ATTACHMENT A

Los Angeles County
Metropolitan Transportation Authority

West Santa Ana Branch Transit Corridor

Final Northern Alignment Alternatives and Concepts Screening Report
Executive Summary

Metro

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ACRONYMS AND ABBREVIATIONS

BRT	Bus Rapid Transit
CEQA	California Environmental Quality Act
EJ	Environmental Justice
Environmental Study	West Santa Ana Branch Transit Corridor Environmental Study
LA County	Los Angeles County
LAUS	Los Angeles Union Station
LRTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
NEPA	National Environmental Protection Act
P3	Public-Private Partnership
Project	West Santa Ana Branch Transit Corridor
ROM	Rough-Order-of-Magnitude
SIP	Strategic Implementation Plan
Study Area	West Santa Ana Branch Transit Corridor Study Area
TOC	Transit Oriented Community
TOD	Transit Oriented Development
TRS	Technical Refinement Study
VMT	Vehicle Miles Traveled
WSAB	West Santa Ana Branch

EXECUTIVE SUMMARY

The West Santa Ana Branch (WSAB) Transit Corridor (Project) is a proposed light rail transit line that would extend approximately 20 miles from downtown Los Angeles through southeast Los Angeles County (LA County), traversing densely populated, low-income and heavily transit-dependent communities not currently served by Metro Rail. The Project is one of the many transit projects funded by LA County Measure R (approved in November 2008) and Measure M (approved in November 2016). The Project is identified in the Los Angeles County Metropolitan Transportation Authority's (Metro) 2009 Long-Range Transportation Plan with anticipated ground breaking in 2022.

In September 2016, Metro initiated the WSAB Transit Corridor Environmental Study (Environmental Study). Public Scoping Meetings, as part of the environmental process, took place in the cities of Bellflower, Los Angeles, South Gate, and Huntington Park in June 2017. The comments received from the public at those meetings resulted in the development of new alignment and station concepts. The evaluation of these new Concepts as well as the original Alternatives is the subject of this report.

ES.1 Summary of Results

Based on the findings of the Northern Alignment Alternatives and Concepts screening analysis, a northern terminus at Los Angeles Union Station (LAUS) or in the Downtown Transit Core would provide the highest benefits. This was further confirmed based on input gathered from public outreach meetings held in March 2018. The evaluation resulted in three Concepts that best align with Project goals:

- **Concept E: Alameda (underground)** aligns with the overall project goals for the Project. This Concept rates high for mobility improvements, minimizes environmental impacts, and ensures equity by providing more transit access to minority and low-income communities. Concept E is also supportive of land use plans and policies by serving high population and employment densities. The significant underground section of this alignment would result in high capital costs and risks; however, the opportunity to provide a direct connection to LAUS, the East-West (Gold Line/Regional Connector), and the North-South (Blue Line) Lines offers benefits that best meet the project goals, objectives, and evaluation criteria.
- **Concept F: Alameda/Center,** with a similar alignment as Concept E, also aligns with the overall project goals by rating high in mobility improvements and ensures equity to minority and low-income communities. Concept F would provide additional benefits of a connection to emerging Transit Oriented Communities (TOC) near the Arts District North Station and an aerial connection into LAUS above the Gold Line Platform or on Platform 2. The significant underground section of this alignment would also result in high capital costs and risks; however, the opportunity to provide a direct connection to LAUS and the Blue Line offers benefits that meet the project goals, objectives, and evaluation criteria.
- **Concept G: Downtown Transit Core** also aligns with the overall project goals by supporting connectivity for emerging TOCs, and providing access to very high population densities, employment densities and transit-dependent/environmental justice communities. Like Concepts E and F, the significant underground portions of this alignment, particularly in the Downtown Core, would result in high capital costs and risks. Based on modeling results, transfers to the Regional Connector at the 7th

Street/Metro Center terminus would likely attract more riders than a terminus at Pershing Square. This Concept would offer valuable benefits of mobility and supportive land use while meeting the project goals, objectives, and evaluation criteria.

Table ES-1. Summary of Results

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
1. Provide Mobility Improvements	◑	◑	●	●	●	●	●	○
2. Support Local and Regional Land Use Plans and Policies	◑	◑	◑	◑	◑	◑	●	○
3. Minimize Environmental Impacts	○	◑	○	○	●	◑	○	◑
4. Ensure Cost Effectiveness and Financial Feasibility	◑	◑	◑	◑	○	○	○	○
5. Ensure Equity	◑	○	◑	◑	●	●	●	○
Overall Ratings	Medium/ Low	Medium/ Low	Medium	Medium	High	Medium/ High	Medium/ High	Low

Note: Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments.

ES.2 Study Area

Stretching over 20 miles from Elysian Park in the north to the Los Angeles/Orange County line in the south, the WSAB Transit Corridor Study Area (Study Area) is approximately 98 square miles and incorporates 20 individual cities – the cities of Los Angeles, Vernon, Maywood, Huntington Park, Commerce, Bell, Cudahy, Bell Gardens, South Gate, Lynwood, Compton, Downey, Paramount, Bellflower, Long Beach, Lakewood, Norwalk, Artesia, Cerritos and Hawaiian Gardens – as well as portions of unincorporated LA County (see Figure ES-1). The Study Area includes some of LA County's most densely developed and low-income residential neighborhoods and encompasses major regional employment centers, including the industrial and manufacturing backbone of the County.

As population and employment continue to increase within the Study Area, daily travel is also projected to increase. Under current (2017) conditions, the Study Area has approximately 6.39 million daily person trips. Over the next 25 years (by 2042), the daily person trips are projected to increase by 14 percent to approximately 7.26 million daily person trips. For both 2017 and 2042, approximately 31 percent of the trips stay within the Study Area, 33 percent are trips from the Study Area to destinations outside the Study Area, and 36 percent are trips into the Study Area from points outside the Study Area.

This increase of nearly 900,000 daily person trips between 2017 and 2042 may further burden the existing transportation network. Although auto travel is the predominant travel mode (with 86 percent of home-based work trips made by auto), there is significant transit demand given the high proportion of transit-dependent populations.

Figure ES-2 presents the daily trip flows from the Study Area destinations (trips beginning in the Study Area) and the primary locations where these trips are traveling. The majority of trips beginning within the Study Area have destinations within the Study Area. Those with districts adjacent to the Study Area (Central Los Angeles, Gateway Cities East and West) have the next highest number of trips. Districts that are farther away from the Study Area (South Bay, Westside, and San Gabriel Valley) have the next level of trip destinations.

Figure ES-3 shows daily trip flows by attractions to the WSAB Study Area generally shows the reverse of which are trips coming into the Study Area. Similar to the productions, the majority of trips stay within the Study Area, and the districts adjacent to the Study Area have a high number of trips coming into the corridor. In terms of attractions, the Study Area has a high number of trips (approximately 289,000) from the San Gabriel Valley traveling to the Study Area.

As shown in these figures, about half of the daily travel begins and ends in the WSAB Transit Corridor, followed by a significant travel demand between the Study Area and the Central LA District. There is also a significant travel demand between the Study Area and the Gateway Cities and the South Bay.

Figure ES-1. WSAB Transit Corridor Study Area

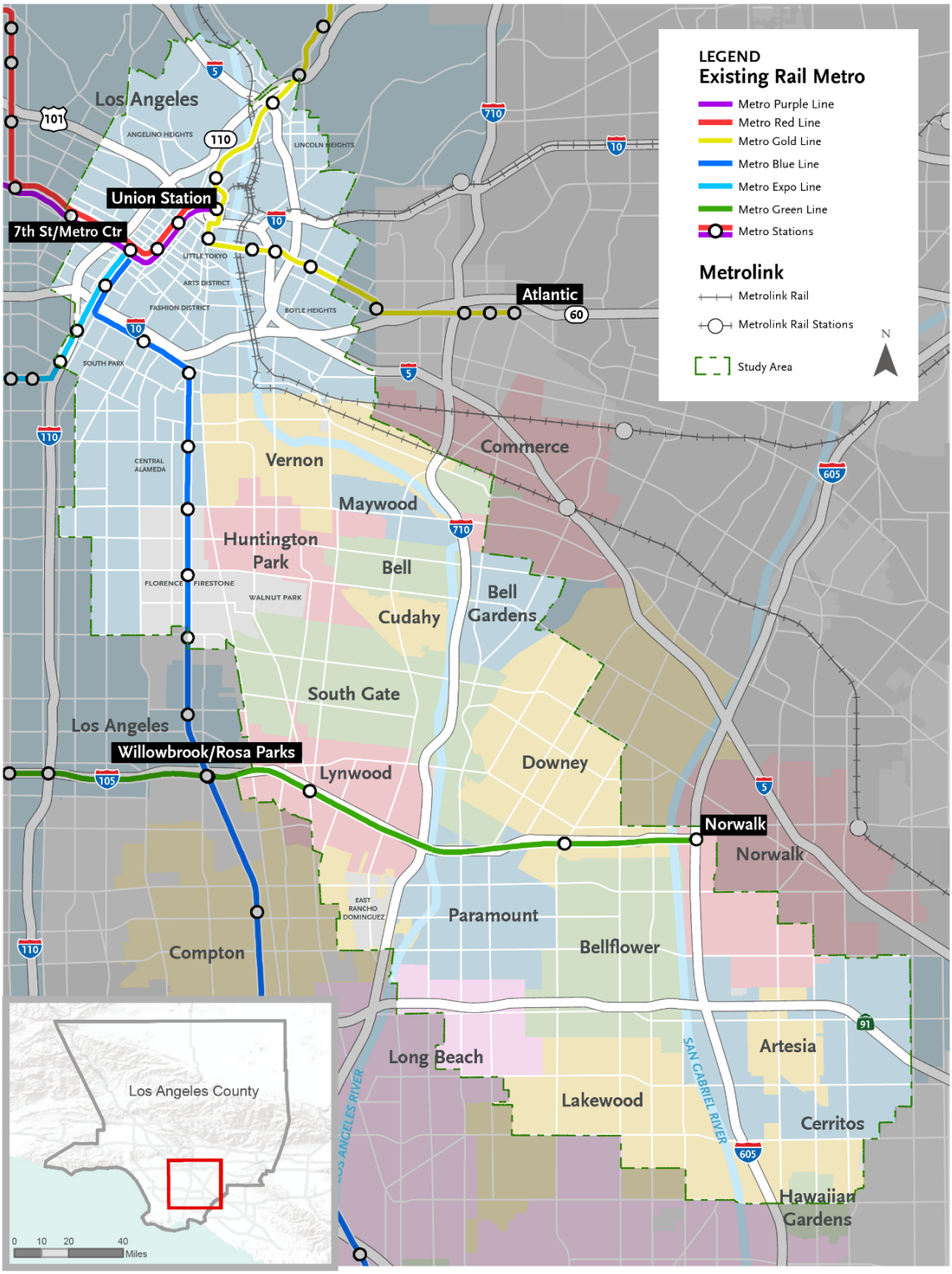


Figure ES-2. WSAB Transit Corridor Study Area Trip Destinations Map

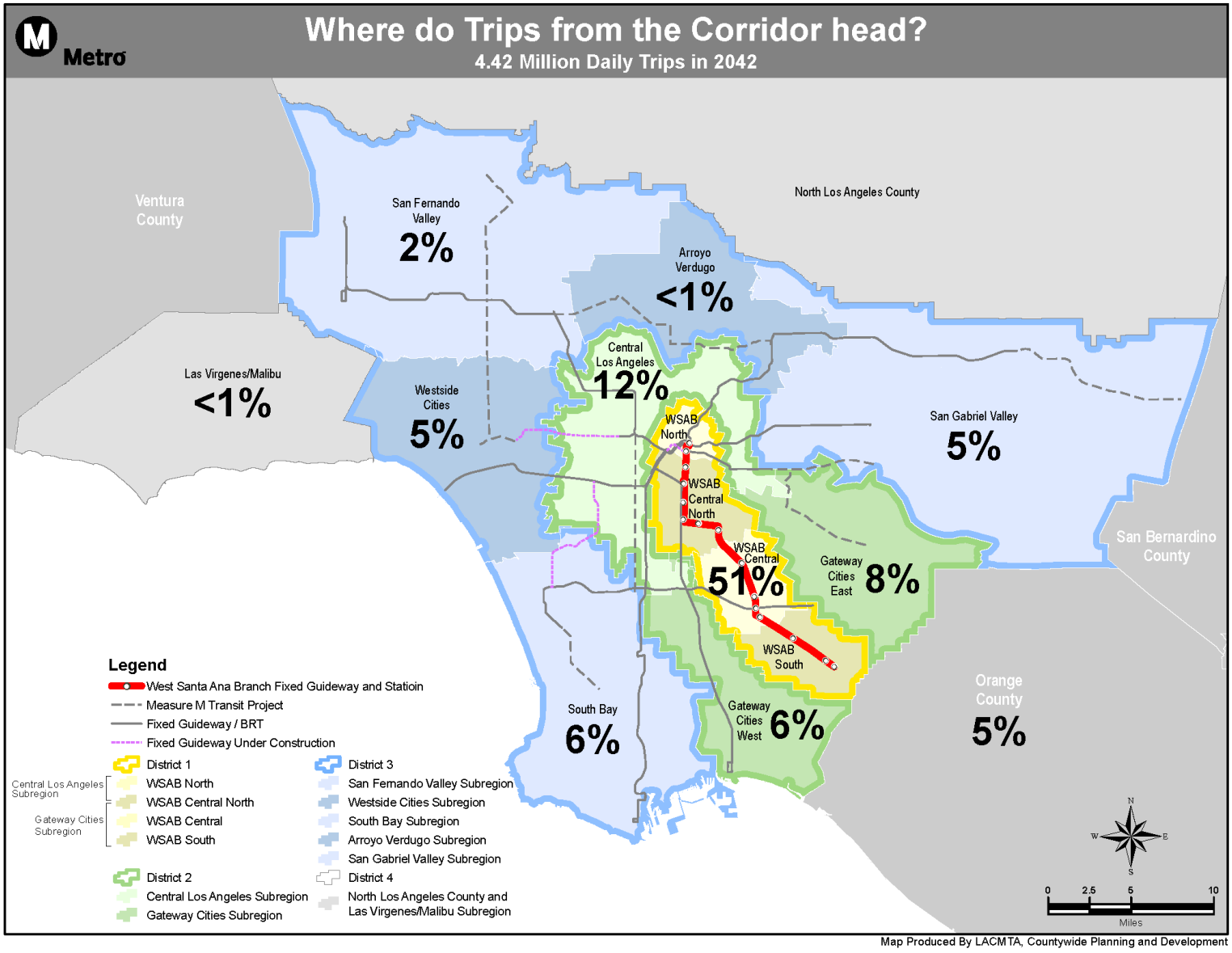
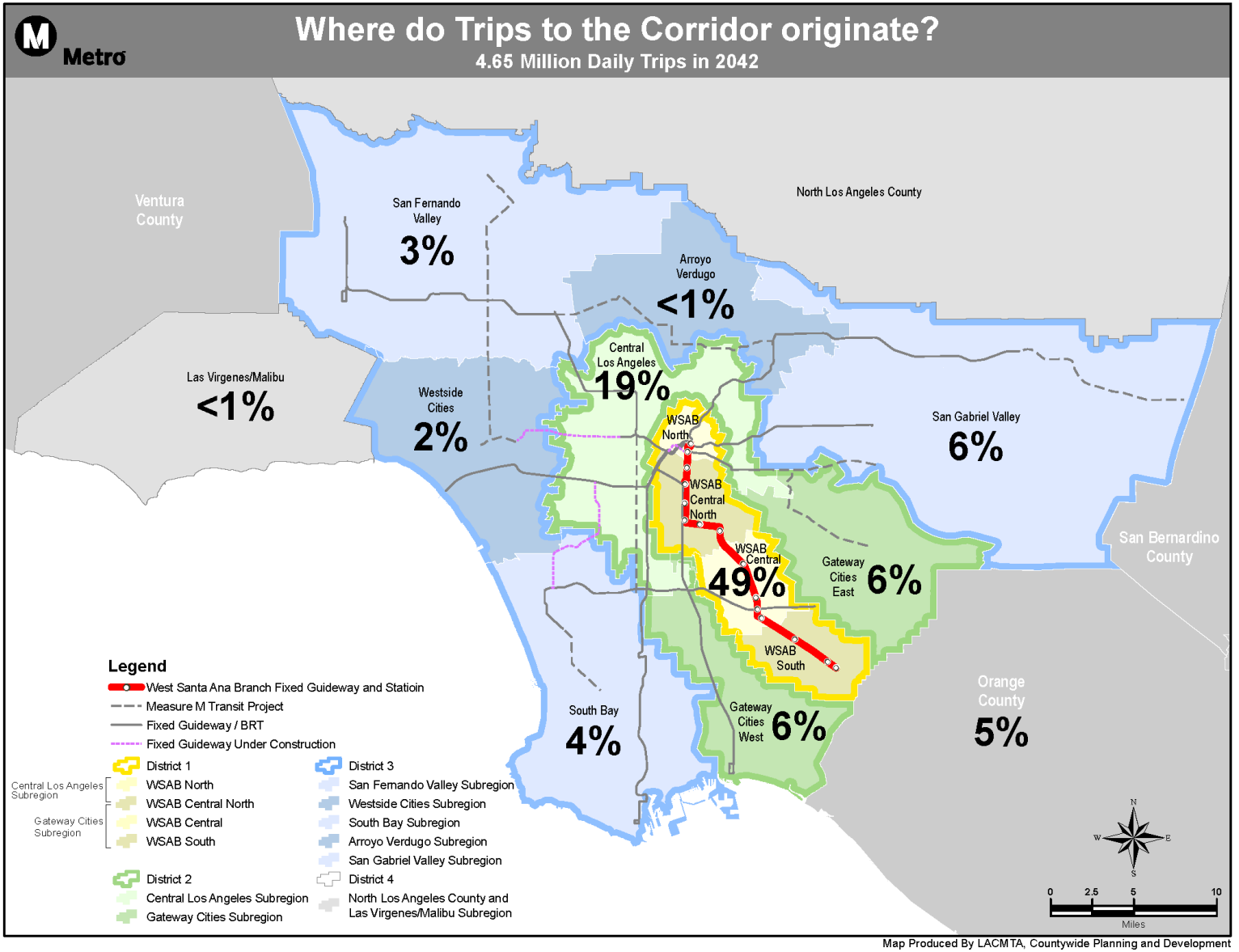


Figure ES-3. WSAB Transit Corridor Study Area Trip Origin Map



ES.3 Study Background

In September 2016, Metro initiated the WSAB Transit Corridor Environmental Study with the goal of environmentally clearing the Project under the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA). As part of this planning process, a Northern Alignment Options Screening Report (April 2017) was prepared to further assess the six Northern Alignment Options previously analyzed in the Technical Refinement Study (TRS), completed in September 2015. As a result of the Northern Alignment Options Screening Report, the following four of those six Northern Alignment Options were carried into the scoping period for the environmental analysis: Pacific/Alameda, Pacific/Vignes, Alameda, and Alameda/Vignes.

Public Scoping Meetings, as part of the environmental process, took place in the cities of Bellflower, Los Angeles, South Gate, and Huntington Park in June 2017. The meetings provided project updates and information to stakeholders with the intent to receive comments and questions during a comment period ending in August 2017.

Although the Project was defined for the Environmental Study, several factors have emerged since August 2017 that required revisiting the Project alternatives. These include:

- **Scoping Comments Received** –1,122 comments were received during the Public Scoping Period between June and August 2017. Comments related to the Northern Alignment Options identified some level of opposition, with the highest levels of concerns related to potential impacts to the Little Tokyo community.[1] Evaluating new Concepts is in response to the issues raised during the Public Scoping Period. Comments were also received from the California High-Speed Rail Authority, Metrolink, and the Federal Railroad Administration stating a preference for alignments that do not limit existing or planned capacity at LAUS for regional rail services.

- **Updates to the Long-Range Transportation Plan (LRTP)** – The passing of Measure M initiated the acceleration of major highway and transit projects within LA County. The updated LRTP Expenditure Plan would affect No Build project assumptions (with respect to the timeline of background projects), as well as an anticipated accelerated timeline for the WSAB Transit Corridor. As such, the WSAB Transit Corridor Options needed to be updated to be consistent with projects, programs and initiatives within the updated LRTP.

- **TOD/TOC Planning Initiatives** – Metro, in partnership with the City of South Gate and the Eco-Rapid Transit Joint Power Authority, has received a grant from the Federal Transit Administration's Pilot Program for the WSAB Transit Corridor Transit Oriented Development (TOD) Strategic Implementation Plan (SIP). While the WSAB Transit Corridor TOD SIP does not directly influence the alternatives development process for the WSAB Transit Corridor, it is important to consider future development potentials when evaluating the Northern Alignment Alternatives and Concepts.

- **Advancing Engineering and Planning Phases** – Following approval of Measure M, several regional and long-term projects have advanced into further engineering and planning phases that would affect the Northern Alignment Alternatives and Concepts.

[1] Approximately 400 comments were received by Little Tokyo community stakeholders.

These include Blue Line upgrades, Bus Rapid Transit (BRT) initiatives and studies, and environmental studies progressing on the Division 20 Portal Widening and Turnback Facility, Regional Rail (Amtrak, Metrolink, and High-Speed Rail), and Link US at LAUS. Given the advancement of these projects, it is important that the Northern Alignment Alternatives and Concepts considers these projects within its own development timeline.

In addition, Metro is exploring a public-private partnership (P3) as an alternative strategy for delivering the WSAB Transit Corridor. The design of the WSAB Transit Corridor needs to consider P3 best practices as a part of the evaluation process.

ES.4 Purpose of the Study

Given the factors described above, additional concepts and planning analyses were initiated based on direction from the Metro Board (March 1, 2018). As a result, updated evaluations were conducted on the four Northern Alignment Options presented at the Public Scoping Meeting in June 2017: A) Pacific/Alameda; B) Pacific/Vignes; C) Alameda (aerial); and D) Alameda/Vignes. To address concerns raised during the Public Scoping Period as well as other factors described above, four new Northern Alignment Concepts were developed: E) Alameda (underground); F) Alameda/Center; G) Downtown Transit Core; and H) Arts District/6th Street.

The purpose of this study is to present the screening evaluation of all eight Northern Alignment Alternatives and Concepts (between downtown Los Angeles and the City of Huntington Park). Following completion of this report, Metro staff will make recommendations to the Metro Board of Directors (anticipated in May 2018) on alternatives and/or concepts to be studied further as part of the NEPA/CEQA environmental analysis phase of the Project development.

ES.5 Goals, Objectives, and Evaluation Criteria

Building on extensive stakeholder and agency outreach, the goals and objectives of the WSAB Transit Corridor were established through the development of the Alternatives Analysis Study in 2010, where goals and objectives were identified through a 24-month period of public meetings and work sessions with elected officials, stakeholders, advisory committee members, and communities. These goals were further confirmed in 2015 during the TRS through technical meetings with key stakeholders, including Eco-Rapid Transit, Study Area cities, and the California Department of Transportation (Caltrans); and were further discussed in 2017 as part of the WSAB Transit Corridor Scoping Meetings and in community update meetings in March 2018. Based on the planning and community involvement activities, the following five goals were developed for the Project:

- Goal 1: Provide Mobility Improvements
- Goal 2: Support Local and Regional Land Use Plans and Policies
- Goal 3: Minimize Environmental Impacts
- Goal 4: Ensure Cost Effectiveness and Financial Feasibility
- Goal 5: Ensure Equity

For this evaluation, the criteria were developed based on earlier studies and reports, updated model forecasting (as described in section ES.3), cost estimates and engineering analysis for

the four new Concepts, as well as discussions, reviews, and input received by various Metro departments. The Northern Alignment Alternatives and Concepts were evaluated based on how well each aligns with the project goals and advances the overall objectives of the Project.

Figure ES-4 presents a flow chart that represents the evaluation process used to identify the **Alternatives and Concepts that best meet the project goals, objectives, and evaluation criteria** established for the Project. Please note that the "Purpose and Need" and "Goals and Objectives" were defined in previous stages of this study. In response to the public comments received in June 2017, new alignment Concepts were developed, evaluated with the expectation that they will be forwarded to the Metro Board and that the Board will determine which alignments should be carried forward into the environmental document.

Figure ES-4. Evaluation Process

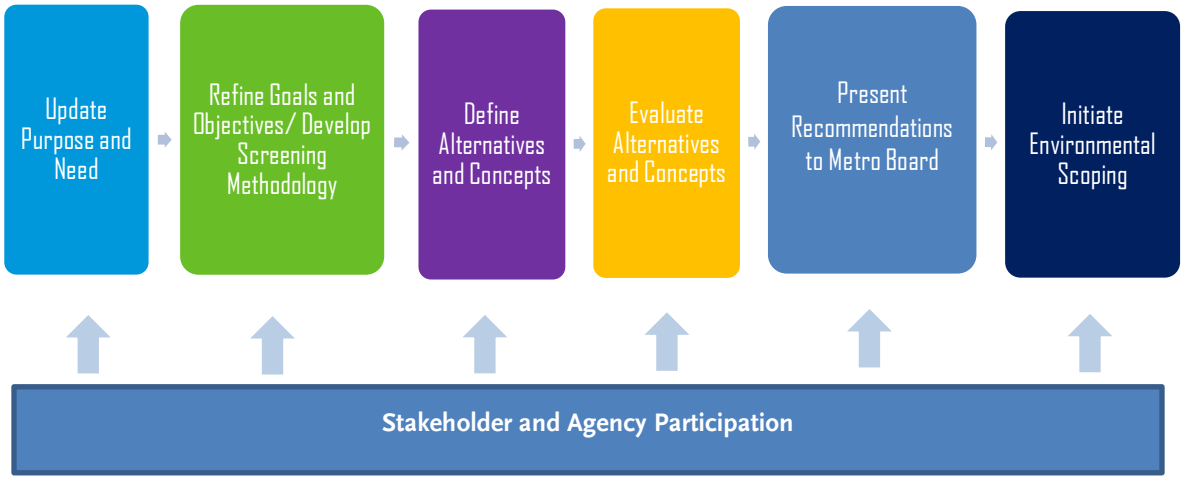


Table ES-2 provides a list of the evaluation criteria established for each goal and set of objectives.

Table ES-2. Goals, Objectives, and Evaluation Criteria

Goals	Objectives	Evaluation Criteria
1. Provide Mobility Improvements	1.1 Improves travel speeds and reduces travel times	▪ Daily hours of user benefits ▪ Minutes of travel time from southern to northern termini
	1.2 Supports other transit systems along the corridor	▪ Effects to other Metro Rail Lines ▪ Streamlines/improves customer experiences (number of daily one-seat rides)
	1.3 Connects with the greater transit network	▪ Connections to other Metro Rail Lines ▪ Direct access to regional rail (commuter rail) ▪ Potential for future extensions
	1.4 Provides an alternative to a congested freeway and arterial network. Serves local and regional trips	▪ Number of daily boardings ▪ Number of new transit trips ▪ Peak load points versus operational limits
	1.5 Supports active transportation and first/last mile connections	▪ Quality of the pedestrian environment and public realm near station areas ▪ Potential connections to bicycle facilities
2. Support Local and Regional Land Use Plans and Policies	2.1 Serves major employment centers and high-density residential neighborhoods	▪ 2042 population density within ½ mile of stations ▪ 2042 employment density within ½ mile of stations
	2.2 Encourages local economic development, projects, plans, and jobs	▪ Consistent with Plans and Metro's policies supporting Transit-Oriented Communities ▪ Supports land values and real estate market trends ▪ Potential Joint Use/Joint Development Opportunities within ¼ mile of stations
	2.3 Serves affordable housing developments	▪ Number of existing affordable housing units within ½ mile of stations
	2.4 Supports and is consistent with local plans	▪ Consistent with development patterns and land uses (scale/intensity of development) ▪ Consistent with ongoing planning efforts that update zoning/development standards

Goals	Objectives	Evaluation Criteria
3. Minimize Environmental Impacts	3.1 Minimizes environmental and community impacts	▪ Reduction in regional vehicle miles traveled ▪ Level of effects to sensitive uses (e.g., historic properties)
	3.2 Minimizes impacts to the transportation network	▪ Impacts to roadway travel lanes, parking, and truck movements ▪ Disruption to existing rail Right-of-Way (ROW)
	3.3 Minimizes other environmental impacts	▪ Impacts to visual, noise, hazards and other environmental considerations
4. Ensure Cost Effectiveness and Financial Feasibility	4.1 Costs are financially feasible	▪ Rough-Order-of-Magnitude capital costs
	4.2 Provide a cost-effective project	▪ Capital cost compared to number of new riders per year
	4.3 Minimizes risk of cost increase	▪ Intensity of engineering challenges ▪ Amount of property acquisition
5. Ensure Equity	5.1 Provides benefits to transit-dependent and minority populations	▪ Percentage of transit-dependent persons within ½ mile of stations
	5.2 Minimizes adverse effects to an EJ community	▪ Potential adverse effects to EJ communities
	5.3 Provision of new reliable fixed service to underserved communities	▪ New fixed service to transit-dependent persons around station areas
	5.4 Serves low-income riders	▪ Estimated number of low-income riders

ES.6 Northern Alignment Alternatives and Concepts

For purposes of assessing all eight of the Northern Alignment Alternatives and Concepts, the northern section of the alignment is generally assumed to be the portion of the WSAB alignment north of the Florence/Salt Lake Station in the City of Huntington Park. The original four Northern Alignment Alternatives (A through D) were presented during the 2017 Public Scoping Meetings (Figure ES-5). The new Northern Alignment Concepts (E through H) were developed to address concerns raised during the 2017 Public Scoping Period (Figure ES-6). Table ES-3 summarizes major characteristics of the Concepts followed by a description of the alignments and stations.

Original Northern Alignment Alternatives

A. **Pacific/Alameda** – Extends approximately 7.4 miles between LAUS and Florence/Salt Lake Station along Pacific Boulevard/Santa Fe Avenue then Alameda Street. This concept would provide five stations north of Florence/Salt Lake: LAUS (with Station Options above the Metro Gold Line or at Platform 2 in the LAUS Rail Yard[2]), Little Tokyo, Arts District, Pacific/Vernon, and Pacific/Randolph (Figure ES-7).

B. **Pacific/Vignes** – Extends approximately 7.2 miles between LAUS and the Florence/Salt Lake Station along Pacific Boulevard/Santa Fe Avenue then Vignes Street. This concept would provide four stations north of Florence/Salt Lake: LAUS (LAUS Rail Yard), Arts District, Pacific/Vernon, and Pacific/Randolph (Figure ES-8).

C. **Alameda (aerial)** – Extends approximately 8.0 miles between LAUS and the Florence/Salt Lake Station along the Metro Blue Line then Alameda Street. This concept would provide seven stations north of Florence/Salt Lake: LAUS (LAUS Rail Yard), Little Tokyo, 7th/Alameda, Washington, Vernon, Slauson, and Pacific/Randolph (Figure ES-9).

D. **Alameda/Vignes** – Extends approximately 8.1 miles between LAUS and the Florence/Salt Lake Station along the Metro Blue Line then Alameda Street to Vignes Street. This concept would provide seven stations north of the Florence/Salt Lake Station: LAUS (LAUS Rail Yard), Arts District, 7th/Alameda, Washington, Vernon, Slauson, and Pacific/Randolph (Figure ES-10).

New Northern Alignment Concepts

E. **Alameda (underground)** – Extends approximately 7.9 miles between LAUS and the Florence/Salt Lake Station along the Metro Blue Line and Alameda Street. This concept would provide seven stations north of Florence/Salt Lake: LAUS (with station options in the LAUS Forecourt or East of the Metropolitan Water District Building), Little Tokyo, Arts District South, Washington, Vernon, Slauson, and Pacific/Randolph (Figure ES-11).

F. **Alameda/Center** – Extends approximately 8.1 miles between LAUS and the Florence/Salt Lake Station along the Metro Blue Line, Alameda Street then Center Street. This concept would provide seven stations north of the Florence/Salt Lake

[2] Concepts connecting to LAUS via aerial alignment into the LAUS Rail Yard have two potential terminus options. Option A: above the existing Gold Line platforms and Option B: Platform 2.

Station: LAUS (LAUS Rail Yard), Arts District North, Arts District South, Washington, Vernon, Slauson, and Pacific/Randolph (Figure ES-12).

G. **Downtown Transit Core** – Extends approximately 8.0 miles between the Downtown Transit Core and the Florence/Salt Lake Station; parallel to the Metro Blue Line then primarily under Alameda, 7th and 8th Streets. This concept would provide seven stations north of Florence/Salt Lake: 7th Street/Metro Center or Pershing Square[3]), South Park/Fashion District, Arts District South, Washington, Vernon, Slauson, and Randolph (Figure ES-13). Please note that references to the Downtown Transit Core terminus refers to a new underground station at 8th and Flower Streets with an underground pedestrian connection to the existing 7th/Metro Center Station. A potential terminus at Pershing Square refers to a new underground station at 5th Street and Broadway with an underground pedestrian connection to the existing Pershing Square Station.

H. **Arts District/6th Street** – Extends approximately 7.6 miles between LAUS and the Florence/Salt Lake Station along the Metro Blue Line then underground from the Blue Line to the Arts District/6th Street Station. This concepts then assumes a revenue service extension of the Red/Purple Line to LAUS. This concept would provide four stations north of the Florence/Salt Lake Station: Arts District/6th Street, Vernon, Slauson, and Pacific/Randolph (Figure ES-14).

All Alternatives and Concepts would converge in the City of Huntington Park and follow the San Pedro Subdivision for 11 miles from the Florence/Salt Lake Station to the Pioneer Station in City of Artesia. Eight proposed stations would be located within the rail ROW along the southern portion of the Project. The San Pedro Subdivision is owned by the Ports of Long Beach and Los Angeles.

Table ES-3. Characteristics of the Northern Alignment Alternatives and Concepts

Alternative/ Concept	Length [1]	Preliminary Proposed Configuration [1]	# of Proposed Stations [1]
A. Pacific/Alameda	7.7 miles	3.6 miles aerial; 2.9 miles at-grade; 1.2 miles underground	5 stations: 3 aerial; 1 at-grade; 1 underground
B. Pacific/Vignes	7.5 miles	3.0 miles aerial; 2.9 miles at-grade; 1.6 miles underground	4 stations: 2 aerial; 1 at-grade; 1 underground
C. Alameda (aerial)	8.3 miles	5.8 miles aerial; 2.5 miles at-grade	7 stations: 6 aerial; 1 at-grade
D. Alameda/Vignes	8.3 miles	5.0 miles aerial; 2.5 miles at-grade; 0.8 miles underground	7 stations: 5 aerial; 1 at-grade; 1 underground
E. Alameda (underground)	8.1 miles	3.2 miles aerial; 2.5 miles at-grade; 2.4 miles underground	7 stations: 3 aerial; 1 at-grade; 3 underground
F. Alameda/Center	8.2 miles	3.6 miles aerial; 2.4 miles at-grade; 2.2 miles underground	7 stations: 4 aerial; 1 at-grade; 2 underground
G. Downtown Transit Core	8.1 miles	2.8 miles aerial; 3.2 miles at-grade; 2.1 miles underground	7 stations: 3 aerial; 1 at-grade; 3 underground

[3] Note that initial evaluations indicated higher mobility benefits for a terminus station near 7th Street/Metro Center compared to Pershing Square. However, given potential capacity and operational constraints resulting from the additional passengers connecting from a terminus at 8th Street and Flower, both the 7th Street/Metro Center and Pershing Square Stations should continue to be evaluated as part of Concept G.

Alternative/ Concept	Length [1]	Preliminary Proposed Configuration [1]	# of Proposed Stations [1]
H. Arts District/6th Street	7.6 miles	2.6 miles aerial; 2.4 miles at-grade; 2.6 miles underground	4 stations: 2 aerial; 1 at-grade; 1 underground

Note: [1] Description is provided between the Northern Terminus Station and the Florence/Salt Lake Station.

Figure ES-5. WSAB Transit Corridor Original Northern Alignment Alternatives

Figure ES-6. WSAB Transit Corridor New Northern Alignment Concepts

Figure ES-7. A) Pacific/Alameda Northern Alignment Alternative

Figure ES-8. B) Pacific/Vignes Northern Alignment Alternative

Figure ES-9. C) Alameda (aerial) Northern Alignment Alternative

Figure ES-10. D) Alameda/Vignes Northern Alignment Alternative

Figure ES-11. E) Alameda (underground) Northern Alignment Concept

Figure ES-12. F) Alameda/Center Northern Alignment Concept

Figure ES-13. G) Downtown Transit Core Northern Alignment Concept

Figure ES-14. H) Arts District/6th Street Northern Alignment Concept

ES.7 Screening Evaluation

The screening evaluation was conducted to determine how well each of the eight Northern Alignment Alternatives and Concepts met the goals and objectives of the Project, as summarized in Table ES-2. As previously identified, the five Project goals are:

- Goal 1: Provide Mobility Improvements
- Goal 2: Support Local and Regional Land Use Plans and Policies
- Goal 3: Minimize Environmental Impacts
- Goal 4: Ensure Cost Effectiveness and Financial Feasibility
- Goal 5: Ensure Equity

The goals and objectives in this Screening Report were assessed on their potential performance in qualitative and quantitative measures. A "high", "medium", or "low" rating was assigned based on the alternative's or concept's ability to meet the project's goals and objectives. Table ES-4 presents the typical rating methodology for each criterion.

Table ES-4. Rating Methodology

Rating		Description
●	High	A high rating indicates the alternative or concept highly supports and satisfies the criterion, or has a low potential for negative impacts.
◑	Medium	A medium rating indicates the alternative or concept moderately supports the criterion, or has a moderate potential for negative impacts.
○	Low	A low rating indicates that an alternative or concept does not support or conflicts with the criterion, or has a high potential for negative impacts.

Findings of the screening evaluation are based on individual criteria analyzed for each of the alternatives and concepts, and is then summarized through ratings of the major objectives (high, medium, or low). Note that no weighting was applied to the results of the screening evaluation as each goal was given equal consideration. The resulting evaluation demonstrates how each alternative and concept compares to the major goals of the Project with an overall high, medium, or low rating.

Goal 1: Provide Mobility Improvements

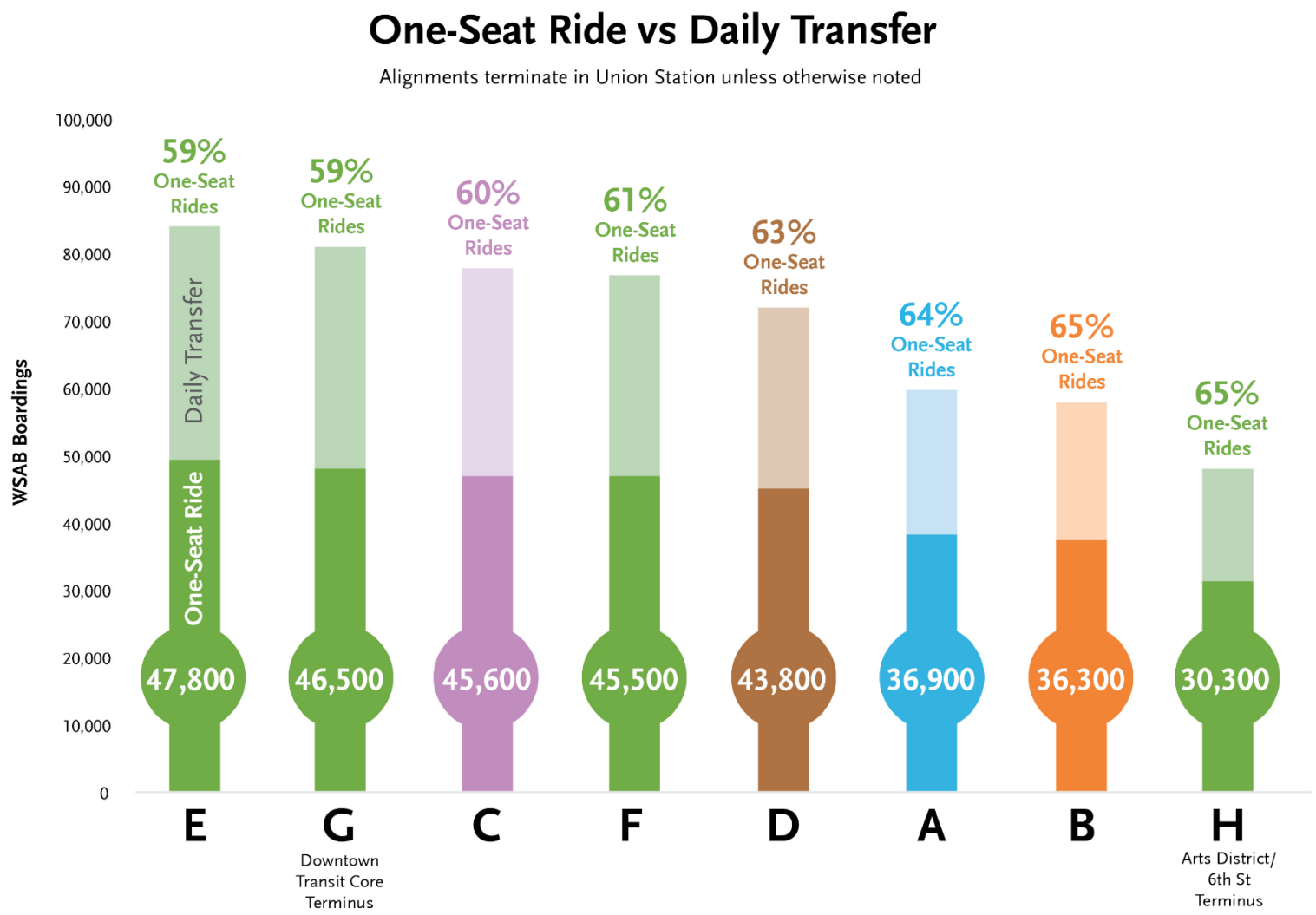
Based on the criterion analyzed, alignments along Alameda Street (Alternatives C and D, and Concepts E and F) and Concept G: Downtown Transit Core would provide the greatest overall mobility improvement benefits (Table ES-5). These Alternatives and Concepts connect directly to LAUS or the Downtown Transit Core and serve high-density residential and employment corridors, resulting in greater user benefits (overall time savings to the passenger) and higher daily boardings (each time a passenger boards a transit vehicle). These Alternatives and Concepts also directly serve numerous existing and planned Metro and regional rail lines and would be supported by first-/last-mile connections (bicycle and pedestrian accessibility), enhancing the overall mobility of the transit network. Figure ES-15 presents a comparison of one-seat rides versus daily transfers by Alternatives and Concepts.

Table ES-5. Goal 1: Provide Mobility Improvements

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
1.1 Improves travel speeds and reduces travel times (daily hours of user benefits)	22,000 hours	22,500 hours	24,000 hours	23,500 hours	25,000 hours	24,000 hours	24,000 hours	18,500 hours
1.2 Improves travel speeds and reduces travel times inclusive of any necessary transfers (minutes of travel time)	36.6 minutes	34.5 minutes	35.5 minutes	35.5 minutes	33.5 minutes	34.0 minutes	33.6 minutes	37.5 minutes
1.3 Supports other transit systems (effects to other Metro Lines)	Medium	Medium	Medium	Medium	Medium	Medium	High	Low
1.4 Supports other transit systems (daily one-seat ride)	36,900 daily one-seat rides	36,300 daily one-seat rides	45,600 daily one-seat rides	43,800 daily one-seat rides	47,800 daily one-seat rides	45,500 daily one-seat rides	46,500 daily one-seat rides	30,300 daily one-seat rides
1.5 Connects with the greater transit network (connections to Metro Lines, regional rail and future extensions)	Medium	Low	High	Medium	High	Medium	Medium	Low
1.6 Provides an alternative to freeway and arterial network. Serves local and regional trips. (Daily boardings; new transit trips, peak operational limits)	58,000 Boardings (24,500 new riders)	56,000 Boardings (25,000 new riders)	75,500 Boardings (26,000 new riders)	69,500 Boardings (25,500 new riders)	81,500 Boardings (27,000 new riders)	74,500 Boardings (26,000 new riders)	78,500 Boardings (25,000 new riders)	46,500 Boardings (19,500 new riders)
1.7 Supports active transportation and first/last mile connections (bicycle and pedestrian connections)	Medium	Medium	Medium	Medium	Medium	Medium	High	Low
Goal 1 Ratings	◑	◑	●	●	●	●	●	○

Note: Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments.

Figure ES-15. WSAB Transit Corridor Study Area One-Seat Ride vs. Transfers



Goal 2: Support Local and Regional Land Use Plans and Policies

TOCs are places (such as corridors or neighborhoods) that, by their design, allow people to drive less and access transit more. A TOC maximizes equitable access to a multi-modal transit network as a key organizing principle of land use planning and community development. TOCs differ from TODs in that a TOD is a specific building or development project that is fundamentally shaped by close proximity to transit. TOCs promote equity and sustainable living in a diversity of community contexts by (a) offering a mix of uses that support transit ridership of all income levels (e.g. housing, jobs, retail, services and recreation); (b) ensuring appropriate building densities, parking policies, and urban design that support accessible neighborhoods connected by multi-modal transit; and (c) ensure that transit related investments provide equitable benefits that serve local, disadvantaged and underrepresented communities.[4]

With regard to land values and real estate market trends, the greatest densities permitted in the Downtown Core (regional center general plan land use designation) are directly associated with the higher assessed parcel valuations from the LA County Assessor. Concept G includes the Pershing Square, 7th Street/Metro Center and the Fashion District communities and stands out with the highest assessed value ratio, which is generally indicative of maximum economic development opportunity, although the buy-in is high. The other Alternatives and Concepts essentially show ratios where the largest component of the total assessed valuation for these station areas is land. While traditionally the development buy-in is low and risks are high, emerging residential housing markets in areas south and east of the downtown core represent substantial development opportunities. In the short term, the underlying land use entitlements and surrounding remaining industrial uses are the likely factors that slow the pace of new growth and development in these station areas.

Overall, Concept G provides the greatest compatibility with existing and planned land uses as the proposed stations along the corridor serve the second-highest population density, the highest employment density, and affordable housing units. Concept G would also be supportive of TOC investments and development patterns within downtown Los Angeles. Although other Alternatives and Concepts connecting to LAUS (Alternatives A, B, C, D and Concepts E and F) would generally serve high population and employment densities, these alignments would offer only moderate support of local land use and regional plans and policies in terms of land use, affordable housing, and development patterns.

It has been noted that the northern terminus station proposed in Concept H provides an opportunity to connect to an emerging TOC. However, compared to potential TOC investment and development near the Downtown Core and LAUS, Concept H would not connect to the highest population and employment densities within downtown Los Angeles.

[4] Where Metro identifies disadvantaged and underrepresented communities, included are lower-income households as well as the following protected categories as defined by the California Fair Employment and Housing Act (FEHA): race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age for individuals over forty years of age, military and veteran status, and sexual orientation.

Table ES-6. Goal 2: Support Local and Regional Land Use Plans and Policies

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
2.1 Serves major employment centers and high-density residential (2042 Population Density)	27,880 persons/ square mile	17,670 persons/ square mile	16,180 persons/ square mile	10,350 persons/ square mile	16,040 persons/ square mile	16,740 persons/ square mile	24,160 persons/ square mile	1,980 persons/ square mile
2.2 Serves major employment centers and high-density residential (2042 Employment Density)	15,130 jobs/ square mile	10,100 jobs/ square mile	15,520 jobs/ square mile	11,200 jobs/ square mile	14,520 jobs/ square mile	13,510 jobs/ square mile	44,260 jobs/ square mile	11,210 jobs/ square mile
2.3 Encourages local economic development (TOC policies; supports land values; potential joint development opportunities)	Medium	Medium	Medium	Medium	Medium	Medium	High	Low
2.4 Serves affordable housing developments (number affordable housing units near stations)	3,750 affordable housing units	1,270 affordable housing units	4,590 affordable housing units	3,960 affordable housing units	5,600 affordable housing units	5,040 affordable housing units	20,980 affordable housing units	550 affordable housing units
2.5 Supports and is consistent with local plans (development patterns; character of public realm; development standards)	Medium	Medium	Medium	Medium	Medium	Medium	High	Low
Goal 2 Ratings	◑	◑	◑	◑	◑	◑	●	○

Note: Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments.

Goal 3: Minimize Environmental Impacts

Concept E provides the greatest overall potential to minimize environmental impacts. Concept E would be primarily underground, and would likely avoid impacts that would affect the at-grade environment (e.g., sensitive uses, transportation network, visual impacts, hazards, etc.). This concept would also have the highest reduction in vehicle miles traveled (VMT) from travelers reducing their auto trips and result in a reduction in greenhouse gas and other pollutants (Table ES-7).

Alternative B and Concepts F and H would have moderate environmental impacts and partially avoid sensitive uses. Alternative B and Concept F would have moderate impacts to the transportation network and other environmental considerations and have high VMT reductions. Although Concept H would likely avoid any sensitive uses, the concept would offer the lowest VMT reduction compared to all of the alternatives and concepts considered.

It is anticipated that Alternatives A, C, and D and Concept G would need to address significant environmental impacts given the potential effects to sensitive uses and other potential environmental impacts. Alternative A and C would include an aerial alignment through the Little Tokyo Station and would likely affect sensitive uses and travel lanes where columns and/or straddle bents may restrict turns, reduce lane widths, and interrupt sight distances. Alternatives A and C would also likely result in visual and noise impacts near the Little Tokyo community and Alameda Street and have a higher potential for hazardous materials encounters in the heavily industrial area of Los Angeles. Although Alternative D would avoid direct surface impacts to the Little Tokyo community, it would likely result in transportation and visual impacts related to the aerial alignment along Alameda Street south of 5th Street. The columns and/or straddle bents associated with the Alternative D aerial structure would result in transportation impacts similar to impacts that would occur for Alternatives A and C. Concept G may likely affect the historic core of Los Angeles and its associated designated Historic Cultural Monuments. Concept G may also have a high potential for vibration impacts when passing underground due to the historic and dense nature of the downtown core area. Additionally, this Concept has one of the lowest VMT reductions.

It should be noted that while Goal 3 is to minimize adverse environmental impacts, the ability to maximize environmental benefits should also be considered. VMT reduction is greater for Alternatives and Concepts that connect directly to LAUS. As a major Metro transfer point and Metrolink's hub station, LAUS has the ability to provide direct regional rail connections to the WSAB corridor that do not currently exist. This will enable certain automobile drivers that currently travel long distances to and from the WSAB corridor to have a potential rail option for that trip instead. For example, someone who currently drives from Claremont to Bellflower for work could now make that trip on rail. As such, it is notable that both Concepts G and H, whose alignments require an extra transfer to connect to LAUS, do not reduce VMT as significantly as the other alignments and would therefore have less environmental benefits.

Table ES-7. Goal 3: Minimize Environmental Impacts

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
3.1 Minimizes environmental and community impacts (Reduction in VMT)	624,400 VMT reduction	645,500 VMT reduction	621,100 VMT reduction	611,500 VMT reduction	648,800 VMT reduction	629,100 VMT reduction	458,300 VMT reduction	327,300 VMT reduction
3.2 Minimizes environmental and community impacts (Effects to sensitive uses)	Low	Medium	Low	Medium	High	Medium	Low	Medium
3.3 Minimizes impacts to the transportation network (Impacts to travel lanes, parking and truck movements; disruption to existing rail ROW)	Medium	Medium	Low	Low	High	Medium	High	Medium
3.4 Minimizes other potential environmental impacts (Impacts to visual, noise, hazards, and other environmental topics.)	Low	Medium	Low	Low	High	Medium	Low	Medium
Goal 3 Ratings	○	◑	○	○	●	◑	○	◑

Note: Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments.

Goal 4: Ensure Cost Effectiveness and Financial Feasibility

Overall, the original four Northern Alignment Alternatives would demonstrate medium findings of cost effectiveness and financially feasibility as they were developed as a combination of lower cost assumptions, such as at-grade, aerial, and minimal underground segments. Given public scoping comments and stakeholder input, the four new Northern Alignment Concepts offers reduced social costs (i.e., environmental and equity) of at-grade and aerial alignments by proposing variations with new and longer underground segments. The trade-off, however, is higher capital cost.

Based on the updated Rough-Order-of-Magnitude (ROM) capital costs, engineering challenges, and potential amount of property acquisition needed, the Northern Alignment Concepts E, F, and G would rate low as their overall capital costs would be higher than the four original Northern Alignment Alternatives. Concept H has a lower capital cost than the other Northern Alignment Alternatives and Concepts but has the highest capital cost / new riders per year. This makes Concept H the least cost-effective alignment since it attracts far fewer new riders than the other Northern Alignment Alternatives and Concepts.

Concepts E, F, G, and H present the greatest potential engineering challenges due to the length of tunneling required adjacent to vertical structures ranging from low to high rise in a highly developed urban area with existing infrastructure. These engineering challenges and acquisition needs result in risks, which could decrease the overall cost effectiveness of these concepts (Table ES-8).

Table ES-8. Goal 4: Ensure Cost Effectiveness and Financial Feasibility

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
4.1 Costs are financial feasible (*ROM capital costs in $Billions)	$4.7 Billion (2017$)	$4.7 Billion (2017$)	$4.6 Billion (2017$)	$5.0 Billion (2017$)	$5.8 Billion (2017$)	$5.4 Billion (2017$)	$5.8 Billion (2017$)	$4.5 Billion (2017$)
4.2 Provide a cost-effective project (capital cost / new riders per year)	$607	$596	$557	$620	$679	$655	$729	$740
4.3 Minimizes risk of cost increase (engineering challenges)	Higher risks with tunneling in Arts District	Higher risks with tunneling in Arts District	Less risk with aerial or at-grade	Risks with short tunneling in Arts District	Higher risks with tunneling	Higher risks with tunneling	Higher risks with tunneling	Higher risks with tunneling
4.4 Minimizes risk of cost increase (property acquisition)	Medium risks due to property impacts	Medium risks due to property impacts	Higher risks due to more property impacts	Higher risks due to more property impacts	Lower risk due to reduced property impacts	Medium risks due to property impacts	Lower risk due to reduced property impacts	Lower risk due to reduced property impacts
Goal 4 Ratings	◑	◑	◑	◑	○	○	○	○

Notes: *ROM capital cost is based on early engineering assumptions and are provided to demonstrate general differentiators in costs.
Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments

Goal 5: Ensure Equity

The goal to ensure equity focuses on benefits to transit-dependent and minority populations, and low-income groups and the potential for adverse effects to Environmental Justice (EJ) communities. EJ communities are areas that are made up by a majority of minority or low-income individuals who may be disproportionately affected by the construction of a new transit project relative to other communities within the city. Concept G would serve the highest amount of transit-dependent persons (51.6 percent are transit dependent within ½ mile of the stations) and the highest number of low-income riders (32,400 low-income riders), and would provide new fixed service to underserved communities near the Arts District South and South Park/Fashion District Stations. This concept would also likely have minimal adverse effects to EJ communities such as Little Tokyo and Chinatown based on its proximity away from the communities. As a result, Concept G would receive the highest rating.

Both Concept E and Concept F would serve a high number of transit-dependent populations (38.4 percent and 38.8 percent, respectively) and low-income riders (31,700 and 28,400 low-income riders, respectively). Therefore, both of these concepts received high ratings.

Alternative B and Concept H would serve the lowest percentage of transit-dependent persons (21.6 percent and 24.1 percent, respectively) and low-income riders (21,300 and 19,000 low-income riders, respectively) compared to all other Alternatives and Concepts. As Alternative B would only provide two stations and Concept H would only provide one station for the entire northern alignment segment, this would limit the provision of new fixed service to transit-dependent communities compared to the other Alternatives and Concepts.

Table ES-9. Goal 5: Ensures Equity

Evaluation Criteria	Northern Alignment Alternatives and Concepts							
	Alt A Pacific/ Alameda	Alt B Pacific/ Vignes	Alt C Alameda (aerial)	Alt D Alameda/ Vignes	Concept E Alameda (underground)	Concept F Alameda/ Center	Concept G Downtown Transit Core	Concept H Arts District/ 6th Street
5.1 Provides benefits to transit-dependent and minority populations (% transit-dependent persons within ½ mile of stations)	34.7% transit dependent	21.6% transit dependent	39.7% transit dependent	35.8% transit dependent	38.4% transit dependent	38.8% transit dependent	51.6% transit dependent	24.1% transit dependent
5.2 Minimizes adverse effects to an EJ community (potential adverse effects to EJ communities)	Low	Medium	Low	Medium	High	High	High	High
5.3 Provision of new reliable fixed service to underserved communities (new fixed service to transit-dependent persons around station areas)	Medium	Medium	Medium	Medium	Medium	Medium	High	Low
5.4 Serves low-income riders (estimated number of low-income riders)	22,100 low-income riders	21,300 low-income riders	29,600 low-income riders	26,800 low-income riders	31,700 low-income riders	28,400 low-income riders	32,400 low-income riders	19,000 low-income riders
Goal 5 Ratings	◑	○	◑	◑	●	●	●	○

Note: Since the proposed alignment for all Alternatives and Concepts is the same south of Florence/Salt Lake Station, evaluation results shown are attributed to differences in the Northern Alignments

ES.8 Community and Stakeholder Outreach

To support development of the new Northern Alignment Concepts and discuss the original four Alternatives, community update meetings were held to communicate Alternatives and new Concepts being considered with stakeholders along the WSAB Transit Corridor. Five meetings were held between March 12 and March 19, 2018, with over 250 people participating in-person and approximately 85 written comment cards received. Over 270 people have viewed the recording of the Artesia webcast as of April 2, 2018. Table ES-10 presents the meeting details. Comments also continue to be received via the project e-mail address and the online comment submission form available on the project website. Two additional public meetings are planned for late April/early May 2018, prior to the Metro Board decision.

Table ES-10. WSAB Public Outreach Meetings March 2018

Meeting #	Community	Date	Time	Location	Number of Participants
1	Little Tokyo	Monday, March 12, 2018	3 to 5 PM	Nishi Hongwanji Buddhist Temple 815 E 1st St, Los Angeles, CA 90012	75
2	Little Tokyo	Monday, March 12, 2018	6 to 8 PM	Nishi Hongwanji Buddhist Temple 815 E 1st St, Los Angeles, CA 90012	36
3	Artesia*	Tuesday, March 13, 2018	6 to 8 PM	Albert O. Little Community Center 18750 Clarkdale Av, Artesia, CA 90701	52
4	Bell	Saturday, March 17, 2018	10 AM to 12 PM	Bell Community Center 6250 Pine Ave, Bell, CA 90201	26
5	Downey	Monday, March 19, 2018	6 to 8 PM	Barbara J. Riley Community and Senior Center 7810 Quill Dr., Downey, CA 90242	64

Note: *The Artesia meeting was also conducted as a live webcast, which was recorded and is available for viewing on the project website.

Meeting participants were encouraged to provide comments, and were specifically asked to consider the following about the new Northern Alignment Concepts:

1. Where would you prefer to end/begin in downtown (i.e., Downtown Transit Core, Union Station, Arts District)?
2. Are there destinations beyond the WSAB Transit Corridor you ultimately want to reach?
3. What are your comments on the new Northern Alignments?

In addition, presentations have been made to the Gateway Cities Council of Governments Transportation Committee and over twenty stakeholder and community organizations.

Comments received cited both LAUS and the Downtown Transit Core as the top preferences for beginning/ending their trips, followed by the Arts District. Other destinations meeting participants desire to reach include Pasadena, Glendale, Burbank, Orange County, and Metrolink/Amtrak connections to other cities from LAUS. Not everyone responded to Question 3, although of those who did, Concept G was most selected, followed by Concept E. Other comments submitted pertained to pedestrian connections, safety, first/last mile in relation to a community's need, parking supply and impacts at stations, traffic around stations, property values, noise levels, budget, ridership, P3 potential, and property acquisitions.

ES.9 Findings Summary

Each of the Northern Alignment Alternatives and Concepts provides a unique set of benefits that must be considered against the potential costs and challenges. The following discussion summarizes the key findings:

- **Alternative A: Pacific/Alameda:** By serving LAUS, and providing a Little Tokyo Station and an Arts District North Station, moderate mobility benefits are achieved with long travel times (36.6 minutes), limited user benefits (22,000 hours), a moderate number of boardings (58,000) and a low number of new riders (24,500) compared to the other Alternatives and Concepts. However, this Alternative's station areas would collectively serve the highest residential and employment densities. There are also TOC opportunities near the Arts District North Station that would meet the needs of emerging communities and stakeholders. In terms of environmental impacts and ensuring equity, this Alternative would need to address significant environmental challenges with effects to sensitive uses and EJ communities like Little Tokyo. Given the tradeoffs of moderate mobility, land use and cost and likely significant environmental and social justice concerns, Alternative A receives an overall rating of **Medium/Low**.
- **Alternative B: Pacific/Vignes:** This Alternative would provide many of the same moderate benefits as the Alternative A, but would not propose a Little Tokyo Station, therefore minimizing adverse effects to that EJ community. However, without a Little Tokyo Station, this Alternative misses a key connection to the East-West Line (Gold Line/Regional Connector) thereby further limiting mobility benefits and access to high residential and employment densities. For equity, this Alternative would rate low since it would not serve a high percentage of transit dependent (21.6 percent), minority, or low-income riders (21,300) compared to the other Alternatives and Concepts. Based on the moderate mobility, land use, environmental and cost considerations; and the limited ability to ensure equity for the project; Alternative B receives an overall rating of **Medium/Low**.
- **Alternative C: Alameda (aerial):** The Alameda (aerial) Alternative provides connections to LAUS, Little Tokyo, Arts District South, and Metro Blue Line (North-South Line), resulting in significant mobility benefits with higher user benefits (24,000 hours), number of boardings (75,500) and new riders (26,000). By following the Metro Blue Line, this Alternative serves low-income and densely populated areas that would benefit from additional transit service and helps to address overcrowding on the Metro Blue Line. However, this Alternative would need to address significant environmental challenges including visual impacts from a primarily aerial alignment along Alameda

Street, through Little Tokyo, then into LAUS. Given the tradeoffs of high mobility benefits, moderate land use, equity and cost, and significant environmental concerns, Alternative C receives an overall rating of **Medium**.

- **Alternative D: Alameda/Vignes:** As with Alternative C, this Alternative provides new transit service to a transit-dependent community along the Metro Blue Line (North-South Line) and results in substantial mobility benefits including user benefits (23,500 hours), number of boardings (70,000) and new riders (25,500). With at-grade and aerial alignments, this Alternative would likely have environmental impacts near the Little Tokyo community and transportation and visual impacts along Alameda Street. This Alternative would support a moderate amount of residential and employment densities and have a medium amount of cost and risk as it limits the amount of underground segments proposed. Given the high mobility benefits, but medium findings for land use, cost and equity, and low findings for environmental impacts, Alternative D receives an overall rating of **Medium**.
- **Concept E: Alameda (underground)**: The new Concept E would provide similar or better benefits as the Alameda (aerial) Alternative with an underground alignment to address environmental concerns for the Little Tokyo community. This Concept would connect to both the North-South and East-West Lines thereby providing significant mobility benefits with higher user benefits (25,000 hours), and highest number of boardings (81,500) and new riders (27,000). By following the Metro Blue Line, then transitioning into an underground alignment, this Concept would serve low-income and densely populated areas to the south with the fastest, most direct connection into LAUS (33.5 minutes). Although this Concept would likely have less environmental impacts to consider (since it is mostly underground), it would have the highest cost and risk compared to the other alternatives and concepts. Given that Concept E would rate high in all of the goals except for cost and risk, this Concept receives an overall rating of **High**.
- **Concept F: Alameda/Center:** The new Concept F provides similar mobility benefits as Alternative D but provides a faster connection (34.0 minutes) with an underground alignment north of I-10 to the Gold Line resulting in higher number of boardings (74,500) and new riders (26,000). Since a majority of the alignment is underground, the Alternative would likely have less environmental impacts to consider. However, this would result in higher costs and risks. Given the tradeoffs of high mobility and equity benefits, moderate land use and environmental concerns; and high financial cost and risk with tunneling, Concept F receives an overall rating of **Medium/High**.
- **Concept G: Downtown Transit Core:** The new Concept G would provide a fast and direct connection (33.6 minutes) to the highest residential and employment densities in downtown Los Angeles. With emerging TOCs at South Park/Fashion District and the Arts District South Station, this Concept would provide significant mobility benefits to low-income and minority populations with 51.6 percent of persons near station areas being transit dependent. High mobility benefits include user benefits (24,000 hours), daily boardings (78,500), and new riders (25,000). Although Concept G is primarily underground, there are significant environmental impacts to consider, including potential impacts to historic uses near proposed station areas and the lower reduction in VMT compared to the other alternatives and concepts. Given the high mobility, land use, and equity benefits, but potential risk of underground tunnel costs

and environmental impact concerns, this Concept receives an overall rating of **Medium/High**.

- **Concept H: Arts District/6th Street:** The new Concept H would provide opportunities to connect to an emerging TOC near Arts District/6th Street. However, compared to the other alternatives and concepts, Concept H would provide significantly lower mobility and land use benefits. With only one station connecting to the Red/Purple Line, this Concept would generally provide limited user benefits (18,500 hours), fewest daily boardings (46,500), and fewest new riders (19,500). This Concept would also support very low population densities and a small number of low-income and minority communities since the station and alignment would primarily be located in the core industrial area of Los Angeles. Concept H would not provide comparable benefits to the other alternatives or concepts; therefore, this Concept receives an overall rating of **Low**.