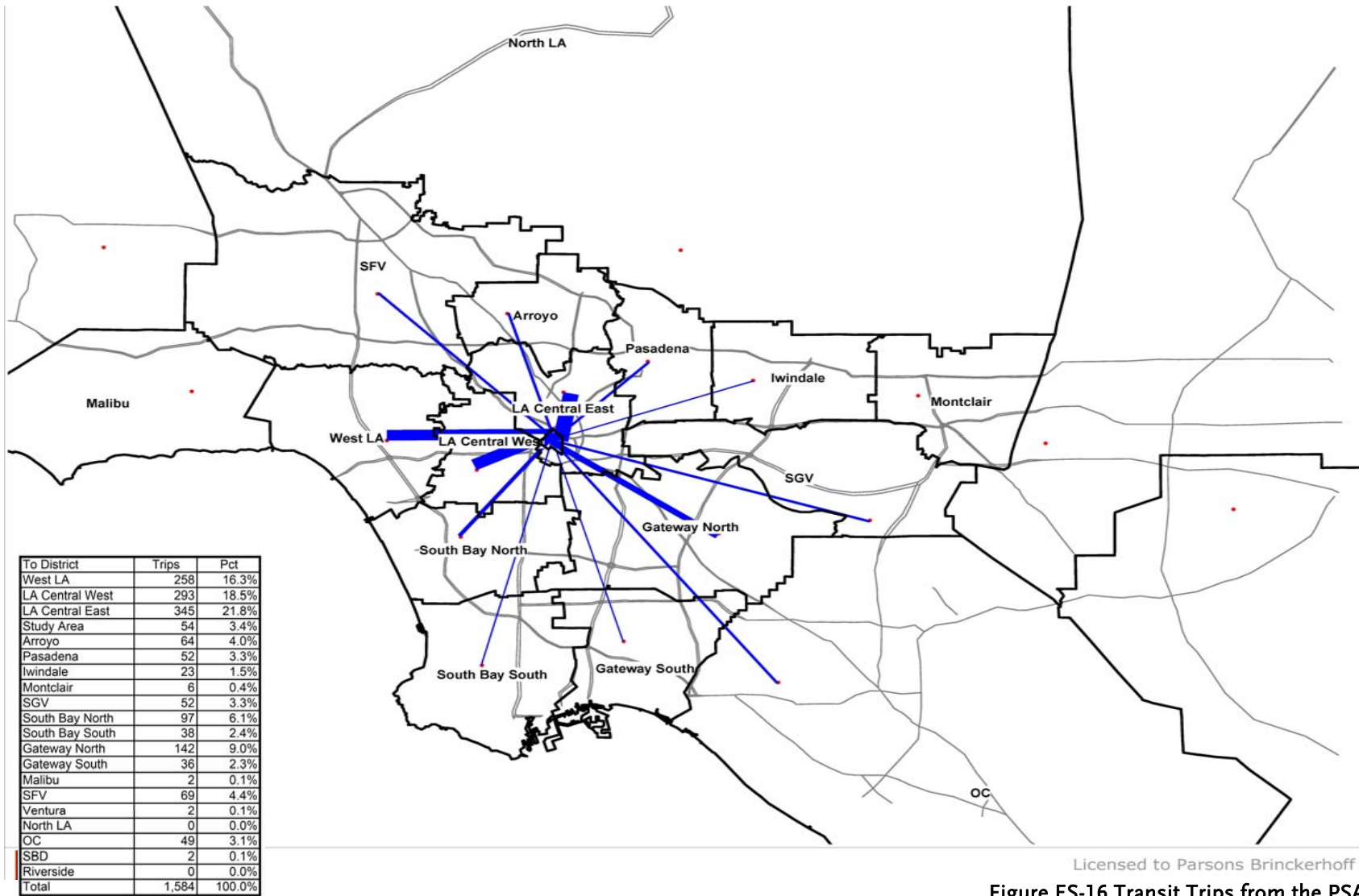


Year 2006 Home Based Work Transit Trips
From Outside Districts to the Regional Connector Study Area



Licensed to Parsons Brinckerhoff
Figure ES-15 Transit Trips to the PSA



Licensed to Parsons Brinckerhoff

Figure ES-16 Transit Trips from the PSA

Transit-Supportive Land Uses and Activity Centers

In light of the special constraints on roadway expansion and high traffic volumes in the downtown area, several planning entities have included transit-supportive language and projects in their published guidelines and planning documents. The County of Los Angeles, for example, seeks to encourage a range of transportation services for transit dependent populations, support the linking of regional transportation systems, and expand transportation options throughout the county. The Community Redevelopment Agency of the City of Los Angeles (CRA) publishes a set of Downtown Design Guidelines, which call for accessible transportation with an emphasis on walking, biking, and transit, rather than automobiles.

The potential transit markets for the Regional Connector are two-fold: passengers bound for downtown Los Angeles and passengers traveling through downtown Los Angeles on the way to other destinations. As mentioned in previous sections, the project will provide a continuous, transfer-free connection between over 50 miles of light rail lines spanning much of Los Angeles County. In addition, there are many activity centers and major destinations within the PSA that will be more easily accessible from the new Regional Connector stations. Downtown Los Angeles is a primary destination for employment, services, entertainment, and increasingly, housing. The Downtown Center Business Improvement District, which comprises a larger area of the downtown than the PSA, expects 10,000 new residents to move downtown between 2006 and 2009. The continued growth and revitalization of downtown Los Angeles will generate new transit trips both to and within the PSA, heightening the need for increased transit capacity and more efficient operations. Figure ES-17 shows the locations of ongoing development projects in the PSA, all of which will contribute to the activity levels in downtown Los Angeles and heighten the need for additional transit capacity. The figure also provides a photographic representation of the densest areas of downtown Los Angeles.

Major development is expected in the Bunker Hill area, where the proposed Grand Avenue Project will add 3.6 million square feet of new construction, including 449,000 sq. ft. of retail and 2,600 new housing units, nearly doubling the existing total. Similarly, the number of planned and recently completed housing units exceeds 2,000 in Little Tokyo, and planning for new housing is underway at the proposed terminus of the Regional Connector near the Little Tokyo/Arts District Station. The Financial Core is also expected to generate a large number of new trips within the next several years as two projects, Metropolis and Park Fifth, add over 1,000 new residential units and 200 hotel rooms to the PSA. Just south of the PSA, near the Pico Station, the four million square foot entertainment, office, and residential complex, LA Live, will serve as a major attraction that could generate many through-trips on the Regional Connector.

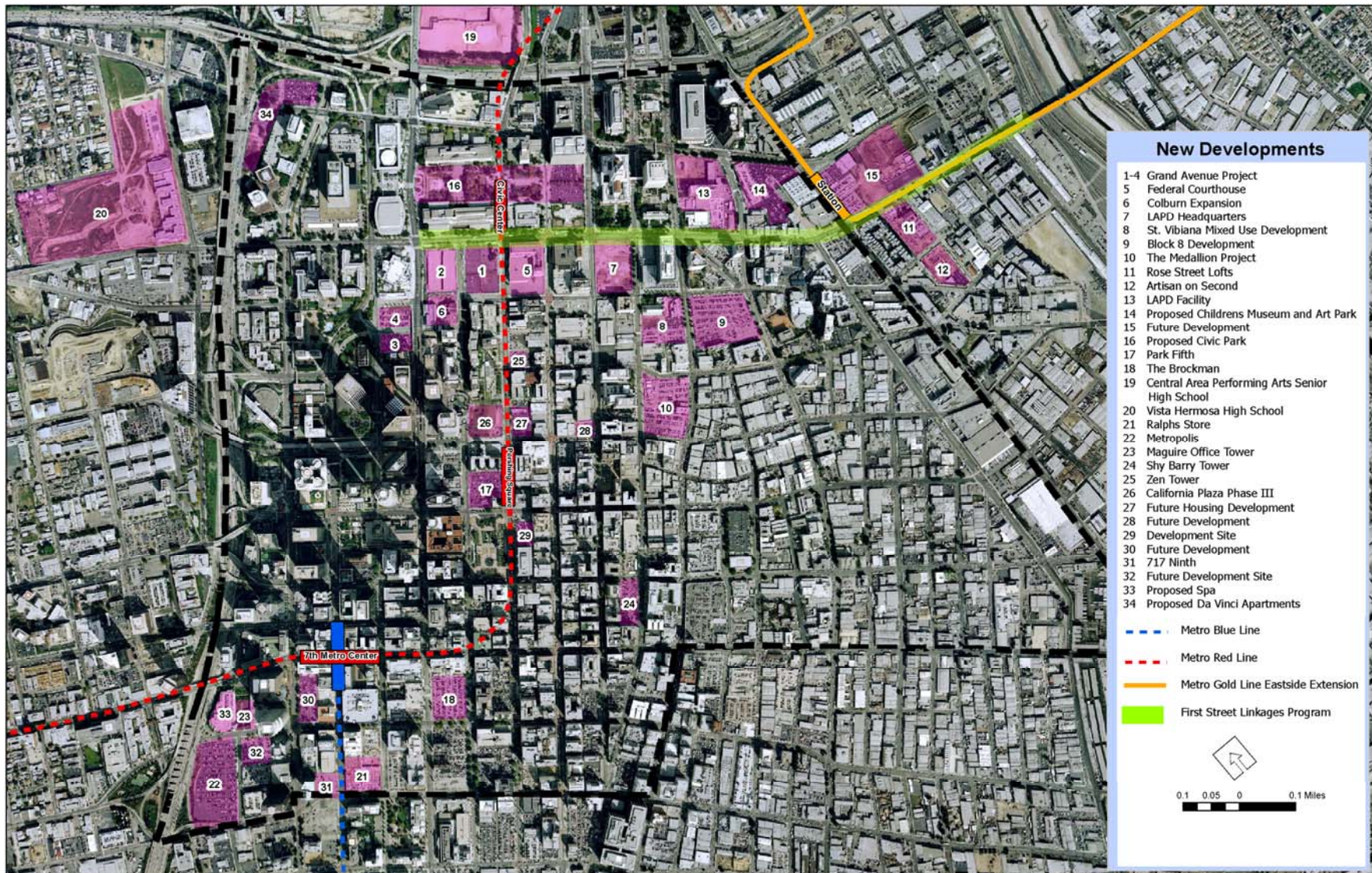


Figure ES-17 New Developments in the PSA

Conclusion

Seamlessly linking all of Metro's light rail lines together will allow for shorter trip times, fewer transfers, better schedule adherence, and more reliable service. All of these benefits are key factors that will improve the transit system's ability to attract high ridership. Los Angeles County has invested over \$10 billion in its regional rail system over the past two decades, and the Regional Connector would significantly enhance that investment by improving the operations of the existing system, enabling the system to better accommodate future extensions, and making rail transit more convenient and attractive to potential users. By improving the operation of the entire rail system, the Regional Connector will lure solo drivers from their cars, reduce burdensome passenger loads on the bus network, and improve access to Los Angeles' growing downtown area. In turn, lighter traffic loads on the region's roadways would improve air quality, reduce greenhouse gas emissions, reduce fuel consumption, and represent a step toward a more sustainable transportation system.

ES.5 Community Input Process

In order to ensure that the public was kept informed about the AA study on an ongoing basis and provided with opportunities to comment at key milestones, a detailed Community Outreach and Public Involvement Plan was developed. The Plan included detailed stakeholder identification, communications protocols, public input tracking, a proposed schedule for interfacing with the public and recommendations for how meetings should be conducted at various stages of the study. Additional recommendations for key stakeholder interviews or briefings, inter-agency coordination, topic-specific and other meetings were also included in the Plan. It is important to note that while plans are important, outreach activities, especially on complex projects, were developed to be flexible enough to accommodate changing circumstances and enhanced approaches. Details of this and other outreach efforts can be found in the Community Participation Summary and Report prepared in November 2008.

A series of three public meetings were held respectively in November 2007, February 2008, and October 2008 as part of the ongoing community outreach and public involvement process. The overwhelming majority of comments received supported the need for a Regional Connector to enhance the efficiency of the current and future rail system by providing through service between the Metro Blue Line, Gold Line, Gold Line Eastside Extension and Expo Line, and service to link these rail corridors directly to Union Station. Most comments supported almost equally a Grand Avenue and 1st St. alignment, below-grade (i.e., subway), and utilizing Light Rail Transit (LRT) technology. Several potential stations received wide popularity, including, in order of their level of support, Little Tokyo, 7th St./Metro Center, Bunker Hill, Union Station, Main/1st St. and Civic Center (i.e., in the northern portion of the PSA). No comments were received opposing the Regional Connector, though a few remarks noted that other transit projects may need to receive a higher priority. Many comments specifically pointed out the need to develop a transit system that connects multiple lines, expand the 7th St./Metro Center Station to accommodate enhanced service, and upgrade various operational systems. Of those providing feedback about the evaluation criteria, most thought that access was paramount.

After the initial scoping meetings, a set of two community update meetings was held to present stakeholders with the results of the early scoping process. The majority of those who submitted comments supported a below-grade alignment. There was very little support for an at-grade alignment, particularly in the financial district. There were no concerns expressed about noise and vibration regarding tunneling through downtown Los Angeles. The community expressed interest in identifying ways to minimize transfers between the transit lines, and improved connections to the Metro Red Line.

ES.6 Alternatives Identification and Evaluation Methodology

At the outset of the AA process, Metro considered a wide range of possible modes and alignments to close the gap in the light rail system through downtown Los Angeles. The evaluation and screening process used to compare alternatives is shown in Table ES-8 and described briefly in this section.

At the start of this AA, an initial set of conceptual alternatives to be considered for the Regional Connector was developed by researching previous studies and related reports. Alternatives no longer viable due to changes in the environment were removed from further consideration. Changes in the environment included, but were not limited to, new developments of property previously vacant during the development of an earlier report, changes in land use, and placement of new infrastructure. The initial set of conceptual alternatives was then studied with respect to the following attributes:

- Modes
- Alignments
- Configurations
- Station Locations

Table ES-7 provides a graphic representation of some of the widely-used transit modes and configurations that were considered for the Regional Connector.

During the AA study phase, the project has undergone extensive research and analysis in developing alternatives. This process included:

- Consideration of alternatives previously studied during the 1990's as part of the Los Angeles County Metropolitan Transportation Commission's and Metro's Pasadena Blue Line Project
- Comments received from community involvement activities, including meetings with stakeholders, public agencies, local jurisdiction, and the public during the Initial Scoping phase

- Analysis of the engineering and geographic constraints of building new infrastructure in a dense central business district
- Surveys of land use and travel patterns to determine the most ideal routes and station locations
- Analysis of each alternative's ability to enhance connectivity and reduce transfers within the existing rail system

Based on these attributes, 32 initial conceptual alternatives were identified that would link the 7th St./Metro Center Station and the Metro Gold Line at 1st and Alameda St. (Figure ES-18).

An early scoping process was completed where both the general public and public agencies were engaged and provided input. During this process, goals, objectives and evaluation criteria were developed and documented in the Alternatives Analysis Methodology Report (May 2008). From the early scoping process the following seven goals were established:

Goal 1 Improve Mobility and Accessibility both Locally and Regionally

Develop an efficient and sustainable level of mobility within Los Angeles County to accommodate planned growth and a livable environment.

Goal 2 Provide a Cost Effective Transportation System

Develop a project that provides sufficient regional benefits to justify the investment.

Goal 3 Provide a Safe and Secure Alternative Transportation System

Develop a project that is safe for riders, pedestrians and drivers while meeting the region's need for security.

Goal 4 Achieve a Financially Feasible Project

Develop a project that maximizes opportunity for funding and financing that is financially sustainable.

Goal 5 – Support Public Involvement and Community Preservation

Incorporate the public in the planning process and balance the benefits and impacts while preserving communities in the area, such as Little Tokyo, the Arts District, Bunker Hill, Civic Center and the Historic District.

Goal 6 Support Efforts to Improve Environmental Quality

Develop a project that minimizes environmental impacts.

Goal 7 – Support Community Planning Efforts

Support the progression of the regional center area as an integrated destination and a dynamic and livable area accommodating projected growth in a sustainable manner.

Table ES-7 Modes Considered

Bus

Traditional bus service operates in mixed flow traffic on freeways and arterial streets. Bus service is flexible, easily changed, and has the ability to detour around road obstacles. Service reliability depends heavily on traffic conditions.



Bus Rapid Transit (BRT)

BRT uses buses in exclusive right-of-way or bus-only lanes with traffic signal priority. Exclusive right-of-way could be configured at-grade, underground, or on aerial structures. Buses have the flexibility to leave their right-of-way and detour around road obstacles. Because of the limited use of mixed flow lanes, BRT service quality is less affected by traffic conditions than traditional bus service.



A BRT bus (Metro Orange Line) operating on dedicated right-of-way in an at-grade configuration

Light Rail Transit (LRT)

LRT uses electric trains on conventional rails, powered by overhead wires. Because the power delivery system is overhead, tracks can be installed in mixed flow lanes, exclusive right-of-way with grade crossings, or roadway medians. Automobiles can drive across or along the tracks at grade crossings and on street-running segments. Right-of-way can be at-grade, aerial, or underground. Trains do not have the flexibility to detour around obstacles, and such incidents typically require single tracking and service interruptions. Because of the limited use of mixed flow lanes, LRT service is typically affected little by traffic conditions.



LRT train (Metro Gold Line) operating in an at-grade configuration

Heavy Rail Transit (HRT)

HRT uses electric trains on conventional rails, powered by a third rail. Because the power delivery system is located at track level, tracks can only run in exclusive right-of-way without grade crossings.

Automobiles cannot cross the tracks at all. Right-of-way can be at-grade, aerial, or underground, but at-grade alignments require cross-traffic to use overpasses and underpasses. Trains do not have the flexibility to detour around obstacles, and such incidents typically require single tracking and service interruptions. HRT does not use mixed flow lanes, and service is unaffected by roadway traffic conditions.



HRT train (Purple Line above) operating in an underground configuration

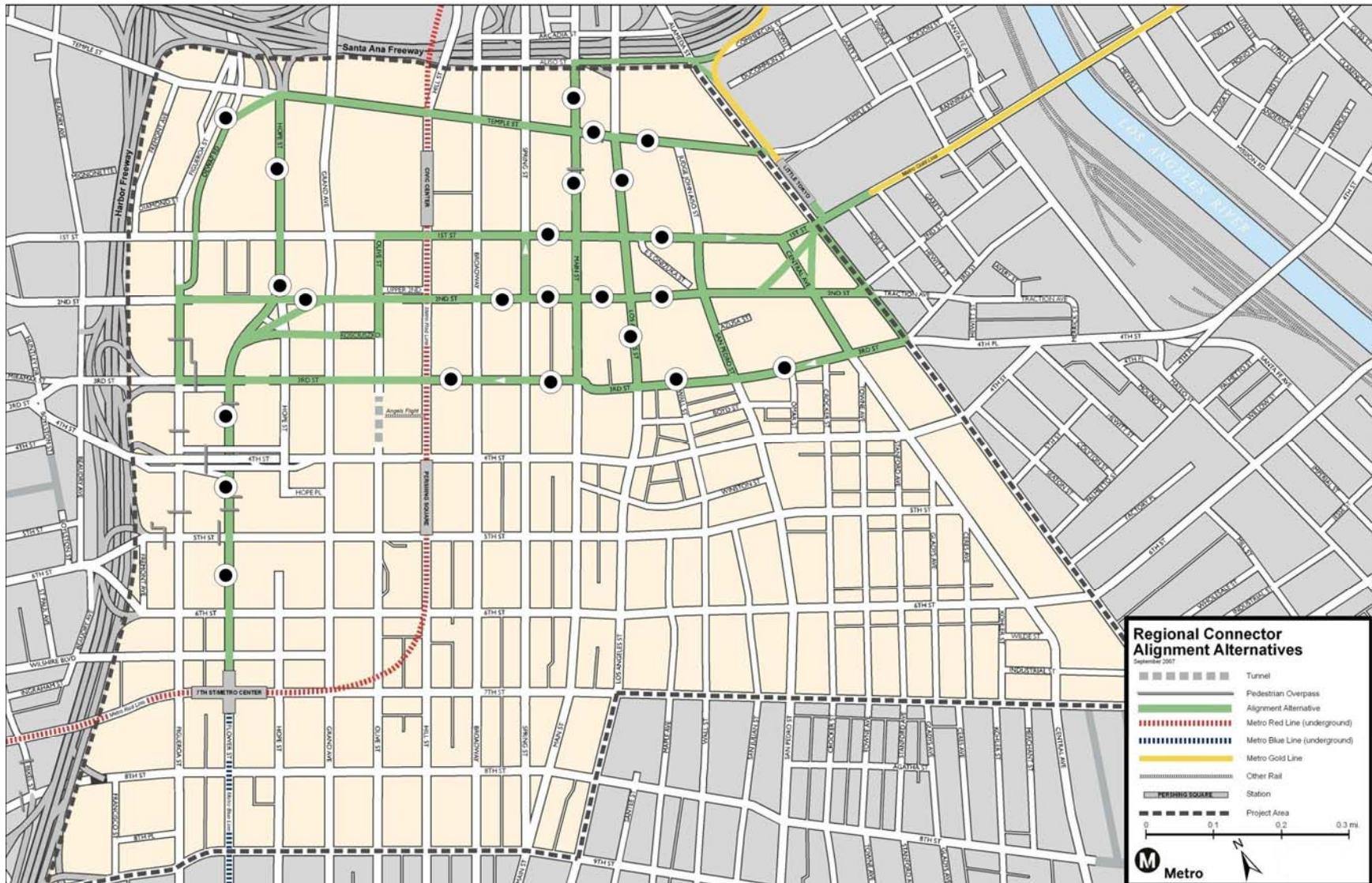


Figure ES-18 Universe of Alternatives Considered

A detailed summary of each of the sub criteria for each of the seven goals is provided in Table ES-8.

The initial set of alternatives was further refined according to the criteria in Table ES-8, and a set of alternatives identified for additional screening was developed. Some of the initial alternatives were developed in 2004 or earlier, and they assumed the use of several then-vacant parcels which now contain new construction or planned developments. These alternatives, along with others where engineering feasibility would have been problematic, were subsequently reconfigured or dropped from consideration. Altogether, a total of eight alternatives were identified with some alternatives having minor variations, as shown in Figure ES-19.

Using the evaluation criteria developed to measure how well each alternative met the goals and objectives for the Regional Connector, the eight alternatives were compared to one another and a final two alternatives, including one alternative having a variation in one station location, were identified. The evaluation took into account level of urban fit, amount of the population served, community acceptability, jobs within a one-quarter mile radius, opportunities for transit-oriented design, number of connections to key activity centers, and other factors pertaining to potential transit benefits. The Initial Screening Report details the routes and configurations of the eight alternatives from which the final two were selected.

ES.7 Alternative Recommendations

Two build alternatives (one with two options) are studied in this AA Report, along with a No Build Alternative and a Transportation System Management (TSM) Alternative, both of which are required by the Federal Transit Administration as part of the New Starts application.

No Build

The No Build Alternative would maintain existing transit service through the year 2030. No new infrastructure would be built, aside from projects currently under construction or identified in Metro's 2008 Long Range Transportation Plan. The rail infrastructure serving the PSA under this alternative is:

- The existing Metro Gold Line from Union Station to Pasadena, a 13.6-mile light rail transit line along the northeastern edge of the PSA.
- The Metro Gold Line Eastside Extension Phase 1 from Union Station to East Los Angeles, a six-mile LRT line scheduled for completion in late 2009.
- The existing Metro Blue Line from 7th St./Metro Center Station to Long Beach, a 22-mile LRT line travelling south from the PSA.
- The Metro Expo Line Phase 1, an 8.5-mile LRT line scheduled to open in 2010, running from 7th St./Metro Center Station to Washington and National Blvds. in Culver City.

Table ES-8 Regional Connector Goals, Objectives, Evaluation Criteria and Performance Measures

	Goal	Objectives	Initial Screening Criteria (Performance Measures)	Final Screening Criteria (Performance Measures)
1	<p>Support Community Planning Efforts</p> <p><i>Support the progression of the regional center area as an integrated destination and a dynamic and livable area accommodating projected growth in a sustainable manner</i></p>	<ul style="list-style-type: none"> • Support land use policies and Community Plans • Support and coordinate with development and redevelopment efforts • Support the City's effort to improve urban <i>design</i> and the pedestrian environment by contributing to a healthy environment • Support efforts to improve safety and <i>security</i> for downtown residents, employees and visitors • Support transit dependent communities 	<ul style="list-style-type: none"> • Population, Population Density, Households, Household Density for year 2030 ¼ mile of alignment • Transit Oriented Design supportive plans and policies in place (Score 1 - worst to 5 -best) • Number of jobs, employment density for year 2030 within a ¼ mile of alignment • Number of direct connections to key activity centers within ¼ mile of alignment (Score 1 -worst to 5 -best) • Number of opportunities for redevelopment within ¼ mile of alignment (underdeveloped or underutilized properties along alternative alignment) 	<ul style="list-style-type: none"> • Number of planned development projects in the area over the next 10 years, including residential/office space/commercial units within a 1/4 mile of stations • Number of connections with sidewalks that support the City's Downtown Street Standards
2	<p>Support Public Involvement and Community Preservation</p>	<ul style="list-style-type: none"> • Balance the benefits and impacts to low income and minority communities 	<ul style="list-style-type: none"> • Evaluation of potential disproportionate effects: Environmental justice effects will be evaluated per CEQA/NEPA requirements (Score 1 to 5) 	<ul style="list-style-type: none"> • Number of potential acquisitions

Table ES-8 Regional Connector Goals, Objectives, Evaluation Criteria and Performance Measures

Goal	Objectives	Initial Screening Criteria (Performance Measures)	Final Screening Criteria (Performance Measures)
<p><i>Incorporate the public in the planning process and balance the benefits and impacts while preserving communities in the area, such as Little Tokyo/Arts District, Bunker Hill, Civic</i></p>	<ul style="list-style-type: none"> • Enable workers and visitors to gain access to the regional center to increase its economic vitality and benefit from its economic opportunity 	<ul style="list-style-type: none"> • Initial areas identified for potential acquisitions for stations and alignment (does not include actually in construction) within ¼ mile of alignment • Evaluation of potential disproportionate effects: Number of low income HH within ¼ mile of proposed alignment • Number of residents by ethnicity within ¼ mile of alignment (US Census) • Urban fit potential for alignment and for stations, including physical scale, visual fit, and cultural preservation (Score 1 to 5) • Percentage of service grade separated • Community Acceptance (High, Medium, Low) 	<ul style="list-style-type: none"> • Percentage of service grade separated • Evaluation of potential disproportionate effects and risk to environmental justice populations related to construction activities (Score 1 to 5) • Urban fit potential, including pedestrian accessibility and urban design enhancement opportunities (Score 1 to 5)
<p>3 Improve Mobility and Accessibility both Locally and Regionally</p> <p><i>Develop an efficient and sustainable level of mobility within LA County to accommodate planned growth and a livable environment</i></p>	<ul style="list-style-type: none"> • Improve the connectivity of the regional transit service and provide a more attractive travel alternative for residents, workers and visitors in the region • Facilitate sustainable regional development 	<ul style="list-style-type: none"> • Increase in daily transit boardings (amount of transit users increased compared to No Build) • New daily transit trips compared to No Build and Transportation System Management (TSM) alternatives 	<ul style="list-style-type: none"> • Hours of transportation user benefits • Congestion relief (Reduction in highway travel demand in the corridor)

Table ES-8 Regional Connector Goals, Objectives, Evaluation Criteria and Performance Measures

Goal	Objectives	Initial Screening Criteria (Performance Measures)	Final Screening Criteria (Performance Measures)
	<ul style="list-style-type: none"> • Increase ridership of the Metro transit system and reduce single occupancy <i>trips</i> • Maintain or enhance transit services to the transit dependent • Improve travel time for transit users system-wide • Improve person throughput • Reduce <i>growth</i> of congestion in corridor 	<ul style="list-style-type: none"> • <i>Traffic impacts (Number of intersections with E or F Level of Service)</i> • <i>Reduction in number of transfers system-wide by operational plan of alignment (daily reductions at US & 7th/Metro)</i> • <i>Total number of lanes reduced (cumulative for all streets)</i> • <i>Number of potentially impacted intersections</i> • <i>Peak period travel time through Regional Connector Alignment (including 5 min for each transfer)</i> • <i>Number of left turn pockets affected</i> • <i>Number of parking spaces potentially affected</i> • <i>Number of driveways affected</i> • <i>Daily hours of transportation user benefits (Compared to No Build)</i> 	<ul style="list-style-type: none"> • <i>Comparison of highway, bus, and fixed guideway peak period travel times between major travel pairs (Run times, head ways, average speed, station spacing)</i> • <i>Peak period travel time (door to door)</i> • <i>Travel time savings (Union Station to 7th/Flower)</i> • <i>Reduction in Vehicle Miles Traveled (VMT) (VMT compared to No Build)</i> • <i>Assessment of expandability (Score 1 to 5)</i>
<p>4 Support Efforts to Improve Environmental Quality</p> <p><i>Minimize adverse environmental impacts</i></p>	<ul style="list-style-type: none"> • Minimize <i>adverse</i> environmental impacts • Implement mitigation measures to reduce <i>environmental</i> effects to acceptable levels • Reduce <i>emissions</i> and improve air quality 	<ul style="list-style-type: none"> • <i>Noise (Number of curves for LRT alignment)</i> • <i>Potential visual impacts to notable architectural resources within ¼ mile of alignment (Score 1 to 5)</i> • <i>Number of Potential Sensitive Receptors within ¼ mile of alignment (Score 1 to 5)</i> 	<ul style="list-style-type: none"> • <i>Expected level of impacts after mitigation to biological, social, and physical resources will be evaluated per CEQA/NEPA requirements (Score 1 to 5)</i> • <i>Reductions in PM10, NOx, and SOx emissions</i> • <i>Reduction in carbon footprint for average user</i>

Table ES-8 Regional Connector Goals, Objectives, Evaluation Criteria and Performance Measures

Goal	Objectives	Initial Screening Criteria (Performance Measures)	Final Screening Criteria (Performance Measures)
		<ul style="list-style-type: none"> • Potential impacts to historically significant locations within ¼ mile alignment (Score 1 to 5) • Geologic and geotechnical issues along alignment (Score 1 to 5) 	
<p>5 Provide a Cost Effective Alternative Transportation System</p> <p><i>Develop a system that serves as an alternative to travel economically</i></p>	<ul style="list-style-type: none"> • Increase ridership on the Metro system • Minimize cost per passenger • Maximize travel time savings 	<ul style="list-style-type: none"> • Rough order of magnitude annual O&M (2008\$) costs per alignment (millions) • User cost - Cost effectiveness compared to No Build (\$/hour of transit user benefit) • Annual O&M costs 	<ul style="list-style-type: none"> • Annualized cost per hour of transit system user benefit compared to No Build and Transportation System Management (TSM) alternatives
<p>6 Achieve a Financially Feasible Project</p> <p><i>Develop a project that maximizes opportunities for funding and financing and that is financially sustainable</i></p>	<ul style="list-style-type: none"> • Opportunities for private/public funding • Opportunities for Federal and outside funding 	<ul style="list-style-type: none"> • ROM Capital costs — total and per mile per alignment (2008\$) (millions) • Evaluation of availability and eligibility of capital funds at federal/state/local levels to construct, operate and maintain (Score 1 to 5) 	<ul style="list-style-type: none"> • Capital cost estimate disaggregated by right of way (ROW), guideway, stations, yards, and vehicles on a cost per mile basis
<p>7 Provide a Safe and Secure Alternative Transportation System</p>	<ul style="list-style-type: none"> • Secure entire alignment, stations, track and other facilities 	<ul style="list-style-type: none"> • Safety – determined to be able to provide measures typical of requirements per ADA, per typical CPUC requirements, fire life safety guidelines, and per Metro Design Guidelines for access to and from stations (amount grade separated) (Score 1 to 5) 	<ul style="list-style-type: none"> • Number of crossing with high pedestrian activities on a daily basis

Table ES-8 Regional Connector Goals, Objectives, Evaluation Criteria and Performance Measures

Goal	Objectives	Initial Screening Criteria (Performance Measures)	Final Screening Criteria (Performance Measures)
<p><i>Develop a project that is safe for riders, pedestrians, and drivers while meeting the regions needs for security</i></p>	<ul style="list-style-type: none"> • Develop direct and indirect safety measures that exceed safety precautions typical of the Metro system • Develop a system that balances the need for accessibility and mobility with security • Develop a system that uses accessibility and mobility as measures for safety and security 	<ul style="list-style-type: none"> • <i>Number of emergency facilities located within ¼ mile of the alignment, i.e., fire stations, police stations, hospitals.</i> • <i>Number of public events within ¼ mile of alignment</i> 	<ul style="list-style-type: none"> • <i>Number of events along the alignment</i> • <i>Number of potential issues related to accessibility and line of sight for pedestrians and vehicle drivers (Score 1 to 5)</i>

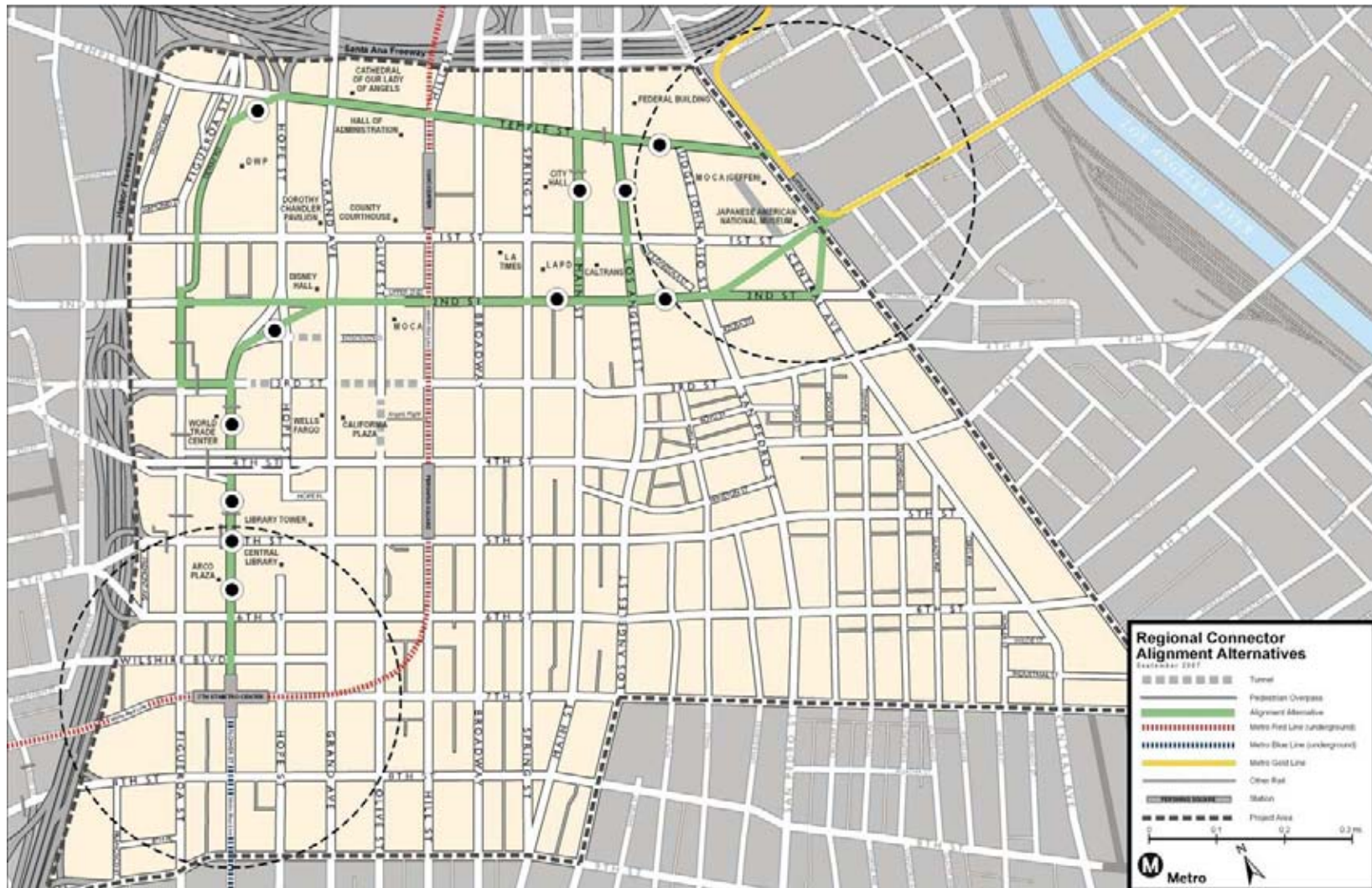


Figure ES-19 Screened Alternatives

- The existing Metro Red Line from Union Station to North Hollywood and the Metro Purple Line from Union Station to Wilshire/Western Station. Together, these routes comprise a 17.4-mile underground HRT system that presently serves as the sole rail connection between Union Station and 7th St./Metro Center Station. LRT trains are not able to operate on HRT tracks, so the Metro Red and Purple Lines are not suitable for carrying Metro Blue, Gold, or Expo Line trains.
- The 20-mile Metro Green Line runs from Norwalk in southeast Los Angeles County to Redondo Beach, primarily in the center median of the I-105 freeway.

TSM

The TSM Alternative would include the provisions of the No Build Alternative and add two shuttle bus routes to simulate the proposed LRT link between 7th St./Metro Center and Union Station, one along Grand Ave. and 1st St., and one along Figueroa, Flower, 2nd, and 3rd Streets. The shuttle buses would use existing bus-only lanes where available, and would be fitted with transit-priority signalization devices similar to those used on Metro Rapid. The following map, Figure ES-20, shows the two routes. Stops would be located every few blocks so as to provide access to all major destinations along the routes.

Based on analysis of the proposed alternatives and the Regional Connector PSA demographic data during the initial screening process, the list of 32 conceptual build alternatives was narrowed to two preferred build alternatives linking the Metro Gold Line on Alameda between 1st and Commercial Streets to the Metro Blue and Expo Lines' terminus at 7th St./Metro Center Station (Flower and 7th Streets). These build alternatives are described below.

At-Grade Emphasis LRT Alternative

The At-Grade Emphasis LRT Alternative would bridge the gap between the Metro Gold Line and the Metro Blue and Expo Lines using an a combination of at-grade and underground tracks along Temple, Main, Los Angeles, 2nd, and Flower Streets. The route is shown in Figure ES-21.

The new tracks would branch off of the Metro Gold Line Eastside Extension at Temple and Alameda Streets in a wye junction. At this location, a new vehicular underpass for through traffic on Alameda St. would be constructed to remove conflicts between trains and the high volumes of truck and automobile traffic frequently observed at this intersection. A new pedestrian bridge structure over the intersection would also reduce the conflicts between pedestrian and trains, and reduce delays for trains passing through the intersection.

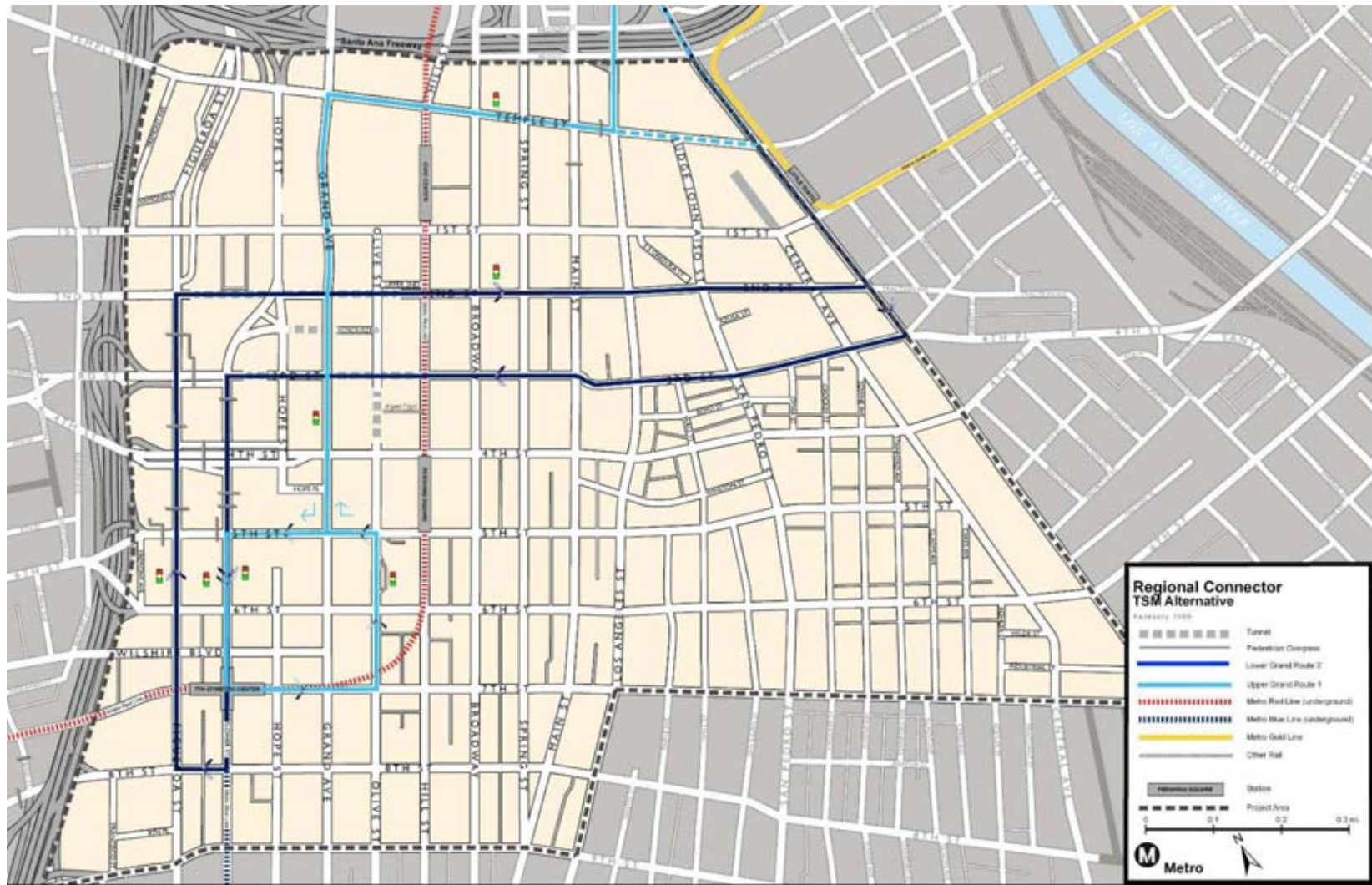


Figure ES-20 Transportation System Management Alternative

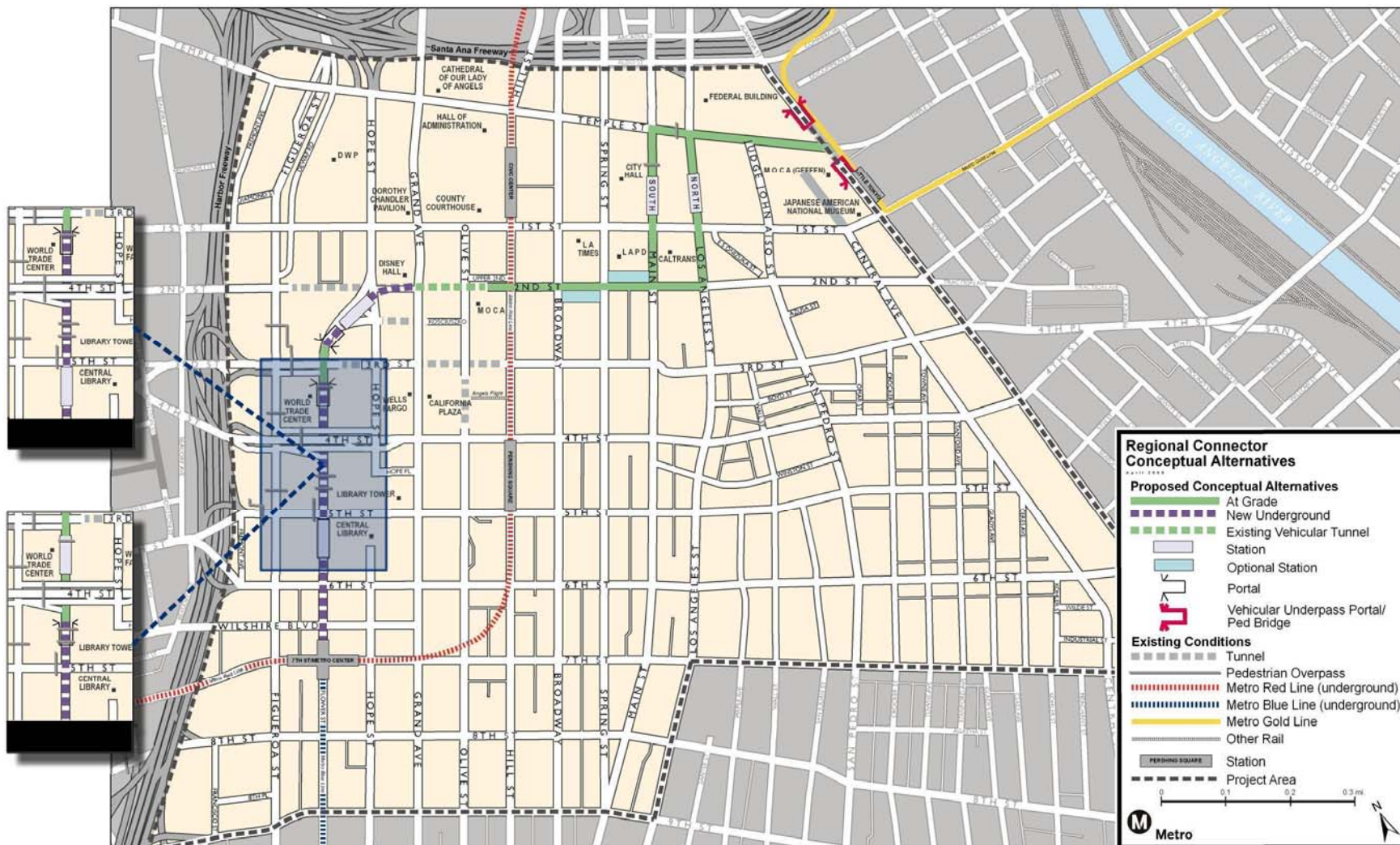


Figure ES-21 At-Grade Emphasis LRT Alternative



Looking Southeast at Temple and Alameda – Before



Looking Southeast at Temple and Alameda – After

The tracks would then continue west on Temple St. to Los Angeles St. Here, the tracks would split into a couplet on Main and Los Angeles Streets in order to travel south to 2nd St. Southbound trains would continue west on Temple St. to Main St., then turn south on Main St. to reach 2nd St. Northbound trains from 2nd and Main Streets would go east on 2nd St. and north on Los Angeles St. to rejoin the southbound tracks at Temple and Los Angeles Streets. Both the northbound and southbound tracks would have a new station along the couplet just north of 1st St.



Main St. at Temple, Looking South – Before



Main St. at Temple, Looking South - After

Continuing west along 2nd St. from Main St., there is an option to have a split-platform station in the vicinity of Broadway or Spring St. After crossing Hill St., the trains will enter the existing 2nd St. tunnel and then veer southward into a new tunnel beneath Bunker Hill linking the 2nd St. tunnel with Flower St.



2nd and Hill, Looking East - Before



2nd and Broadway – Looking East - After

There would be an underground station in this tunnel to allow connections with Bunker Hill. Trains would then surface through the hillside on the northeast corner of 3rd and Flower Streets and cross the intersection at-grade to travel southbound in the median of Flower St.



Looking North on Flower Street at 3rd Street – Before



Looking North on Flower Street at 3rd Street – After

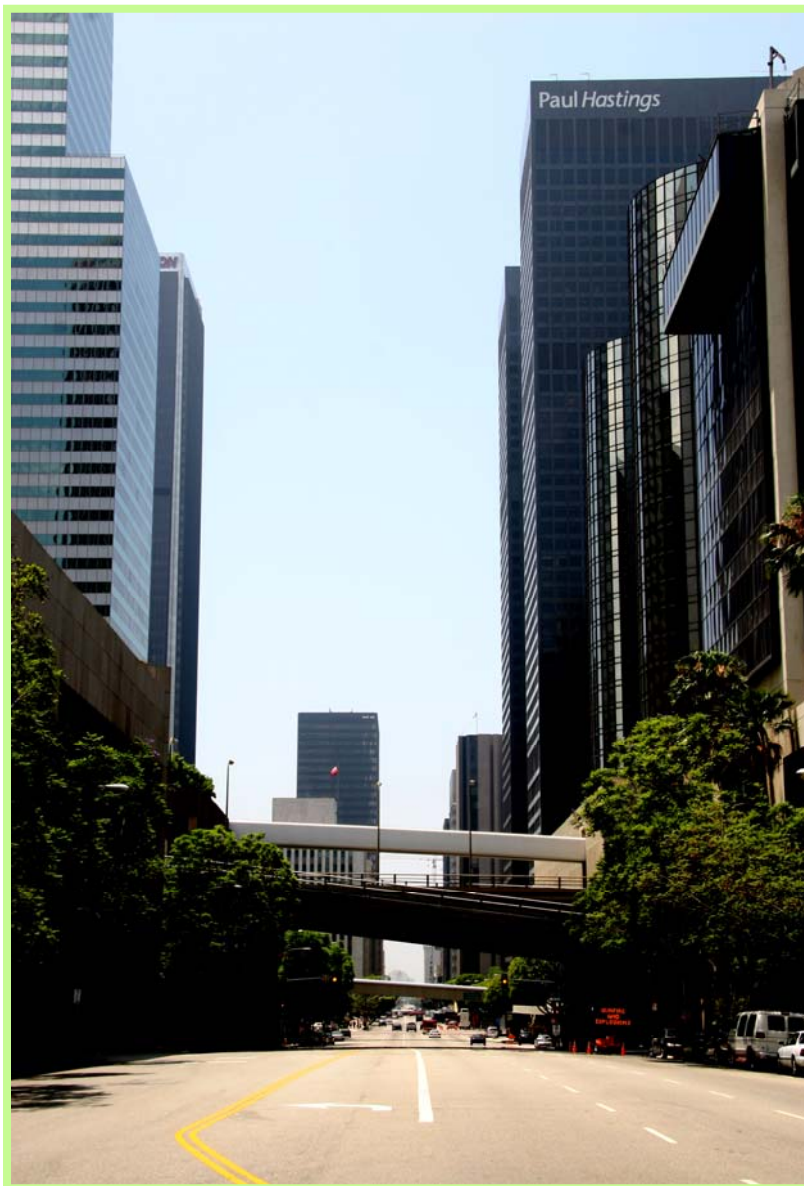
At this point, there are two options for the configuration on Flower St., as described below.

Option A:

After crossing 3rd St., trains would transition to underground tracks and continue south on Flower St. to a new underground station just south of 5th St. From there, trains would proceed underground to 7th St./Metro Center Station and arrive at the existing Metro Blue Line platform.

Option B:

After crossing 3rd St., trains would arrive at an at-grade station in the median of Flower St., just south of 3rd St. From there, trains would continue southward and transition to an underground alignment near 4th St. Trains would then proceed south under Flower St. to 7th St./Metro Center Station and arrive at the existing Metro Blue Line platform.



3rd and Flower, Looking South - Before



3rd and Flower, Looking South - After

Underground Emphasis LRT

The Underground Emphasis LRT Alternative would have a single at-grade crossing at the intersection of 1st and Alameda Streets. The rest of the route would be underground, as shown on the following map (Figure ES-22).

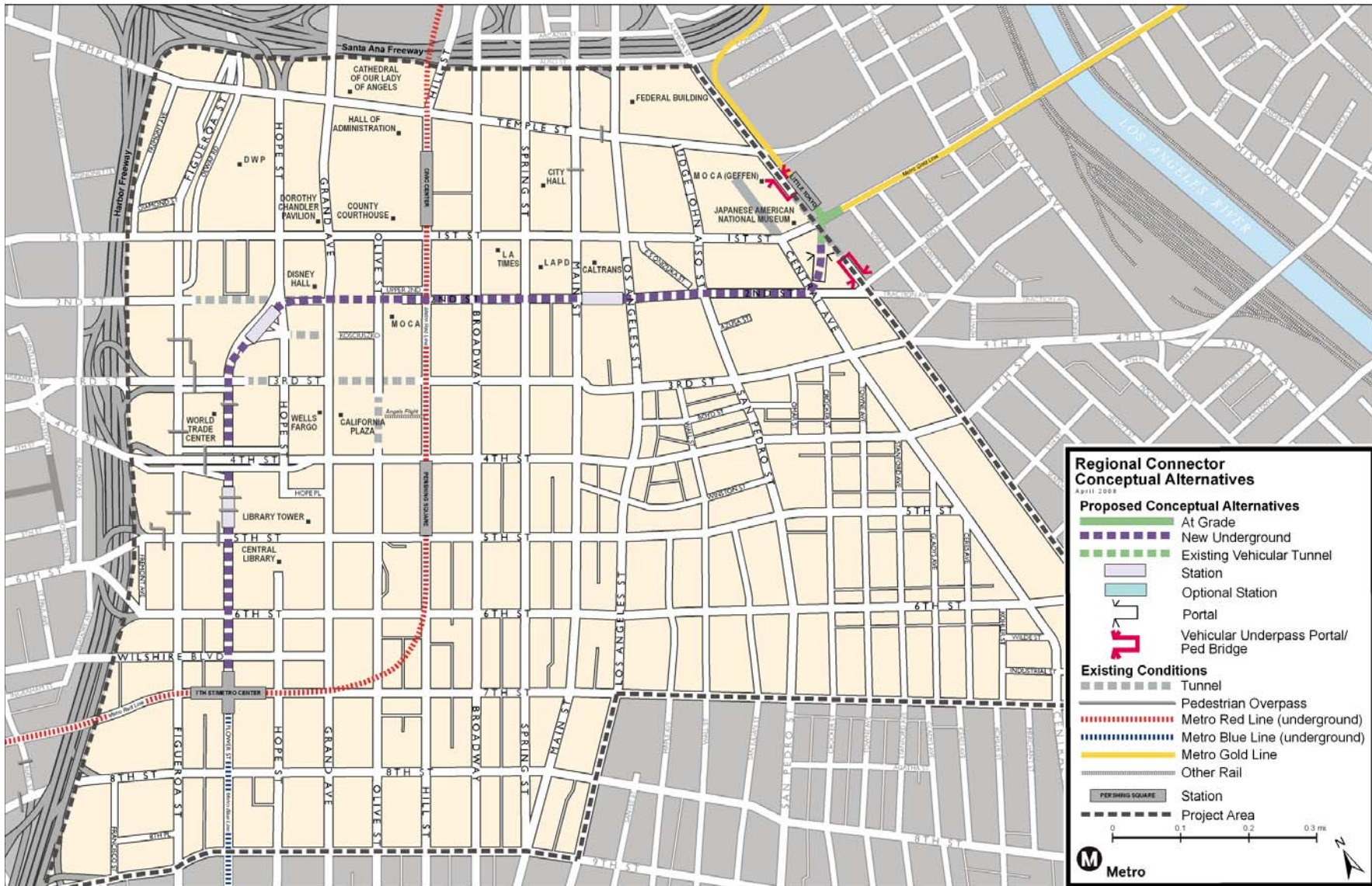
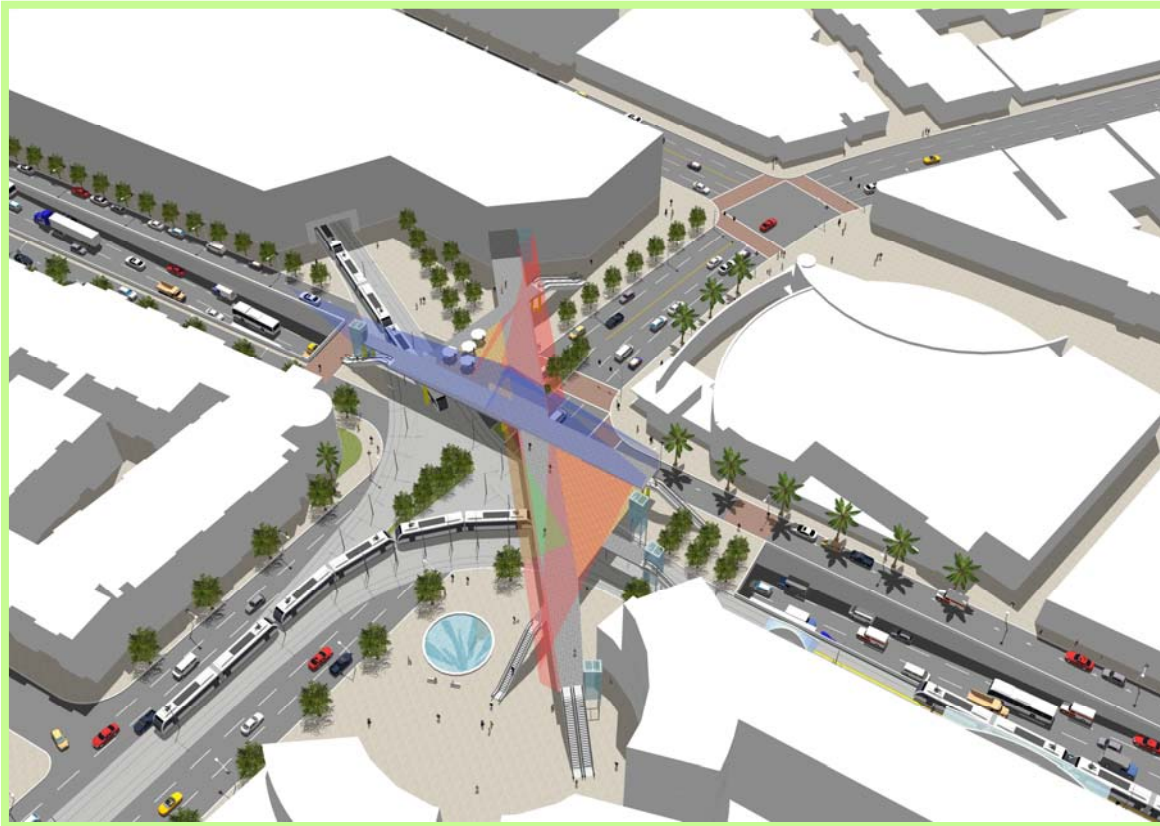


Figure ES-22 Underground Emphasis LRT Alternative

The Underground Emphasis LRT Alternative would branch off from the Metro Gold Line Eastside Extension tracks in a wye junction in the intersection of 1st and Alameda Streets, immediately south of the Little Tokyo/Arts District Station. Trains from East Los Angeles would approach the junction from the east along 1st St, and trains from Pasadena would approach from the north along Alameda St., stopping first at the Little Tokyo/Arts District Station. Both lines would then cross the intersection to reach the southwest corner, where a new tunnel portal would bring the trains underground. At 1st and Alameda Streets, a new underpass would carry car and truck traffic along Alameda St. below the rail junction, and a new overhead pedestrian bridge structure would eliminate most conflicts between pedestrians and trains.



Looking Southwest at 1st and Alameda - After

Once in the tunnel, trains would turn west under 2nd St. to reach a new underground station to be located between Los Angeles St. and Broadway.



2nd and Los Angeles, Looking West - Before



2nd and Los Angeles, Looking West - After

Trains would then proceed west on 2nd St. and turn southward beneath the 2nd St. tunnel. A new station along this stretch of tunnel would provide access to Bunker Hill. After leaving the station, the tunnel would run south underneath Flower St. to reach the next station, just north of 5th St. Trains would then continue south to 7th St./Metro Center Station and arrive on the existing Metro Blue Line platform.



5th and Flower, Looking North - After

ES.8 Transportation Impacts & Benefits

The PSA is currently served by three rail lines and 112 bus lines operated by 10 transit agencies. Service on many of these lines operates very frequently, with vehicles arriving as few as two minutes apart during peak hours. Region-wide commuter rail service (Metrolink) and nationwide passenger rail service (Amtrak) both serve Union Station, just two blocks northeast of the PSA. Two additional LRT extensions, the Metro Gold Line Eastside Extension to East Los Angeles and the Metro Expo Line to Culver City are presently under construction, and are expected to be operational by 2010. The area is also served by several radial freeways branching out toward other major regional destinations, and many of them carry express bus service during peak hours.

Despite the area's dense transportation infrastructure, rapid growth in downtown Los Angeles is overwhelming many of the facilities, including transit transfer stations. Reducing the number of transfers needed to traverse the LRT system would alleviate some of the crowding, particularly at 7th St./Metro Center and Union Station, where two separate portions of the LRT system terminate and many riders must transfer to the HRT Metro Red and Purple Lines to complete their trips. The Regional Connector would improve the link between these two stations and enable transfer-

free service throughout much of the LRT network, most notably from Long Beach to Pasadena along the Metro Blue and Gold Lines, and from East Los Angeles to Culver City along the Metro Gold and Expo Lines.

Alternatives Studied

Because the purpose of the Regional Connector is to bridge a gap in the existing LRT system, LRT is the mode that survived the screening process and is under consideration for the build alternatives. Other modes such as HRT, monorail, commuter rail, people mover, etc. were eliminated due to their high cost and inability to allow single-vehicle service throughout the LRT network. The forecasted effects of the build alternatives (At-Grade Emphasis LRT and Underground Emphasis LRT) were compared with those of the No Build and TSM Alternatives to determine the amount of benefits the new LRT link would provide.

Travel Time Savings

The Regional Connector build alternatives would reduce travel times for many trips on the Metro Rail system whose current headways are shown in Table ES-10. Downtown-bound passengers on the Metro Gold Line would no longer have to transfer to reach their destinations, and Metro Blue and Expo Line passengers could also reach the northern and eastern areas of the central business district without changing trains. Riders passing through downtown from East Los Angeles to Long Beach and Pasadena to Culver City would need to make one less transfer, and riders travelling from East Los Angeles to Culver City and Pasadena to Long Beach would have both of their presently required transfers eliminated.

Under the current Pasadena-Long Beach and East Los Angeles-Culver City operating plan, passengers wishing to travel along the Gold Line from Pasadena to East Los Angeles would need to make one transfer at a new Regional Connector station in order to complete their trips. In the case of the Underground Emphasis LRT Alternative, this would be a cross-platform transfer at the new station on 2nd St. For the At-Grade Emphasis LRT Alternative, the transfer would occur at City Hall, and passengers would need to walk one block from the southbound platform on Main St. to the northbound platform on Los Angeles St.

Tables S-10 and S-11 show the potential time savings for passengers travelling along both of the proposed Regional Connector routes (East Los Angeles to Culver City and Pasadena to Long Beach). These estimates include current travel times along existing lines as well as predicted travel times along the lines that are presently under construction. The No Build estimates reflect a transfer from the Metro Gold Line to the Metro Red and Purple Lines at Union Station, which could take from five to 12 minutes at most times of day. This includes the five-minute ride from Union Station to 7th St./Metro Center Station on the Metro Red and Purple Lines and the transfer from the Metro Red and Purple Lines to the Metro Blue Line at 7th St./Metro Center Station, which could take anywhere from two to twelve minutes. The best case scenario for the No Build Alternative is the same as the predicted travel time along some of the build alternatives. However, it should be noted that the rush hour headways are different on every Metro Rail line serving downtown, as shown in Table ES-9, and the best case scenario under the No Build alternative happens only by chance. Most trips take longer.



Table ES-9 Current Peak Hour Headways on Downtown Metro Rail Lines

Metro Rail Line	Headway
Metro Gold Line	8 minutes
Metro Red and Purple Lines	10 minutes each, 5 minutes combined
Metro Blue Line	5 ½ minutes

Table ES-10 East Los Angeles to Culver City (in minutes)

	No Build	At-Grade Option A	At-Grade Option B	Underground
Pomona/Atlantic to Pico/Aliso	14	14	14	14
Pico/Aliso to 7 th St./Metro Center	18 to 32*	13	12	8
7 th St./Metro Center to Washington/National	26	26	26	26
Total	58 to 72	53	52	48

*via Metro Red and Purple Lines

Table ES-11 Pasadena to Long Beach (in minutes)

	No Build	At-Grade Option A	At-Grade Option B	Underground
Sierra Madre Villa to Union Station	29	29	29	29
Union Station to 7 th St./Metro Center	12 to 29*	12	12	10
7 th St./Metro Center to Transit Mall	55	55	55	55
Total	96 to 113	96	96	94

*via Metro Red and Purple Lines

Ridership

Model runs predicted the highest overall transit ridership, an increase of 0.7 percent over current levels (about 10,000 new transit trips), for the Underground Emphasis LRT Alternative. This is probably because it bridges the missing link in the LRT system, minimizes transfers, and provides a shorter trip time than the other build alternative. These improvements will increase the attractiveness of the system to people who do not currently ride transit. The rise in the number of rail linked trips is partially offset, however, by a small drop in the number of bus passengers. This indicates that many of the riders attracted to the rail system by the new link will be existing transit riders lured away from buses. However, the increase in rail riders is more than double than the decrease in bus riders, so the majority of the new rail passengers will be new transit users.



Underground-running tracks will eliminate conflicts with surface traffic and allow for faster train speeds.

The At-Grade Emphasis LRT alternative would achieve the same results, but to a slightly lesser extent. Trains would traverse the Regional Connector more slowly because they will need to safely navigate street-running alignments and potentially stop for red lights at intersections. The increase in overall transit ridership would be 0.5 percent, or about 8,000 linked trips.



Trains running at-grade will have to traverse some parts of the At-Grade Emphasis LRT Alternative alignment slowly to navigate 90-degree turns and avoid conflicts with automobiles and pedestrians.

The TSM Alternative would cause overall transit ridership to increase by about 1,000 trips, and cause an additional 1,000 riders to switch from rail to buses. This is likely because the new shuttle buses would provide a convenient new alternative to the Metro Red and Purple Lines for trips entirely within the downtown area, though they would not reduce the number of transfers needed to complete trips into or through downtown.

The No Build Alternative would provide the smallest increase in transit ridership over current levels, since it includes the fewest service improvements. Rail ridership is actually slightly higher under the No Build Alternative than under the TSM Alternative, because there is no competition for riders from the TSM shuttle bus service. Table ES-12 outlines the potential ridership benefits for each alternative in terms of total linked trips system-wide in the year 2030.

Table ES-12 Linked Transit Trip Estimates by Mode

	No Build	TSM	At-Grade Option A	At-Grade Option B	Underground
Bus Linked Trips	1,191,300	1,193,000	1,187,100	1,186,600	1,185,800
Metro Rail Linked Trips	248,200	247,400	260,400	261,700	264,200
Metrolink Linked Trips	76,300	76,400	75,900	75,900	76,000
Total	1,515,800	1,516,800	1,523,400	1,524,200	1,526,000
Increment Over No Build	0	1,000	7,600	8,400	10,200

Roadway Analysis

The traffic impacts of each alternative were compared using volume-to-capacity (V/C) ratio forecasts to identify the predicted amount of congestion. Level of service (LOS) was used to assign degrees of driver comfort to ranges of V/C ratios, with LOS A indicating free-flowing traffic, and LOS F indicating severe congestion. As of 2007, the entire PSA road network was operating at LOS D (acceptable for urban conditions) or better, except the intersection of 1st and Alameda Streets (LOS F) and three roadway segments along 2nd and Alameda Streets (LOS E). Under predicted year 2030 No Build conditions, five additional LOS E and LOS F intersections and nine additional LOS E/F roadway segments were identified. The traffic impacts of the No Build, TSM, and Underground Emphasis LRT Alternatives were found to be minimal and essentially equal, due to their lack of street-running tracks or changes to the road network (Table ES-13).

The At-Grade Emphasis LRT Alternative, on the other hand, would convert traffic lanes, including bus only lanes, along Flower, 2nd, Main, Los Angeles, and Temple Streets to rail rights-of-way, thus reducing the road capacity for automobiles and buses. Numerous turning restrictions would also force additional around-the-block movements and limit access to some parcels. As such, the traffic modeling revealed that roadway congestion in the PSA would increase as a result of the At-Grade Emphasis LRT Alternative (Table ES-14). There would be four additional LOS E/F intersections and two additional LOS E/F roadway segments beyond year 2030 No Build conditions. As a result, this alternative is the least preferable from the standpoint of roadway traffic congestion, and the other alternatives are all equally favorable. Tables S-13 and S-14 show the performance of some roadway segments in the PSA under each of the alternatives. Table ES-15 summarizes the LOS in various intersections in the PSA. The highest number of LOS E and F intersections occur for both Option A and B of the At-Grade Emphasis LRT Alternative.

**Table ES-13 Future (2030) Roadway Segment Average Daily Traffic (ADT) Analysis
No Build, TSM and Underground Emphasis LRT Alternatives**

Primary Street	Cross Street	Facility Type	Number of lanes	Capacity	ADT	V/C Ratio	LOS
Flower St.	3 rd St.	Secondary	4	28,000	15,389	0.550	A
	5 th St.	Secondary	6	45,000	27,426	0.609	B
	6 th St.	Secondary	4	30,000	23,938	0.798	C
	Wilshire Blvd.	Secondary	4	30,000	26,757	0.892	D
	7 th St.	Secondary	4	30,000	26,033	0.868	D
2 nd St.	Alameda St.	Secondary	3	21,000	10,279	0.489	A
	Central Ave.	Secondary	2	14,000	13,140	0.939	E
	Los Angeles St.	Secondary	3	21,000	20,421	0.972	E
	Main St.	Secondary	3	21,000	24,679	1.175	F
	San Pedro St.	Secondary	2	14,000	16,810	1.201	F
	Spring St.	Secondary	4	28,000	18,095	0.646	B
Los Angeles St.	1 st St.	Secondary	4	28,000	23,331	0.833	D
	2 nd St.	Secondary	4	28,000	21,568	0.770	C
	Temple St.	Secondary	5	35,000	27,703	0.792	C
Main St.	1 st St. 1-Way	Major Class II	3	25,500	15,185	0.595	A
	2 nd St. 1-Way	Major Class II	3	25,500	17,237	0.676	B
	Temple St.	Major Class II	4	34,000	32,216	0.948	E



**Table ES-13 Future (2030) Roadway Segment Average Daily Traffic (ADT) Analysis
No Build, TSM and Underground Emphasis LRT Alternatives**

Primary Street	Cross Street	Facility Type	Number of lanes	Capacity	ADT	V/C Ratio	LOS
Temple St.	Judge John Aiso St.	Major Class II	4	32,000	21,516	0.672	B
	Los Angeles St.	Major Class II	4	32,000	21,132	0.660	B
	Main St.	Major Class II	4	32,000	21,412	0.669	B
1 st St.	Alameda St.	Secondary	4	28,000	27,077	0.967	E
	Central Ave.	Secondary	4	28,000	29,016	1.036	F
	Los Angeles St.	Secondary	6	42,000	27,783	0.661	B
	Main St.	Secondary	6	42,000	30,056	0.716	C
	Spring St.	Secondary	6	42,000	25,401	0.605	B
3 rd St.	Flower St.	Secondary	4	30,000	24,053	0.802	D
	Spring St.	Secondary	3	22,500	22,080	0.981	E
	Los Angeles St.	Secondary	3	22,500	22,585	1.004	F
	Main St.	Secondary	3	22,500	20,304	0.902	E
Alameda St.	1 st St.	Major Class II	4	32,000	42,364	1.324	F
	2 nd St.	Major Class II	4	32,000	38,338	1.198	F

**Table ES-14 Future (2030) Roadway Segment Average Daily Traffic (ADT) Analysis
At-Grade Emphasis LRT Alternative**

Primary Street	Cross Street	Facility Type	Number of Lanes	Capacity	ADT	V/C Ratio	LOS
Flower St.	3 rd St.	Secondary	3	21,000	15,389	0.733	C
	5 th St.	Secondary	6	45,000	27,426	0.609	B
	6 th St.	Secondary	4	30,000	23,938	0.798	C
	Wilshire Blvd.	Secondary	4	30,000	26,757	0.892	D
	7 th St.	Secondary	4	30,000	26,033	0.868	D
2 nd St.	Alameda St.	Secondary	3	21,000	10,279	0.489	A
	Central Ave.	Secondary	2	14,000	13,140	0.939	E
	Los Angeles St.	Secondary	1	7,000	4,084	0.583	A
	Main St.	Secondary	1	7,000	4,936	0.705	C
	San Pedro St.	Secondary	2	14,000	16,810	1.201	F
	Spring St.	Secondary	1	7,000	3,619	0.517	A
Los Angeles St.	1 st St.	Secondary	3	21,000	23,331	1.111	F
	2 nd St.	Secondary	4	28,000	21,568	0.770	C
	Temple St.	Secondary	4	28,000	27,703	0.989	D
Main St.	1 st St. 1-Way	Major Class II	3	25,500	15,185	0.595	A
	2 nd St. 1-Way	Major Class II	3	25,500	17,237	0.676	B
	Temple St.	Major Class II	3	25,500	32,216	1.263	F
Temple St.	Judge John Aiso St.	Major Class II	2	16,000	21,516	1.345	F
	Los Angeles St.	Major Class II	2	16,000	21,132	1.321	F
	Main St.	Major Class II	3	24,000	21,412	0.892	D
1 st St.	Alameda St.	Secondary	4	28,000	27,077	0.967	E
	Central Ave.	Secondary	4	28,000	29,016	1.036	F
	Los Angeles St.	Secondary	6	42,000	35,952	0.856	D
	Main St.	Secondary	6	42,000	39,928	0.951	E
	Spring St.	Secondary	6	42,000	32,639	0.777	C
3 rd St.	Flower St.	Secondary	4	30,000	24,053	0.802	D
	Spring St.	Secondary	3	22,500	29,318	1.303	F
	Los Angeles St.	Secondary	3	22,500	30,754	1.367	F
	Main St.	Secondary	3	22,500	30,176	1.341	F
Alameda St.	1 st St.	Major Class II	4	32,000	42,364	1.324	F
	2 nd St.	Major Class II	4	32,000	38,338	1.198	F

Additionally, Table ES-15 also outlines how LOS at each intersection would vary with each alternative.



Table ES-15 Future (2030) Intersection Level of Service
PM Peak Hour

Intersection	No Build		TSM		Option A		Option B		Underground	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Hill St. / 1 st St.	0.91	E	0.91	E	0.91	E	0.91	E	0.91	E
Broadway / 1 st St.	0.70	B	0.70	B	0.78	C	0.78	C	0.70	B
Spring St. / 1 st St.	0.56	A	0.56	A	0.62	B	0.62	B	0.56	A
Main St. / 1 st St.	0.67	B	0.67	B	0.91	E	0.91	E	0.67	B
Los Angeles St. / 1 st St.	0.71	C	0.71	C	0.88	D	0.88	D	0.71	C
Judge John Aiso St. / 1 st St.	0.85	D	0.85	D	1.06	F	1.06	F	0.85	D
Alameda St. / 1 st St.	1.10	F	1.10	F	1.10	F	1.10	F	0.87	D
Broadway / 2 nd St.	0.57	A	0.57	A	0.54	A	0.54	A	0.57	A
Spring St. / 2 nd St.	0.49	A	0.49	A	0.44	A	0.44	A	0.49	A
Main St. / 2 nd St.	0.77	C	0.77	C	0.85	D	0.85	D	0.77	C
Los Angeles St. / 2 nd St.	0.73	C	0.73	C	0.82	D	0.82	D	0.73	C
San Pedro St. / 2 nd St.	0.75	C	0.75	C	0.59	A	0.59	A	0.75	C
Central Ave. / 2 nd St.	0.67	B	0.67	B	0.67	B	0.67	B	0.67	B
Alameda St. / 2 nd St.	0.89	D	0.89	D	0.89	D	0.89	D	0.89	D
Broadway / 3 rd St.	0.74	C	0.74	C	0.92	E	0.92	E	0.74	C
Spring St. / 3 rd St.	0.67	B	0.67	B	0.82	D	0.82	D	0.67	B
Main St. / 3 rd St.	0.90	D	0.90	D	1.04	F	1.04	F	0.90	D
Los Angeles St. / 3 rd St.	0.70	B	0.70	B	0.74	C	0.74	C	0.70	B
San Pedro St. / 3 rd St.	0.54	A	0.54	A	0.62	B	0.62	B	0.54	A
Central Ave. / 3 rd St.	0.51	A	0.51	A	0.51	A	0.51	A	0.51	A
Alameda St. / 3 rd St.	0.70	B	0.70	B	0.70	B	0.70	B	0.70	B
Figueroa St. / 3 rd St.	1.22	F	1.22	F	1.22	F	1.22	F	1.22	F
Hope St. / Temple St.	0.96	E	0.96	E	0.96	E	0.96	E	0.96	E
Grand Ave. / Temple St.	0.87	D	0.87	D	0.87	D	0.87	D	0.87	D
Broadway / Temple St.	0.92	E	0.92	E	0.92	E	0.92	E	0.92	E
Spring St. / Temple St.	0.51	A	0.51	A	0.51	A	0.51	A	0.51	A
Main St. / Temple St.	0.85	D	0.85	D	1.00	E	1.00	E	0.85	D
Los Angeles St. / Temple St.	0.77	C	0.77	C	1.34	F	1.34	F	0.77	C
Judge John Aiso St. / Temple St.	0.61	B	0.61	B	0.93	E	0.93	E	0.61	B
Alameda St. / Temple St.	0.80	C	0.80	C	1.04	F	1.04	F	0.80	C
LOS E Intersections	3		3		7		7		3	
LOS F Intersections	2		2		6		6		1	

Parking Evaluation

The number of curb parking spaces that would need to be removed was calculated for both of the build alternatives. Neither the No Build nor the TSM Alternatives would result in the loss of curb parking spaces. The Underground Emphasis LRT Alternative would require the removal of 20 curb parking spaces on the east side of Alameda St. near 1st St. in order to accommodate the new underpass structure. The At-Grade Emphasis LRT Alternative would displace a total of 88 parking spaces. Mitigation measures, such as new off-street parking facilities, may be needed to offset the impact of removing these curb spaces.



Summary

The No Build Alternative would result in the smallest increase in transit ridership over current volumes, and would not address the missing link in the LRT system. However, it would have no negative parking or roadway circulation impacts.

The TSM Alternative would result in a small increase in transit ridership, as well as a redistribution of a small number of passengers from rail to buses. It would augment transit service between both ends of the missing link in the LRT system, but would not eliminate any transfers. Like the No Build alternative, it would have no negative parking or roadway circulation impacts.

The Underground Emphasis LRT Alternative would attract the greatest volume of new riders to the transit system of the alternatives considered, and it would bridge the missing link in the LRT system and allow new, transfer-free service from Long Beach to Pasadena and from East Los Angeles to Culver City. It would have no negative impacts on roadway congestion, but would result in the loss of 20 curb parking spaces.

The At-Grade Emphasis LRT Alternative would attract fewer riders than the Underground Emphasis LRT Alternative because it would operate at lower speeds along the new tracks. It would still bridge the missing link in the LRT system and allow the same transfer-free service between the Metro Blue, Gold, and Expo Lines, but the overall trip times would be longer. The removal of traffic lanes for rail use would increase congestion to severe levels at several locations within the PSA, and would result in the loss of 88 curb parking spaces.

ES.9 Environmental Impacts & Benefits

The challenge of defining a major piece of public transit infrastructure within the urban core of downtown Los Angeles where rail rights-of-way do not exist is making the project fit while not compromising service or the quality of life for the area. The 1.8-mile gap between the operating lines includes major civic, entertainment, historic and cultural districts within a dense, ever-changing, high rise environment. This section summarizes the environmental considerations of the recommended build alternatives. The recommended alternatives will undergo further scoping,

analysis and development leading to circulation of a Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/EIR) per NEPA and CEQA in the next phase of this project per authorization by Metro's Board of Directors.

Land Use and Economic Development

The at-grade and underground alternatives follow similar routes through downtown and never stray more than two blocks from each other. The At-Grade Emphasis LRT Alternative could create some additional traffic congestion in the area by removing automobile lanes on 2nd, Main, Temple, and Los Angeles Streets, thus making access to the surrounding businesses by car more difficult. The tracks may also be difficult for pedestrians to traverse, making the area unattractive for walking, especially if existing mid-block crosswalks are removed. However, this impact would be offset by the generation of increased pedestrian trips near the stations.

The Underground Emphasis LRT Alternative would have fewer negative impacts on the existing land-use patterns than the At-Grade Emphasis LRT Alternative because it would not involve removing any existing automobile rights-of-way for rail use. The Underground Emphasis LRT Alternative may also attract more transit trips and business patrons to the area than the At-Grade Emphasis LRT Alternative due to the shorter trip times typically associated with fully grade separated rail.

Displacement and Relocation of Existing Uses

The At-Grade Emphasis LRT Alternative may require reduction of sidewalk widths, and partial or full right-of-way acquisitions at Flower and 3rd Streets (Option A) or Flower and 5th Streets (Option B) where the tracks rise to street level. On Main and Los Angeles Streets, a 5-foot wide strip of land from the existing sidewalk or full or partial right-of-way acquisitions will be needed for station construction. Loss of right-of-way and curb parking is likely along 2nd, Main, Los Angeles, and Temple Streets.

The Underground Emphasis LRT Alternative would require fewer acquisitions, but would necessitate purchasing the entire block bounded by Central Avenue, Alameda Street, 1st Street, and 2nd Street, which is currently occupied entirely by retail and restaurant businesses. Though no residential units are located in this block, the acquisition could still impact local residents due to the loss of some commercial services. No other displacement or loss of curb parking is anticipated.

Community and Neighborhood Impacts

Construction impacts would be temporary, but significant for both of the build alternatives. Noise, vibration, dust, and increased construction vehicle traffic would be necessary during business hours, and road and sidewalk closures could be in effect for months at a time. Both alternatives will have a pedestrian overpass on Alameda St., which will change the appearance of the streetscape.

The At-Grade Emphasis LRT Alternative will significantly alter the character of 2nd, Temple, Main, Los Angeles, and Flower Streets. Twenty-five-foot tall catenary poles would be erected above the street to supply electricity to the trains, and high-platform stations with canopies would be constructed in the roadway medians or along the curb lanes. The street-running tracks could also present new obstructions to pedestrians wishing to cross. Also, the permanent removal of automobile traffic lanes to install tracks and stations may slow both car and bus trips. The removal of left-turn lanes and curb parking spaces would make navigating the area by car more difficult. Metro Rail currently operates from 4 a.m. to 1 a.m. daily, and trains and stations will generate noise in the form of bells, horns, public address announcements, and rail squealing during these times.

The Underground Emphasis LRT Alternative has few surface impacts aside from the placement of station entrances along existing sidewalks. The operational noises may still be heard where the tracks surface at 1st and Alameda Streets, as well as in the vicinity of tunnel ventilation shafts. Noise emanating from the ventilation shafts would be quieter at street level than noise generated along at-grade tracks.



At-grade stations allow pedestrians to move between the sidewalk and the platform quickly without having to navigate stairwells and concourses.

Visual and Aesthetic Impacts

Both alignments will pass within one-quarter mile of over 200 notable architectural resources. The substantial roadway modifications needed during construction will result in potential visual disruption, though the finished infrastructure will be consistent in character with the existing urban landscape. Both alignments will include a pedestrian overpass at Alameda Street, which will impose visual impacts both during and after construction. Platforms, signage, tracks, and overhead wires would be added along PSA streets and sidewalks for the At-Grade Emphasis LRT Alternative, and the wires at some intersections may be numerous enough to produce an overhead web-like effect.

The Underground Emphasis LRT Alternative would add station portals to the PSA, and these would change the appearance of the parcels on which they are located. They would not be tall enough, however, to block views of the surrounding architectural resources. Aside from the portal area at Alameda St., there would be no other visual or aesthetic impacts associated with the Underground Emphasis LRT Alternative. Further study is needed to determine whether the proposed portals would block views of existing public art installations. Though the At-Grade Emphasis LRT Alternative imposes more long-term visual impacts, the Underground Emphasis LRT Alternative would present greater impacts during the construction phase because tunneling takes longer and involves more machinery than installing at-grade tracks.

Air Quality Impacts

Construction-related emissions are expected to be higher for the Underground Emphasis LRT Alternative because it involves significantly more work over a longer period of time than the At-Grade Emphasis LRT Alternative. Changes in intersection configuration, especially under the At-Grade Emphasis LRT Alternative, could cause localized congestion and CO emissions increases. However, on a regional scale, both alternatives would yield fewer vehicle miles traveled (VMT) than the No Build Alternative, and would thus prove beneficial to the region's air quality.

Noise and Vibration

LRT vehicles on both alternatives would generate noise in the form of rail squealing, brakes, propulsion systems, horns, bells, and station platform announcements. The At-Grade Emphasis LRT Alternative may also include crossing bells at street level, and the Underground Emphasis LRT Alternative would have mechanical HVAC systems that could also generate additional noise. The Underground Emphasis LRT Alternative would generate more noise and vibration at track level due to the higher train speeds associated with grade-separated operation, but the amount escaping to the street through the ventilation structures would be minimal and would likely be drowned out by the already-high ambient noise levels in the downtown area. Overall, the At-Grade Emphasis LRT Alternative presents more potential for noise impacts than the Underground Emphasis LRT Alternative, though the magnitude would be similar to bus operations and can be mitigated through careful design and maintenance.

Ecosystems/Biological Resources

There are no protected wildlife areas or waterways within one-quarter mile of the build alternatives. There are also very few locations for vegetation and wildlife to exist in the dense downtown area. As such, the ecosystem impacts of the build alternatives would be minimal. Nesting sites for birds could be affected if construction requires the removal of street trees.