2. Project Description

This chapter provides a description of the Los Angeles County Metropolitan Transportation Authority (Metro) Eastside Transit Corridor Phase 2 Project (Project). This includes the Project history and background, Project objectives, the setting and location, a description of the Build Alternatives (including design options) and No Project Alternative, the proposed construction activities, the anticipated permits and approvals, and the implementation schedule.

The Project would extend the existing Metro L (Gold) Line light rail transit (LRT) line from its current terminus at Atlantic Station in the unincorporated area of East Los Angeles to eastern Los Angeles County approximately 3.2 to 9.0 miles, depending on the Build Alternative. This Recirculated Draft EIR evaluates potential environmental impacts of three Build Alternatives and a No Project Alternative. The Build Alternatives described under **Section 2.5** are: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel Initial Operating Segment (IOS) (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3). The No Project Alternative is described in **Section 2.9**.

2.1 Background

The following provides a brief history and background of previous studies conducted and summarizes the Build Alternatives carried into this Recirculated Draft Environmental Impact Report (EIR).

The easterly extension of the Metro L (Gold) Line is being constructed in phases. In January 2002, Metro published a Final Supplemental Environmental Impact Statement (EIS) and Final Subsequent EIR for an LRT extension of the Pasadena Blue Line into East Los Angeles (later named the Metro Gold Line Eastside Extension) (Metro 2002). This project represented the first phase of the Metro L (Gold) Line Eastside Extension. In 2007, Metro initiated plans for a high-capacity transit connection for the second phase entitled the Eastside Transit Corridor Phase 2 Alternatives Analysis (AA) Report and in October 2009, the Metro Board of Directors (Metro Board) authorized staff to further study two build alternatives, the State Route (SR) 60 LRT Alternative and the Washington Boulevard LRT Alternative, as well as a No Build Alternative, and a transportation systems management (TSM) alternative for further environmental analysis (Metro 2009).

In November 2009, the first phase of the Metro L (Gold) Line Eastside Extension (to Atlantic Station) was completed. Upon completion, planning was initiated for the second phase. This second phase, known as the Eastside Transit Corridor Phase 2 Project, is the subject of this Recirculated Draft EIR. A Draft EIS/EIR was released for public review in August 2014 (Metro 2014).

The 2014 Draft EIS/EIR received comments from stakeholders and regulatory agencies. The Metro Board directed staff to conduct additional technical studies including identifying a new north-south connection to Washington Boulevard, addressing agency comments regarding the SR 60 Alternative and exploring a Combined Alternative. Based on the technical analysis and feedback received through public meetings and stakeholder workshops, the Eastside Transit Corridor Phase 2 Post Draft EIS/EIR Technical Study Report was approved by the Metro Board in November 2017 with an updated Project Definition to move forward for environmental review and analysis (Metro 2017).

The Federal Transit Administration (FTA) published a Notice of Intent (NOI) in the Federal Register on May 29, 2019 to initiate the EIS process (Federal Register 2019), and Metro issued a Notice of

Preparation (NOP) pursuant to the California Environmental Quality Act (CEQA) on May 31, 2019. The NOI/NOP included three Build Alternatives (SR 60 Alternative, Washington Alternative, and Combined Alternative) and a No Build Alternative. The NOI/NOP informed the public of the Build Alternatives, provided notice of a 45-day scoping period, and provided notice of intent to release a Supplemental/Recirculated Draft EIS/EIR. The NOI/NOP also described consideration of adopting a Locally Preferred Alternative (LPA) by the Metro Board based on the findings of the Supplemental/Recirculated Draft EIS/EIR.

Issues and constraints within or along the SR 60 Alternative became more evident as further technical environmental analysis, additional engineering design, and Metro policy and program updates were completed. In addition, conflicts with future improvements along the SR 60 freeway were also identified, including the addition of high-occupancy vehicle (HOV) lanes, bringing the existing general-purpose lanes up to current standards and the SR 60/Interstate (I) 605 Interchange Improvements project. Several environmental challenges associated with running parallel to or in an aerial configuration along the SR 60 freeway right-of-way (ROW) were also identified, such as potential impacts to adjacent sensitive land uses and environmental resources. This included crossing the Operating Industries Inc. (OII) Landfill Superfund site to avoid disturbance of contaminated materials and avoiding conflicts with Southern California Edison (SCE) overhead transmission lines. The SR 60 Alternative was also inconsistent with Metro's policies and programs that addressed equity, Transit Oriented Communities (TOC), First/Last Mile (FLM), and parking (Metro 2020a). These programs and policies were not in place when the Project was first introduced. Initial findings from the TOC and FLM assessment indicated that the SR 60 Alternative lacked potential as it correlated to the three policy criteria: TOC, FLM, and Environment and Equity. This was due to the SR 60 alignment location and the spatial nature of proposed station areas along the alignment. The Combined Alternative compounded these technical challenges as it required the addition of an underground wye junction at the current terminus of the Metro L (Gold) Line.

In February 2020, the Metro Board approved the withdrawal of the SR 60 and Combined Alternatives, which faced significant environmental and engineering challenges, and the discontinuation of the National Environmental Policy Act (NEPA) analysis. Metro subsequently notified the FTA and cooperating agencies of the decision to discontinue the NEPA environmental study (Supplemental Draft EIS) and to advance a Recirculated Draft EIR pursuant to CEQA.

2.2 Project Objectives

East Los Angeles County faces an increasing number of mobility challenges due to high population, employment growth, and a constrained transportation network. The existing terminus of Metro L (Gold) Line is located approximately four miles east of Downtown Los Angeles at Atlantic Boulevard and Pomona Boulevard in the unincorporated community of East Los Angeles. There is no rail connection for communities located to the east. Many residents within the general study area (GSA), defined in **Section 2.3**, encounter long travel delays connecting to and from downtown Los Angeles and beyond. If unaddressed, these mobility challenges pose a risk to future population and economic growth, including challenges for transit dependent populations, pedestrian and bicycle safety, capacity constraints on existing infrastructure, inefficiency of goods movement, poor air quality conditions, and other environmental considerations. If no action is taken, these transportation challenges will continue to grow. In support of the goals documented in Metro's 2020 Long Range Transportation Plan (LRTP) and Metro's Vision 2028 Strategic Plan, the Project Objectives include the following:

- Enhance regional connectivity and air quality goals by extending the existing Metro L (Gold) Line further east from the East Los Angeles terminus
- Provide mobility options to increase accessibility and convenience to and from eastern Los Angeles County
- Improve transit access to activity centers and employment within eastern Los Angeles County that would be served by the Project
- Accommodate future transportation demand resulting from increased population and employment growth
- Enable jurisdictions in eastern Los Angeles County to address their transit-oriented community goals and provide equitable development opportunities
- Improve accessibility and connectivity to transit-dependent communities

Each Build Alternative meets the Project Objectives to varying extents by creating benefits, both to the region and to local communities. By extending the existing Metro L (Gold) Line into eastern Los Angeles County, the Project will enhance access and mobility and provide connectivity to other destinations along Metro's regional system. Further, the Project will reduce travel times and the need for transfers within the system by providing a one-seat ride via the Regional Connector. By serving concentrated areas of employment, activity centers and residential communities, the Project will support transit-oriented community goals and address the mobility needs of transit-dependent populations. The Project will provide new and faster transit options which will help lead to equitable development and in-fill growth opportunities throughout eastern Los Angeles County.

2.3 Project Setting and Location

For purposes of describing the Project, two study areas have been defined. The GSA, which is regional in scope and scale, consists of a wider area that is expected to be served by the Project. The GSA currently has limited transportation options, which contributes to long travel delays connecting to and from downtown Los Angeles and would be served by improved access to LRT. The detailed study area (DSA) encompasses the local area within approximately two miles from the Project alignment.

The GSA establishes the study area for environmental resources that are regional in scope and scale, such as the regional transportation network, vehicle miles traveled (VMT), travel demand, and the regional population, housing, and employment context. The GSA includes several jurisdictions within Los Angeles County including the cities of Bell, Commerce, El Monte, Industry, Los Angeles, Montebello, Monterey Park, Pico Rivera, Rosemead, South El Monte, Santa Fe Springs, Whittier, unincorporated areas of Los Angeles County, which include East Los Angeles and West Whittier-Los Nietos, and other cities within the San Gabriel Valley. The GSA is generally bounded by I-10 to the north, Peck Road in South El Monte and Lambert Road in Whittier to the east, I-5 and Washington Boulevard to the south, and I-710 to the west. **Figure 2.1** presents the boundaries of the GSA as well as the regional transportation network and related jurisdictions and the DSA, described below.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.1. Alternative 1 Washington GSA and DSA

The DSA establishes a study area to evaluate environmental resources that are more sensitive to the physical location of the Build Alternatives, such as potential impacts associated with noise and safety hazards. The DSA is generally bounded by a half-mile to two-mile radius from the Project alignment's centerline (see **Figure 2.1** for Alternative 1 DSA). It primarily encompasses the five cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier and communities of unincorporated East Los Angeles and Whittier-Los Nietos, which are located along the alignment corridor.

The DSA for Alternative 2 Atlantic to Commerce/Citadel Initial Operating Segment (IOS) and Alternative 3 Atlantic to Greenwood IOS would not extend as far east as the DSA for Alternative 1 and is shown in **Figure 2.2** and **Figure 2.3**. The DSA for Alternative 2 and Alternative 3 primarily includes the cities of Commerce and Montebello and community of unincorporated East Los Angeles.

Both the GSA and DSA include a diverse mix of uses and activity centers, including single- and multi-family residences, commercial and retail uses, industrial development, parks and recreation, health and medical uses, educational institutions, flood control facilities, and vacant land. The Project would traverse densely populated, low-income, and heavily transit-dependent communities with major activity centers within the Gateway Cities subregion of Los Angeles County. **Figure 2.4** shows the land uses within the GSA and DSA. Further discussion on land use surrounding the Project can be found in Section 3.10, Land Use, and the Eastside Transit Corridor Phase 2 Land Use Impacts Report (Appendix K).

Major activity centers would support the Project both regionally within the GSA and locally in the DSA. This includes large educational institutions, such as Whittier College, and East Los Angeles Community College, recreation areas serving local residents, major retail and commercial centers (e.g., Citadel Outlets and the Historic Whittier Boulevard Shopping District), civic centers (Pico Rivera City Center), and medical centers (Whittier Presbyterian Intercommunity Hospital). In addition, many businesses and industrial and commercial areas are located near the major arterials in the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. **Figure 2.5** shows major activity centers within the GSA and DSA. Additional activity center details are further described in Section 6.2 of the Eastside Transit Corridor Phase 2 Community and Neighborhoods Impacts Report (Appendix M).

2.4 Travel Market

As previously stated, the NOP for this study was approved in March 2019, one year after Metro released their Travel Demand Model, Corridor Based Model (CBM18) in 2018. The base year data in the CBM18 model is from 2017 and represents the most recently available data when the model was created, which was the Southern California Association of Governments' (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) (SCAG 2016). Therefore, ridership forecasts, VMT estimates, and other travel demand modeling projections for the Build Alternatives and No Project Alternative are based on the results of the CBM18 model and includes all transportation projects identified for construction and implementation in SCAG's financially constrained 2016 RTP/SCS including projects through year 2042. This data has been used to represent 2019, the base year in this study.

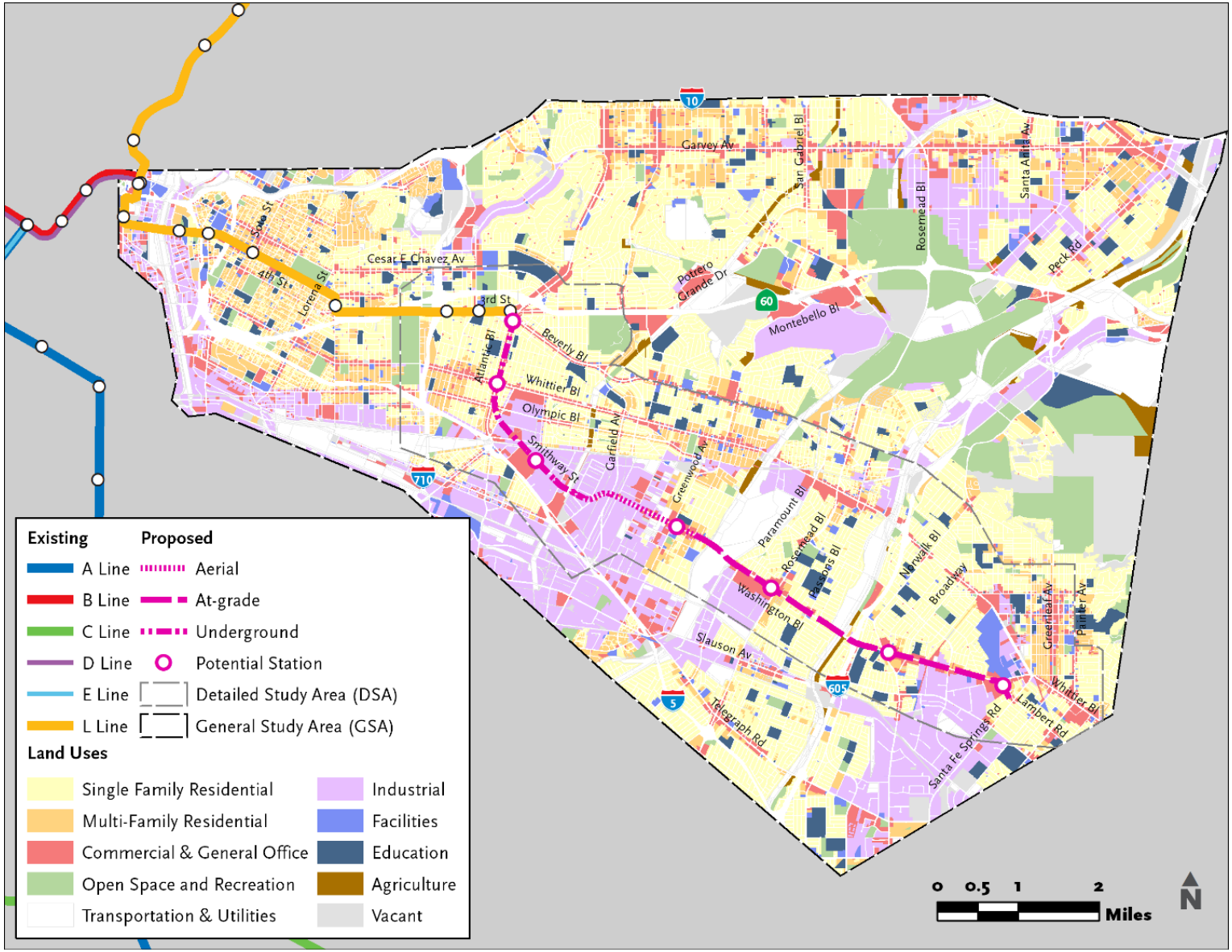
SCAG develops an RTP approximately every four years to present the transportation vision for the region, prioritize projects, and guide development. Since approval of the NOP, SCAG has released the Connect SoCal 2020-2045 RTP/SCS (2020 RTP/SCS). This updated plan is also included in this study to identify local plans, policies and regulations relative to each environmental topic.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.2. Alternative 2 Atlantic to Commerce/ Citadel IOS GSA and DSA

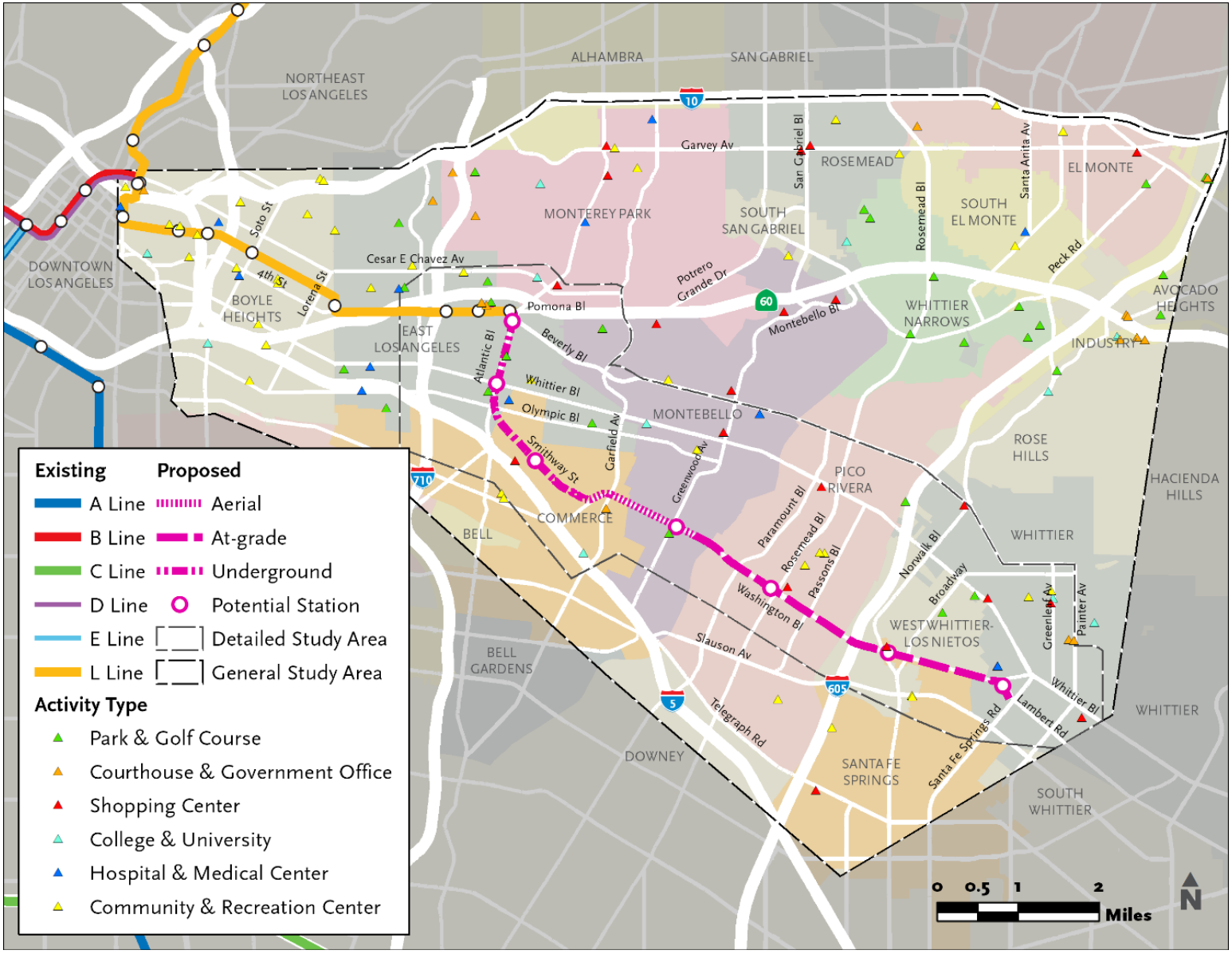
Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.3. Alternative 3 Atlantic to Greenwood IOS GSA and DSA



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.4. Land Uses



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.5. Major Activity Centers

2.5 Build Alternatives

The Project would extend the Metro L (Gold) Line LRT from the current terminus at the Atlantic Station into eastern Los Angeles County. There are three Build Alternatives and a No Project Alternative under consideration in this Recirculated Draft EIR: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel IOS (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3).

Alternative 1 has the longest alignment at approximately 9.0 miles with seven stations (one relocated/reconfigured and six new stations) and two maintenance and storage facility (MSF) site options, one in the city of Commerce and one in the city of Montebello. The alignment would terminate at Lambert station on Lambert Road in the city of Whittier. Additionally, two IOS alternatives are being evaluated in this Recirculated Draft EIR (Alternative 2 and Alternative 3). Both have the same guideway alignment east of the existing terminus at Atlantic Station but vary in length and eastern terminus. Alternatives 2 and 3 would run along the same alignment and have the same LRT design features and operating characteristics as the full length Alternative 1. However instead of extending to Lambert Road and Washington Boulevard as would Alternative 1, Alternative 2 would terminate at the Commerce/Citadel station in the city of Commerce, with tracks used only to access the MSF (i.e., non-revenue lead tracks) extending east to connect to the Commerce MSF site option. Alternative 2 is approximately 3.2 miles in length with three stations and one MSF site option. Alternative 3 would terminate at the Greenwood station on Greenwood Avenue and Washington Boulevard in the city of Montebello. Alternative 3 is approximately 4.6 miles in length with four stations and two MSF site options. Each of the IOS alternatives would therefore possess a smaller project footprint than Alternative 1.

An IOS is a segment of the project alignment that can function as a stand-alone project with independent constructability (independent of other segments or phases to be constructed). The purpose of developing and evaluating the IOS alternatives is to identify constructability options and a cost-effective solution with the greatest benefit of the Project. Pursuant to Section 15126.6 of the CEQA Guidelines, the IOSs are a reasonable range of project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project…". Metro is proceeding with IOSs on other projects as this will provide the Metro Board with flexibility in determining the most efficient and cost-effective manner to implement those projects. Alternatives 2 and 3 are evaluated in this Recirculated Draft EIR as individual Build Alternatives and would function as stand-alone projects. In the event that Metro selects an IOS as a preferred alternative, the full length of Alternative 1 may still be constructed and operated sometime in the future, contingent on future funding sources being identified and secured and compliance with CEQA's provisions for subsequent or supplemental environmental review. Additionally, as further required pursuant to Section 15126.6, the comparative merits of the alternatives are evaluated in Chapter 5, Analysis of Alternatives.

There are design options under consideration for each of the three Build Alternatives that consist of a variation in the design of the relocated/reconfigured Atlantic station (applicable to Alternatives 1, 2, and 3) and a variation in the station and alignment profile in Montebello (applicable to Alternatives 1 and 3 and the Montebello MSF site option). Construction of one design option is considered and evaluated for Alternative 2. Construction and operation of one or both design options are considered and evaluated for Alternative 1, Alternative 3, and the Montebello MSF site option.

To differentiate the impacts evaluation of a Build Alternative with or without the design option(s) incorporated, a Build Alternative without the incorporation of a design option(s) is referred to as the "base Alternative" (i.e., base Alternative 1). A Build Alternative with a design option incorporated is referred to by using the design option name (e.g., Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option). The three Build Alternatives and the design options are described in greater detail in **Section 2.5.1.3**.

Conceptual engineering designs showing the alignment plans and profiles, including potential station sites, are incorporated into this Recirculated Draft EIR (see Volume 2, Advanced Conceptual Design). These drawings are provided for illustrative and analysis purposes only and may or may not represent the Project's ultimate design and build-out.

Table 2-1 presents an overview of the various components of the Build Alternatives, including the base alignment and design options for a potential relocated/reconfigured Atlantic station under all Build Alternatives and an at-grade configuration along Washington Boulevard under consideration for Alternative 1 and Alternative 3. The following subsections summarize the Build Alternatives in more detail. The No Project Alternative is described in further detail in **Section 2.9.**

Table 2-1. Components of the Build Alternatives

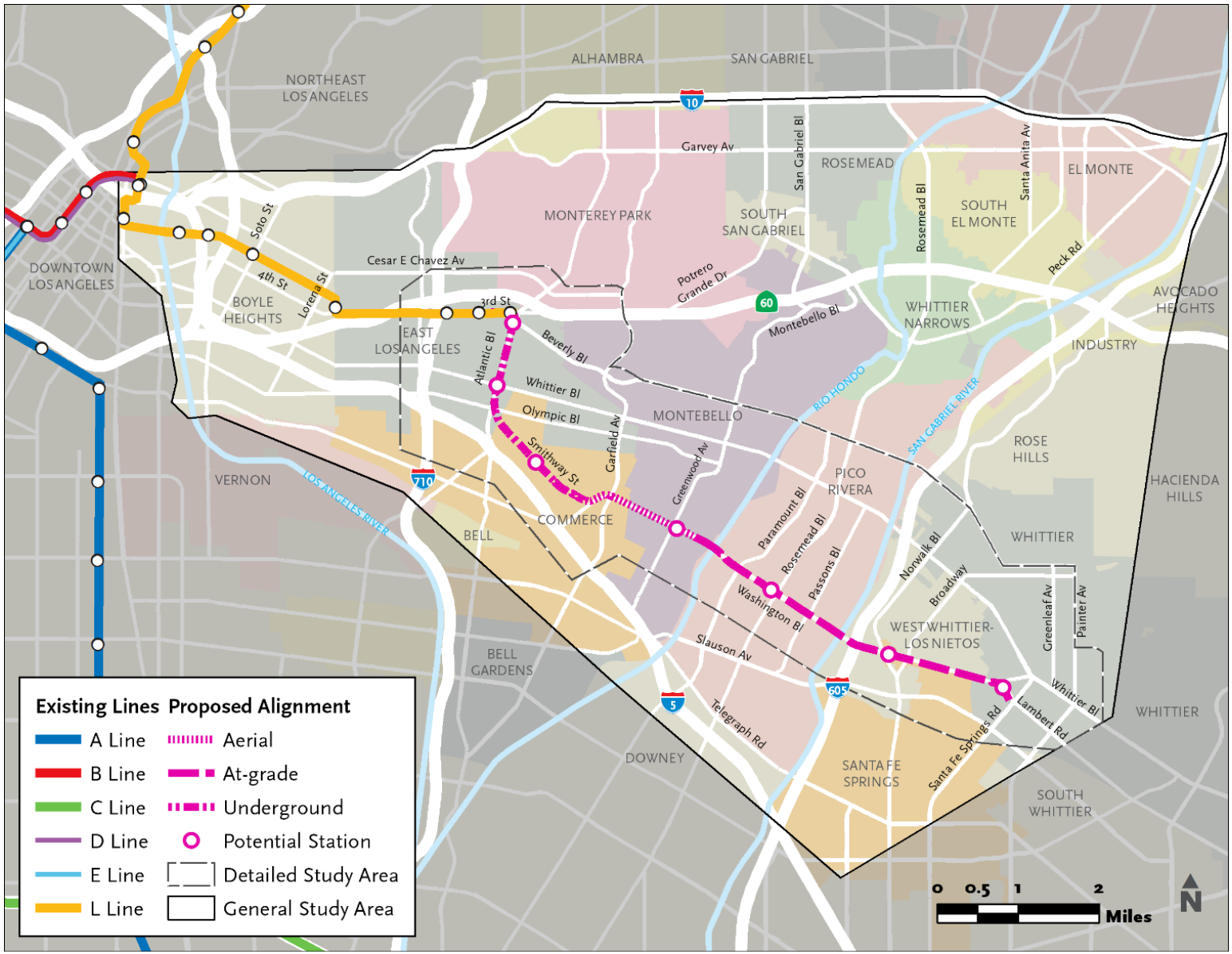
Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Alignment length	9 miles	3.2 miles	4.6 miles
Length of underground, aerial, and at-grade[2]	**Base Alternative[1]**		
	3 miles underground; 1.5 miles aerial: 4.5 miles at-grade[3]	3 miles underground 0.1 miles aerial; 0.1 miles at-grade[3]	3 miles underground; 1.5 miles aerial; 0.1 miles at-grade[3]
	Atlantic/Pomona Station Option		
	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment
	Montebello At-Grade Option		
	3 miles underground; 0.5 miles aerial; 5.5 miles at-grade	NA	3 miles underground; 0.5 miles aerial; 1.1 miles at-grade
Station configuration	**Base Alternative1**		
	7 stations: 3 underground (1 relocated/ reconfigured); 1 aerial; 3 at-grade	3 stations: 3 underground (1 relocated/reconfigured)	4 stations: 3 underground (1 relocated/reconfigured); 1 aerial
	Montebello At-Grade Option		
	4 at-grade; 0 aerial	NA	1 at-grade; 0 aerial

Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Major (signalized) at-grade intersection crossings	**Base Alternative1**		
	11	0	0
	Montebello At-Grade Option		
	15	NA	4
Major aerial crossings	**Base Alternative**		
	6	0	6
	Montebello At-Grade Option		
	2	NA	
Freight rail crossings	5	4	5
Freeway crossings	1 undercrossing at I-605	0	0
River crossings[5]	2	0	0
TPSS facilities[6,]	8	3	4
MSF[6] site options	2	1	2

Notes:.
1 The Base Alternative is the Build Alternative without the implementation of any design options (Atlantic/Pomona Station Option and/or Montebello At-Grade Option). Design Option are listed in the table if they differ from the Base Alternative.
2 Total lengths do not include MSF lead track.
3 The at-grade length includes 0.05-mile of transition from at-grade to underground.
4 Freight rail crossings would be grade separated and would not occur in the at-grade configuration.
5 The Base Alternative with design options would have the same number of river crossings.
6 The Base Alternative with design options would have the same number of TPSS facilities.
Key:
TPSS = Traction Power Substation MSF = Maintenance and Storage Facility O&M = Operations and Maintenance

2.5.1 Alternative 1 Washington

Alternative 1 would extend the Metro L (Gold) Line LRT approximately 9.0 miles east from the current terminus station at Atlantic Boulevard to the new eastern terminus at Lambert station in the city of Whittier. The base Alternative 1 would include a relocated/reconfigured Atlantic station in an underground configuration and six new stations in a mix of underground, at-grade and aerial configurations. The alignment would transition from the existing at-grade alignment to an underground configuration and would transition to an aerial configuration in the city of Commerce before transitioning to at-grade at Montebello Boulevard. The alignment includes approximately 3.0 miles of tunnel, 1.5 mile of aerial, and 4.5 miles of at-grade alignment. The Alternative 1 alignment crosses the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing San Gabriel River and Rio Hondo bridges would be replaced. **Figure 2.6** shows the Alterative 1 alignment and stations.



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.6. Alternative 1 Washington

Replacement of bridges over the Rio Hondo and San Gabriel River would involve removal of the existing bridges and construction of new structures to carry both the LRT guideway and the replacement roadway. The Rio Hondo replacement bridge would be wider by approximately 12 feet on each side, and the San Gabriel River replacement bridge would be wider by approximately 16 feet on each side. Demolition of the existing substructure and construction of the bridge would be sequenced. Further details on the bridge replacements can be found in the Eastside Transit Corridor Phase 2 Construction Impacts Report (Appendix P).

An MSF and other ancillary facilities would also be constructed as part of the Project, including overhead catenary system (OCS), cross passages, ventilation structures, traction power substations (TPSS) sites, crossovers, emergency generators, radio tower poles and equipment shelters, and other supporting facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, ancillary facilities, and operating hours and frequency is provided below. A description of the two MSF site options are provided in **Section 2.5.4.1** and **Section 2.5.4.2**. The Advanced Conceptual Design of Alternative 1 can be found in Volume 2.

Design options for a relocated/reconfigured Atlantic station and the at-grade configuration of the guideway along a portion of Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello are described in **Section 2.5.1.3** and evaluated within this Recirculated Draft EIR.

2.5.1.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then turn south and run beneath Atlantic Boulevard to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the tunnel boring machine (TBM). The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center median of Washington Boulevard at Gayhart Street (Montebello MSF site option). The alignment would maintain an aerial configuration then transition to an at-grade configuration east of Carob Way and remain at-grade in the center of Washington Boulevard. The at-grade alignment would terminate at Lambert station in the city of Whittier.

For the at-grade portions of the alignment, vehicular and pedestrian crossings would be limited to traffic signal-controlled intersections. Uncontrolled vehicular crossings of tracks and mid-block left-turns would not be permitted. As discussed further in Section 3.14, Transportation and Traffic, changes would occur to approach and departure traffic patterns for some properties with existing vehicle access along Washington Boulevard (e.g., for parking lots, loading docks, etc.), but would not

preclude access. Pedestrians and motor vehicles would be protected from the at-grade guideway by a fence or traffic barrier for pedestrian and vehicular safety. At unsignalized crossings, left turns and pedestrian crossings would be controlled using best practice safety measures (e.g., mid-block crosswalks, signal-protected pedestrian movements, channelization, barriers to protect and route pedestrians, Americans with Disabilities Act [ADA]-compliant curb ramps, and warning signs). Right-turn parking access and egress would remain along the alignment.

2.5.1.2 Proposed Stations

Alternative 1 would relocate/reconfigure the existing at-grade Atlantic Station to a new underground station and provide six new stations (two underground, one aerial, and three at-grade). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 1 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway Street west of Gaspar Avenue.

- **Greenwood** – This station would be aerial with a side platform located in the median of Washington Boulevard east of Greenwood Avenue in the city of Montebello. This station would provide a surface parking facility near the northeast corner of the intersection of Greenwood Avenue and Washington Boulevard. The station platform would be accessible through two entrances: one located at the northeast corner of Greenwood Avenue and Washington Boulevard and the other located at the southeast corner of Greenwood Avenue and Washington Boulevard.

- **Rosemead** – This station would be at-grade with a center platform located in the center of Washington Boulevard west of Rosemead Boulevard in the city of Pico Rivera. This station would provide a surface parking facility near the intersection of Rosemead and Washington Boulevards. Access to the station would be provided through an entrance located west of the Rosemead Boulevard and Washington Boulevard intersection. A secondary entrance would be located on the western side of the station platform that would be accessible with a mid-block pedestrian crossing.

- **Norwalk** – This station would be at-grade with a center platform located in the median of Washington Boulevard east of Norwalk Boulevard in the city of Santa Fe Springs. This station would provide a surface parking facility near the intersection of Norwalk and Washington Boulevards. Access to the station would be provided via an entrance located east of Norwalk Boulevard and a secondary station entrance west of Boer Avenue.

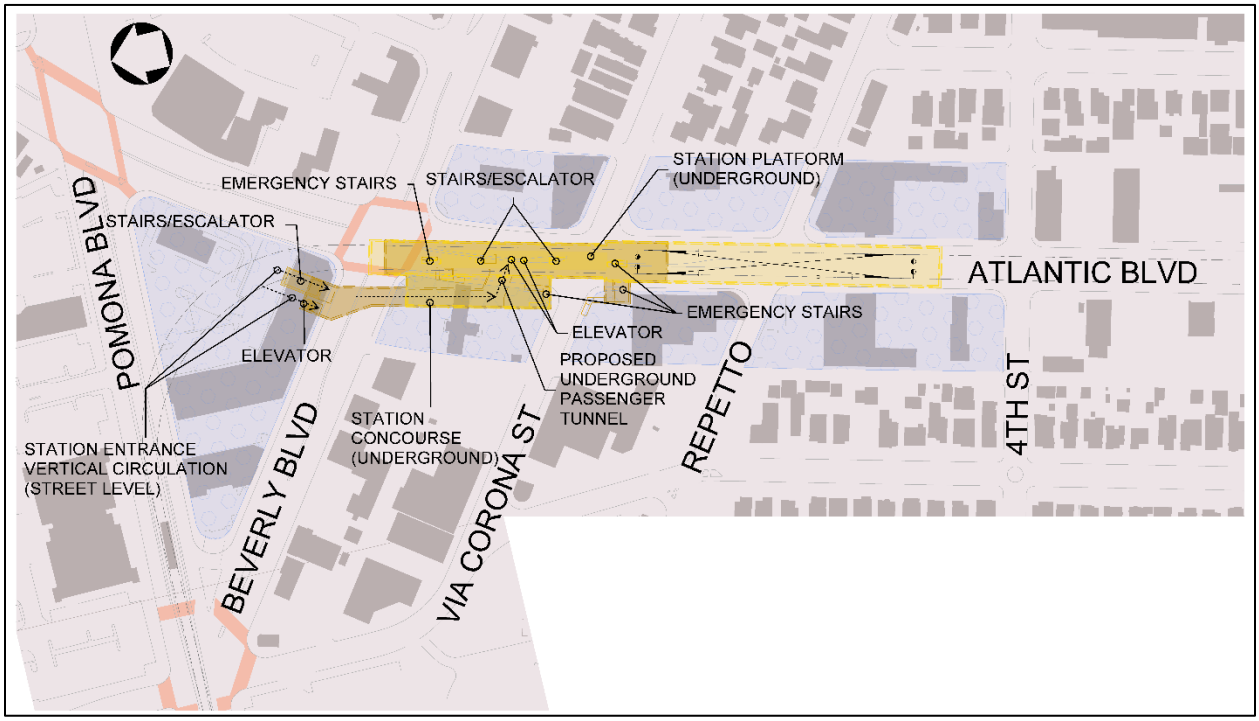
- **Lambert** – This station would be at-grade with a center platform located south of Washington Boulevard just west of Lambert Road in the city of Whittier. This station would provide a surface parking facility near the intersection of Lambert Road and Washington Boulevard. Two entrances to the station would be provided at each end of the platform.

Station amenities would include items in the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and site-specific public art. Escalators and elevators would be located in aerial and underground stations. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.13** and Volume 2.

2.5.1.3 Design Options

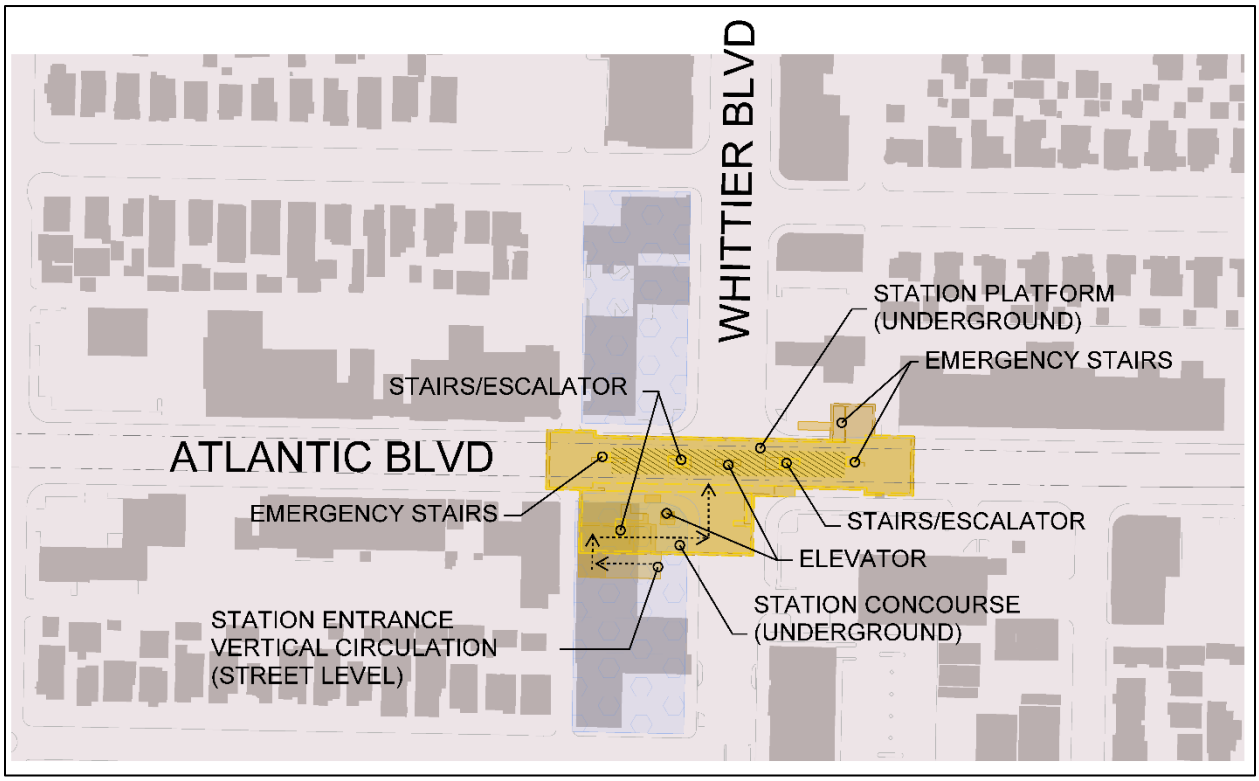
There are two design options being considered in addition to the base Alternative 1. The design options are described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.



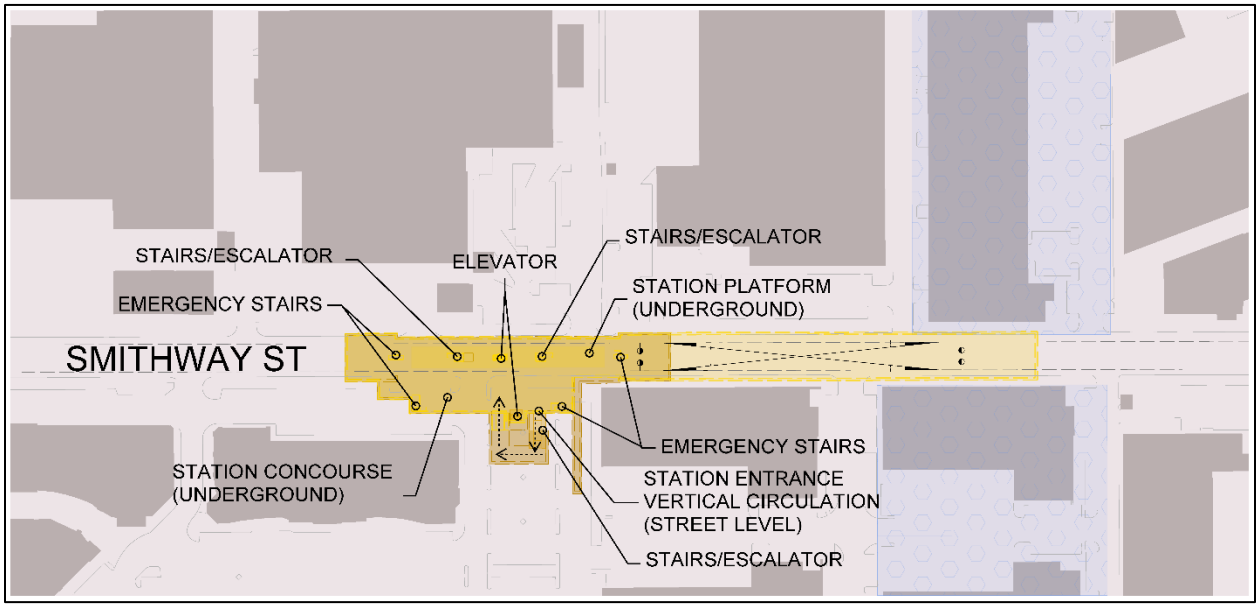
Source: Metro; ACE Team, June 2022.

Figure 2.7. Atlantic Station (Relocated/Reconfigured) Conceptual Site Plan



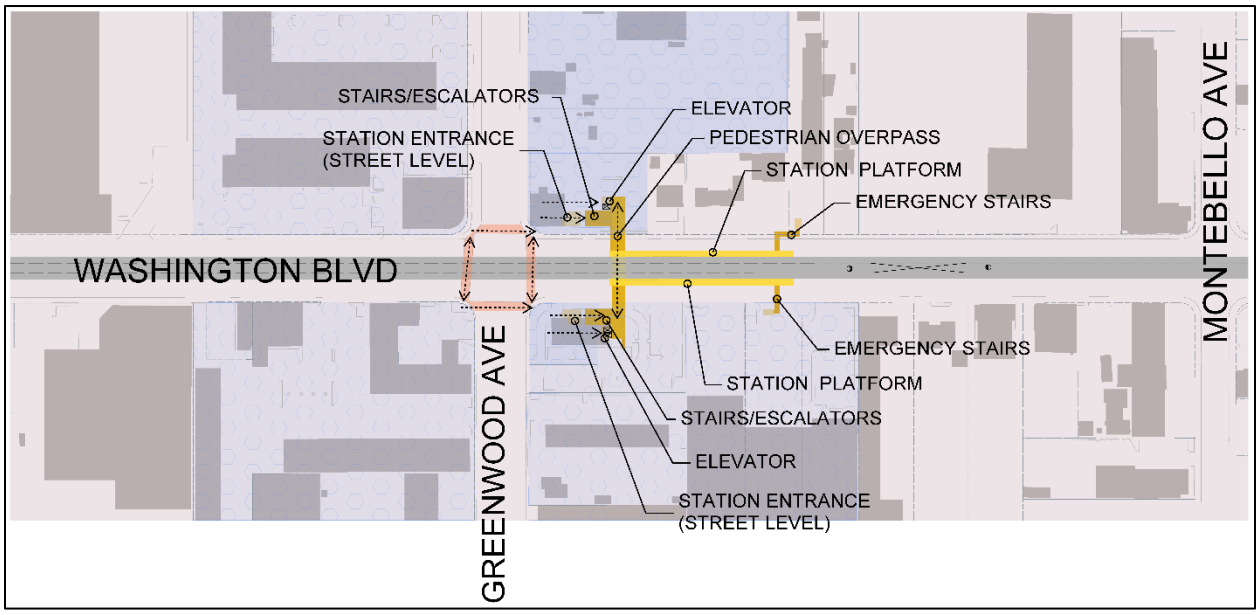
Source: Metro; ACE Team, June 2022.

Figure 2.8. Atlantic/Whittier Station Conceptual Site Plan



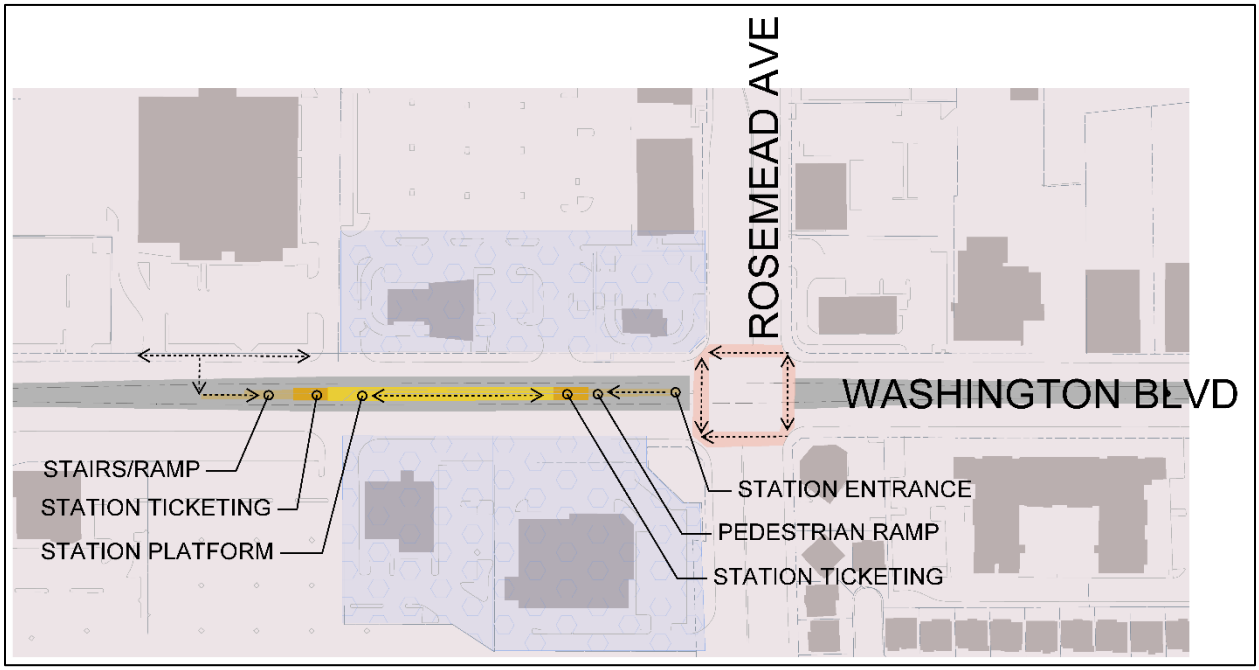
Source: Metro; ACE Team, June 2022.

Figure 2.9. Commerce/Citadel Station Conceptual Site Plan



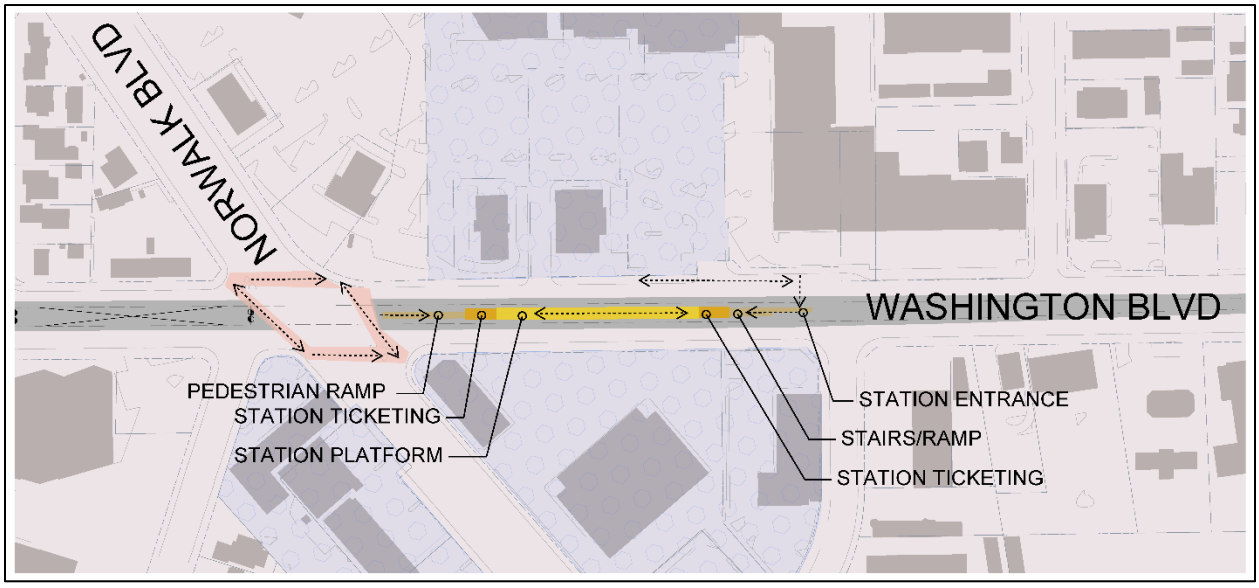
Source: Metro; ACE Team, June 2022.

Figure 2.10. Greenwood Station Conceptual Site Plan



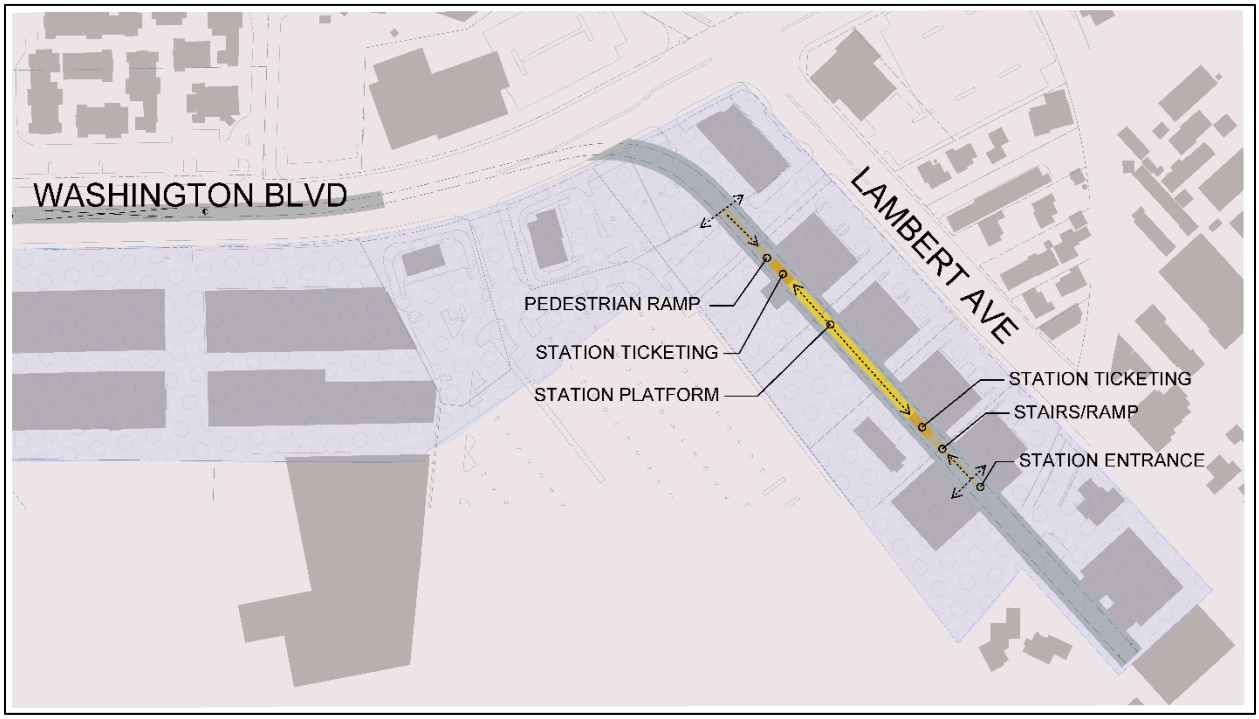
Source: Metro; ACE Team, June 2022.

Figure 2.11. Rosemead Station Conceptual Site Plan



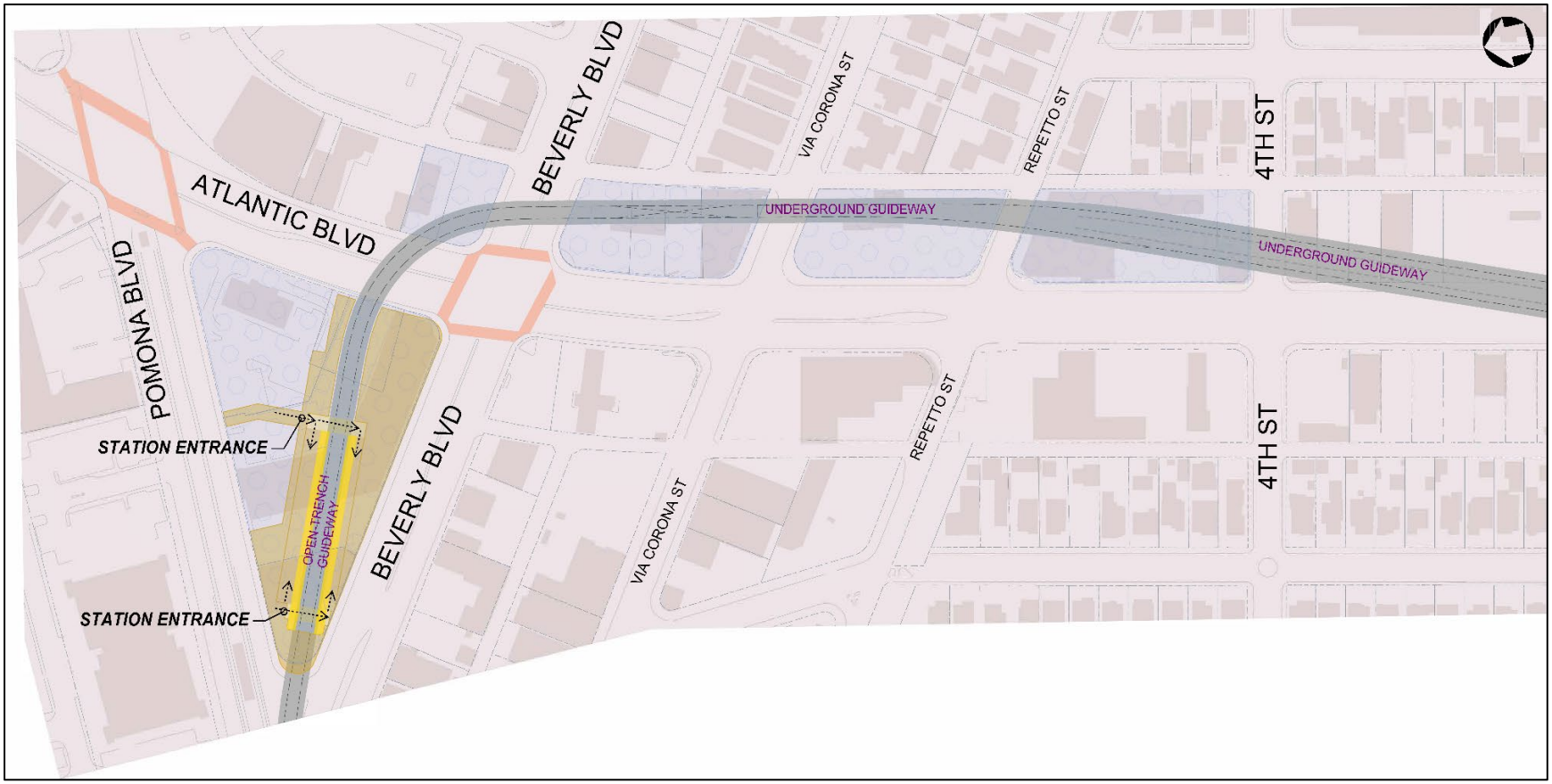
Source: Metro; ACE Team, June 2022.

Figure 2.12. Norwalk Station Conceptual Site Plan



Source: Metro; ACE Team, June 2022.

Figure 2.13. Lambert Station Conceptual Site Plan



Source: Metro; ACE Team, January 2022.

Figure 2.14. Atlantic/Pomona Station Option

- **Montebello At-Grade Option** – This design option consists of approximately one mile of at-grade guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. In this design option, after crossing Saybrook Avenue, the LRT guideway would daylight from underground to an aerial configuration to avoid disrupting existing Burlington Northern Santa Fe (BNSF) Railway tracks. The aerial guideway would continue parallel to Washington Boulevard, then merge into the center median east of Garfield Avenue. At Yates Avenue, the guideway would transition from aerial to an at-grade configuration and remain at-grade until terminating near Lambert Road in the city of Whittier as shown in **Figure 2.15**. This design option also includes an at-grade Greenwood station located west of Greenwood Avenue, as well as roadway reconfigurations to accommodate the at-grade segment of the alignment. The lead tracks to the Montebello MSF site option would also be at-grade. Alternative 1 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 5.5 miles of at-grade alignment.

2.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

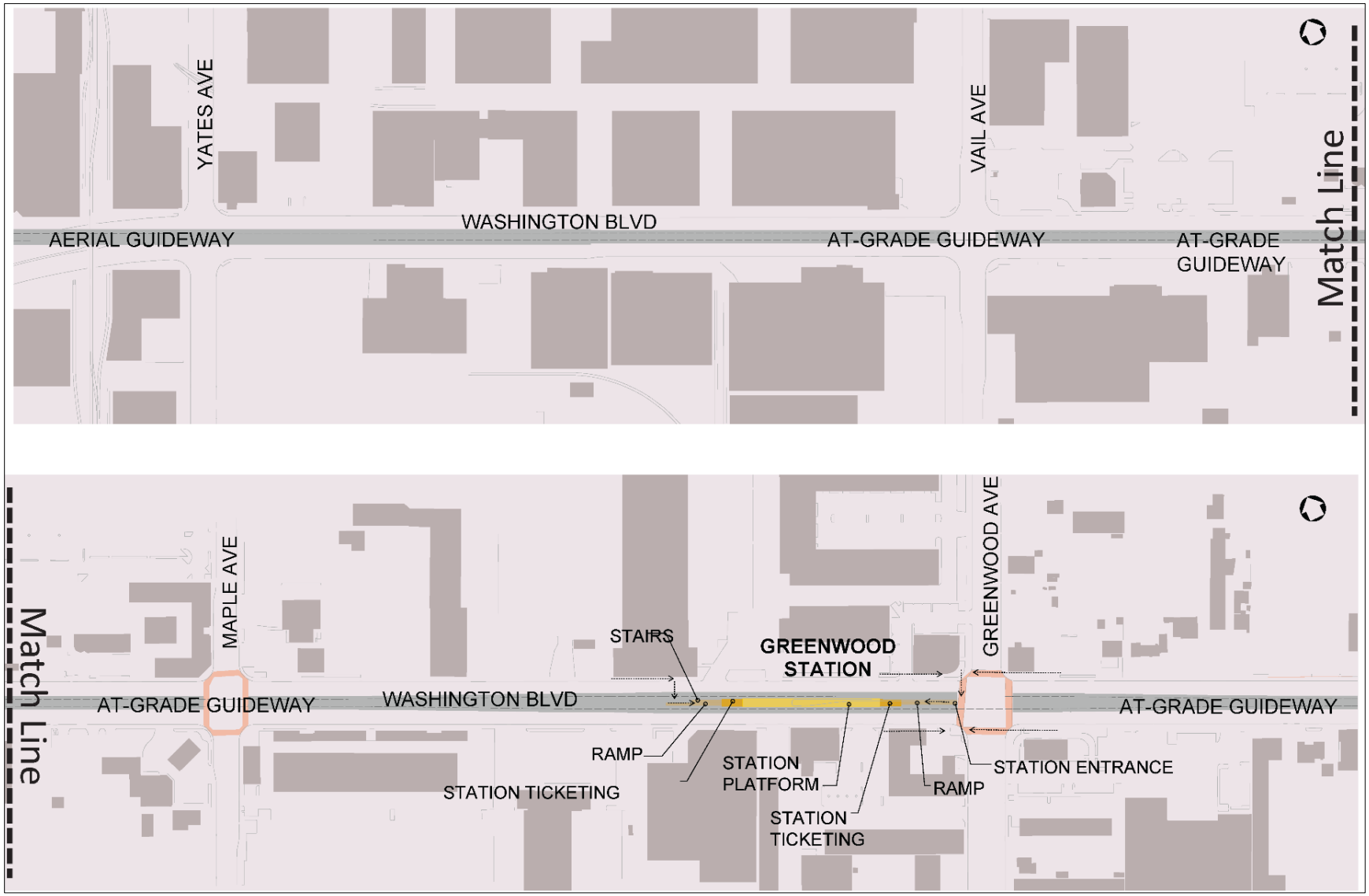
Alternative 2 would extend the Metro L (Gold) Line approximately 3.2 miles from the current at-grade terminus at Atlantic Boulevard to an underground terminal station at the Commerce/Citadel station in the city of Commerce with lead tracks connecting to the Commerce MSF site option. This alternative would include the relocated/reconfigured Atlantic station and two new stations in an underground configuration. The base Alternative 2 alignment includes approximately 3.0 miles of underground, 0.1 miles of aerial, and 0.1 mile of at-grade alignment. **Figure 2.16** shows the proposed Alterative 2 alignment and stations. There is one design option for this alternative.

The Commerce MSF site option and other ancillary facilities would also be constructed as part of the Project, including OCS, lead tracks, cross passages, ventilation structures, TPSSs, crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, and operating hours and frequency is provided below. The Advanced Conceptual Design of Alternative 2 can be found in Volume 2.

A design option for a relocated/reconfigured Atlantic/Pomona station described in **Section 2.5.1.3** and shown on **Figure 2.14** is being evaluated for Alternative 2 within this Recirculated Draft EIR.

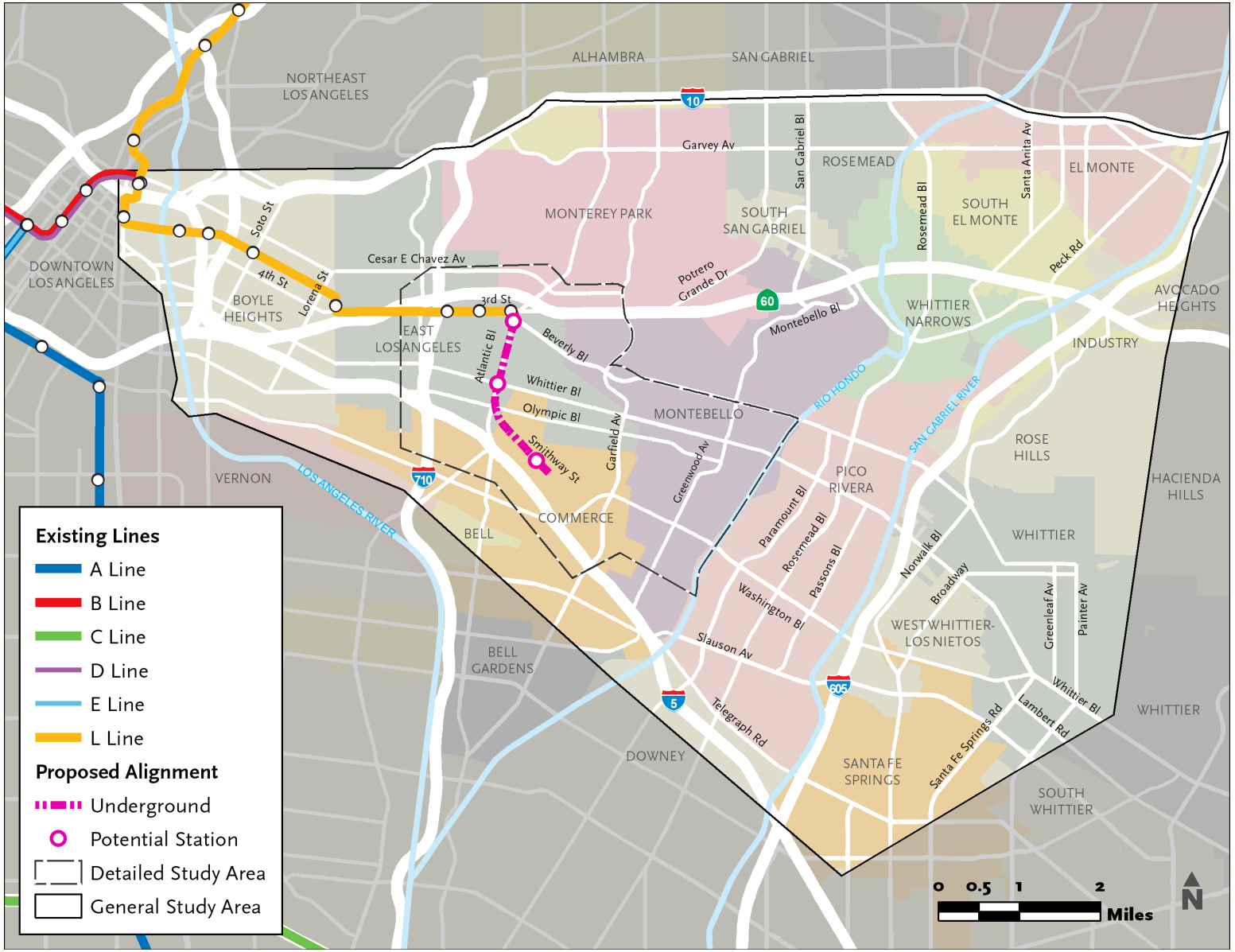
2.5.2.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then run beneath Atlantic Boulevard in the south direction to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. The alignment would terminate at the Commerce/Citadel station with non-revenue lead tracks connecting to the Commerce MSF site option in an aerial configuration after crossing Saybrook Avenue.



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.15. Montebello At-Grade Option



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.16. Alternative 2 Atlantic to Commerce/Citadel IOS

As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the TBM. The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

2.5.2.2 Proposed Stations

Alternative 2 would relocate/reconfigure the at-grade Atlantic Station to a new underground station and provide two new stations (also underground). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 2 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway west of Gaspar Avenue.

Station amenities would include items consistent with the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, station entry portals, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, escalators, elevators, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and integrated site-specific art. Landscaping would be provided near station portals. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.9** and Volume 2.

2.5.2.3 Design Option

There is one design option being considered in addition to the base Alternative 2. The design option is described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.

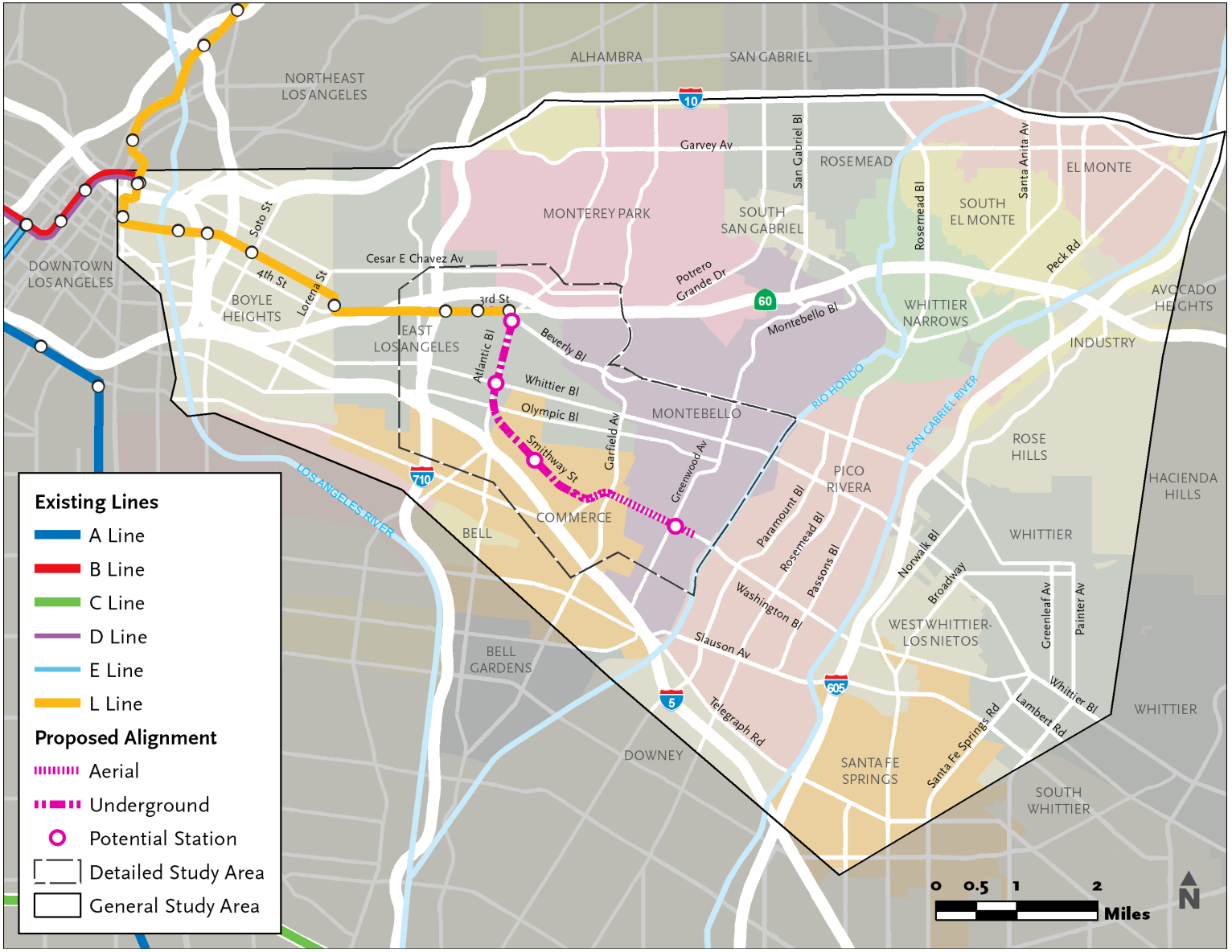
2.5.3 Alternative 3 Atlantic to Greenwood IOS

Alternative 3 would extend the Metro L (Gold) Line LRT approximately 4.6 miles east from the current at-grade station at Atlantic Boulevard to an aerial terminal station at Greenwood station in the city of Montebello. This alternative would include a relocated/reconfigured underground Atlantic station and three new stations: Atlantic/Whittier (underground), Commerce/Citadel (underground), and Greenwood (aerial). The base Alternative 3 alignment includes approximately 3.0 miles of underground, 1.5 miles of aerial, and 0.1 mile of at-grade alignment.

Figure 2.17 shows the proposed Alterative 3 alignment and stations.

An MSF and other ancillary facilities would also be constructed as part of the Project, including OCS, tracks, cross passages, ventilation structures, TPSSs, track crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, and operating hours and frequency is provided below. The Advanced Conceptual Design of Alternative 3 can be found in Volume 2.

Design options for a relocated/reconfigured Atlantic/Pomona station and potential at-grade guideway configuration along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello are described in **Section 2.5.1.3** and evaluated within this Recirculated Draft EIR.



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.17. Alternative 3 Atlantic to Greenwood IOS

2.5.3.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then run beneath Atlantic Boulevard south to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce.

As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the TBM. The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue in an aerial configuration parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center median of Washington Boulevard at Gayhart Street in an aerial configuration (Montebello MSF site option). The alignment would maintain an aerial configuration along Washington Boulevard. The alignment would terminate at the Greenwood station in the city of Montebello.

2.5.3.2 Proposed Stations

Alternative 3 would relocate/reconfigure the at-grade Atlantic Station to a new underground station and provide three new stations (two underground and one aerial). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 3 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway Street west of Gaspar Avenue.

- **Greenwood** – This station would be aerial with a side platform located in the median of Washington Boulevard east of Greenwood Avenue in the city of Montebello. This station would provide a surface parking facility near the northeast corner of the intersection of Greenwood Avenue and Washington Boulevard. The station platform would be accessible through two entrances: one located at the northeast corner of Greenwood Avenue and Washington Boulevard and the other located at the southeast corner of Greenwood Avenue and Washington Boulevard.

Station amenities would include items in the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, station entry portals, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, escalators, elevators, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and site-specific public art. Escalators and elevators would be located in aerial and underground stations. Station entry portals would be implemented at underground stations. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.10** and Volume 2.

2.5.3.3 Design Options

There are two design options being considered in addition to the base Alternative 3. The design options are described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.

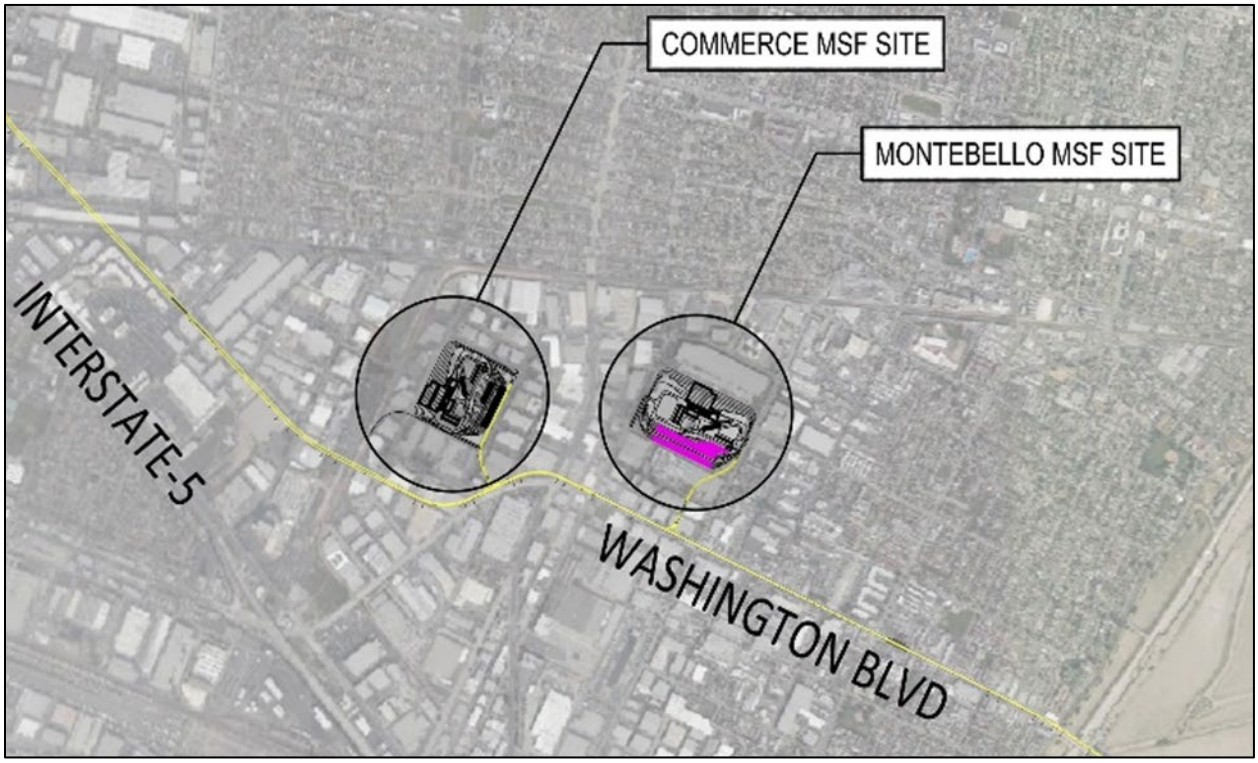
- **Montebello At-Grade Option** – This design option consists of approximately one mile at-grade guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. In this design option, after crossing Saybrook Avenue, the LRT guideway would daylight from underground to an aerial configuration to avoid disrupting existing BNSF Railway tracks. The aerial guideway would continue parallel to Washington Boulevard, then merge into the center median east of Garfield Avenue. At Yates Avenue, the guideway would transition from aerial to an at-grade configuration, run along Washington Boulevard to Carob Way, and then continue east in an at-grade configuration, as described under Alternative 3.

  This design option also includes an at-grade Greenwood station located just west of Greenwood Avenue, as well as roadway reconfigurations to accommodate the at-grade segment of the alignment. The lead tracks to the MSF site option would also be at-grade. Alternative 3 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 1.1 miles of at-grade alignment.

2.5.4 Maintenance and Storage Facilities

The Project has two MSF site options: the Commerce MSF site option and the Montebello MSF site option. One MSF site option would be constructed. The MSF would provide equipment and facilities to clean, maintain and repair rail cars, vehicles, tracks, and other components of the system. The MSF would enable storage of light rail vehicles (LRV) that are not in service and would connect to the mainline with one lead track. The MSF would also provide office space for Metro rail operation staff, administrative staff, and communications support staff. The MSF would be the primary physical employment centers for rail operation employees, including train operators, maintenance workers, supervisors, administrative, security personnel and other roles. An estimated total of approximately 350 people is expected to staff the MSF site with a maximum overlap of 240 expected to be on site at one time. The number of parking spaces on site would be approximately 250 to accommodate employees.

The Commerce MSF site option is located in the city of Commerce, and the Montebello MSF site option is located in the city of Montebello. The Commerce MSF site option is located where it could support any of the three Build Alternatives. The Montebello MSF site option is located where it could support Alternative 1 or Alternative 3. As stated above, only one of the two MSF site options would be constructed under the Project. **Figure 2.18** shows the location of the two MSF site options for the Project. Each MSF site option is described in the following **Section 2.5.4.1** and **Section 2.5.4.2**.



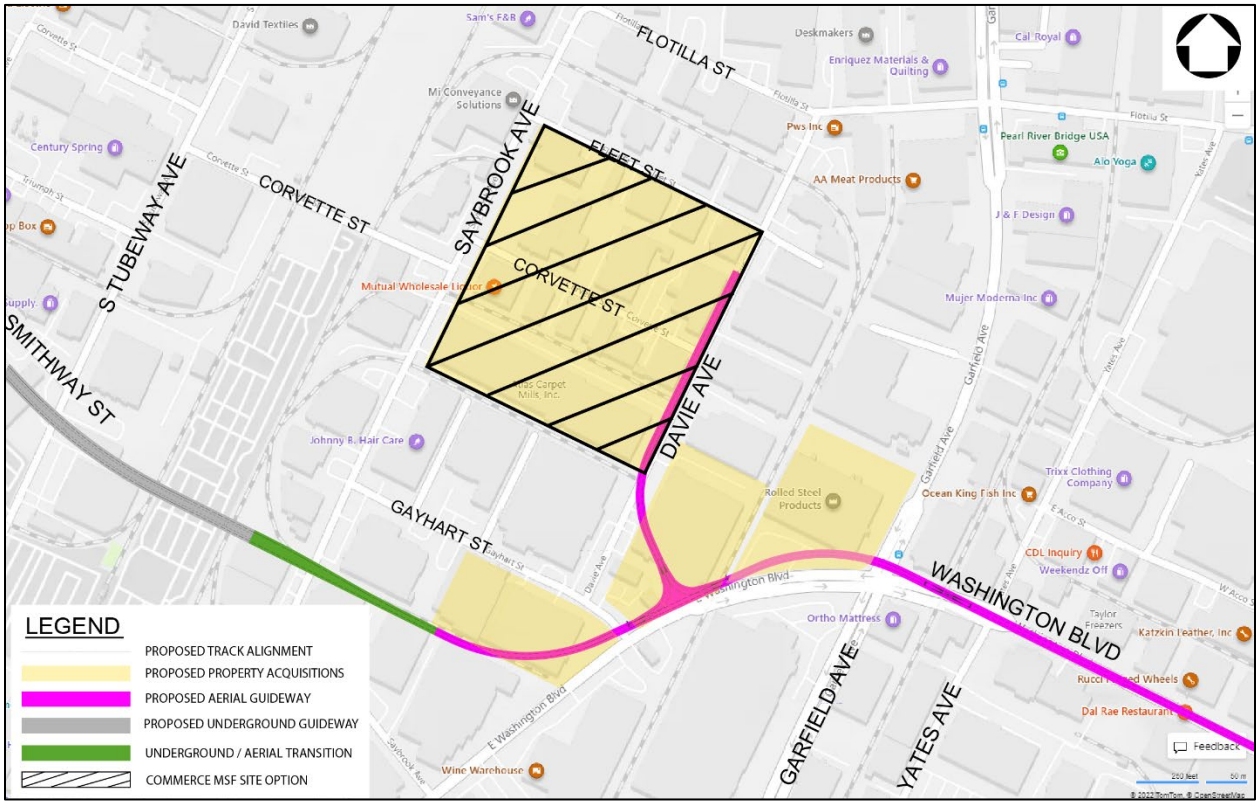
Source: Metro; ACE Team, June 2022.

Figure 2.18. Commerce and Montebello MSF Site Options

2.5.4.1 Commerce MSF

The Commerce MSF site option is located in the city of Commerce, west of Washington Boulevard and north of Gayhart Street (see **Figure 2.19**). The site is bounded by Davie Avenue to the east, Fleet Street to the north, Saybrook Avenue to the west, and an unnamed street to the south. The site is approximately 24 acres. Additional acreage would be needed to accommodate the lead track and construction staging. The guideway alignment with the Commerce MSF site option would daylight from an underground to aerial configuration west of the intersection of Gayhart Street and Washington Boulevard and would run parallel to Washington Boulevard from Gayhart Street to Yates Avenue. The lead tracks to the Commerce MSF site option would be located northeast of the intersection of Gayhart Street and Washington Boulevard and would extend in an aerial configuration and then transition to at-grade within the MSF site option after crossing Davie Avenue. To construct and operate the Commerce MSF site option, Corvette Street, an undivided two-lane road, would be permanently closed between Saybrook Avenue and Davie Avenue. Corvette Street is functionally classified as a local street under the California Road System. The facility would accommodate storage for approximately 100 LRVs.

The Commerce MSF site option would require acquisition of several properties with low-rise commercial and industrial buildings serving light industrial, wholesale, warehousing, distribution, and commercial supply businesses. The parcels in the vicinity of the Commerce MSF site option are designated as Public Facility, Heavy Industrial, and Unlimited Commercial in the city of Commerce zoning code (City of Commerce 2019).

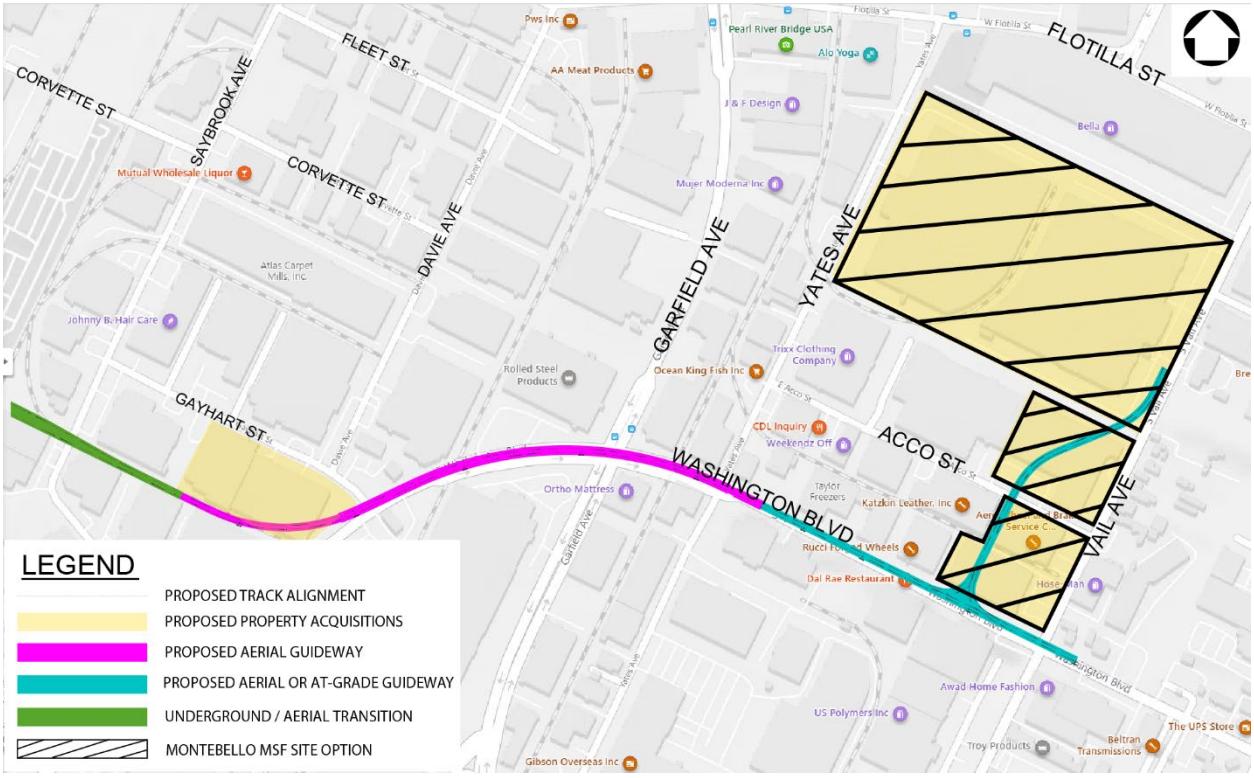


Source: Metro; ACE Team, June 2022.

Figure 2.19. Commerce MSF Site Option Site Plan

2.5.4.2 Montebello MSF

The Montebello MSF site option is located in the city of Montebello, north of Washington Boulevard and south of Flotilla Street between Yates Avenue and S. Vail Avenue (**Figure 2.20**). The site is approximately 30 acres and is bounded by S. Vail Avenue to the east, a warehouse structure along the south side of Flotilla Street to the north, Yates Avenue to the west, and a warehouse rail line to the south. Additional acreage would be needed to accommodate the lead track and construction staging. As shown on in a solid line on **Figure 2.21**, the guideway alignment with the Montebello MSF site option would daylight from an underground to an aerial configuration west of intersection of Gayhart Street and Washington Boulevard. The alignment would be located further east than the alignment with the Commerce MSF site option. The aerial guideway for the Montebello MSF site option would transition to the median of Washington Boulevard at Gayhart Street. Columns that would provide structural support for the aerial guideway would be installed in the median of Washington Boulevard. The lead track would be in an aerial configuration from Washington Boulevard and would transition to at-grade as the track approaches the MSF site option.

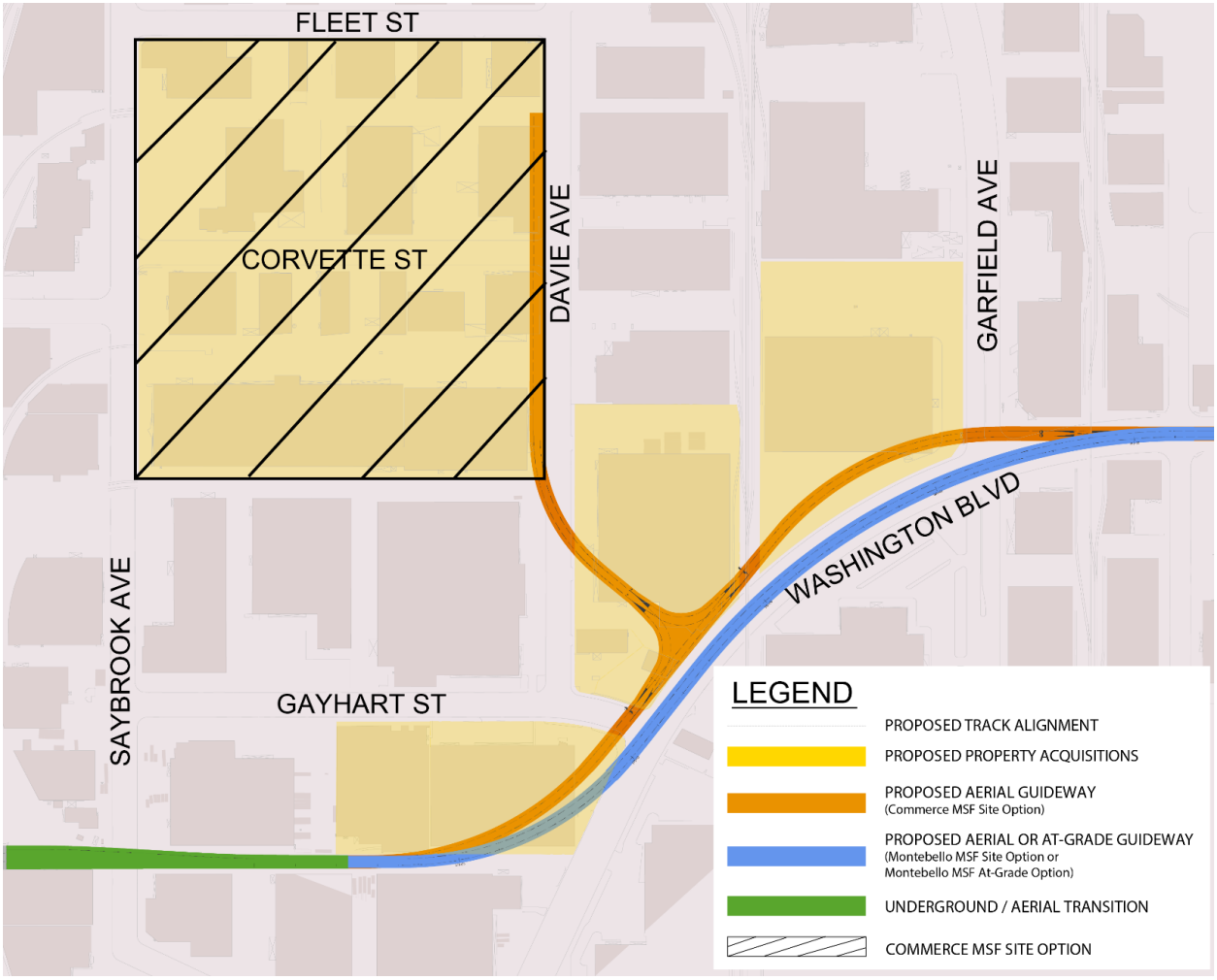


Source: Metro; ACE Team, June 2022.

Figure 2.20. Montebello MSF Site Option Site Plan

Property acquisitions would be required for lead track east of S. Vail Avenue. The Montebello MSF site option would require acquisition of several properties with commercial and industrial uses. The parcels within the Montebello MSF site option and in the vicinity are classified as Heavy Manufacturing under the city of Montebello zoning code. A significant portion of the Montebello MSF site option is occupied by an industrial/commercial paving business. The facility would accommodate storage for approximately 120 LRVs.

The Montebello MSF At-Grade Option includes an at-grade configuration for the lead tracks to the Montebello MSF site option. This design option would be necessary if the Montebello At-Grade Option is selected under Alternative 1 or Alternative 3. In this design option, the lead tracks would be in an at-grade configuration from Washington Boulevard, paralleling S. Vail Avenue, and remain at-grade to connect to the Montebello MSF site option. For this design option, through access on Acco Street to Vail Avenue would be eliminated and cul-de-sacs would be provided on each side of the lead tracks to ensure that access to businesses in this area is maintained. The undivided two-lane road, Acco Street, is functionally classified as a local street under the California Road System.



Source: Metro; ACE Team, June 2022.

Figure 2.21. Montebello MSF S-Curve Alignment

2.5.5 Ancillary Facilities

The Build Alternatives would require a number of additional elements to support vehicle operations, including but not limited to an OCS, tracks, crossovers, cross passages, ventilation structures, TPSS, train control house and electric power switches, and an MSF. Alternatives 1, 2, and 3 would have a underground alignment of approximately 3 miles in length between La Verne and Saybrook Avenue. Per Metro's Fire Life Safety Criteria, ventilation shafts and emergency fire exits would be installed along the tunnel portion of the alignment. These would be located at the underground stations or public ROW. The precise location of ancillary facilities would be determined in a subsequent design phase.

Following are descriptions of the OCS, tracks, crossovers, cross passages, ventilation structures, TPSS and train control house and electric power switches.

2.5.5.1 Overhead Contact System

The OCS is a network of overhead wires that distribute electricity to LRT, as shown in **Figure 2.22**. The OCS would include steel poles to support an electrical power line that would be suspended above the LRT tracks. A pantograph or "arm" on the roof of LRT vehicles would slide along the underside of the contact wire and deliver electric power to the vehicles. The OCS poles would be approximately 30 feet tall and typically located every 90 to 170 feet between two LRT tracks. The overhead conductor rails (OCR) would be applied to the underground portion of the guideway. Interchangeable to the OCS system, the OCR would also distribute electrification to the LRT system. However, overhead wires would be hung from the tunnel ceiling instead of OCS poles.

Source: Metro, 2021.

Figure 2.22. Metro OCS for LRT Vehicles

2.5.5.1.1 Tail Tracks

Tail tracks allow for train storage, reversing direction, and short-lining of service if a pocket track is provided along the alignment. Tail tracks are typically located at each end-of-line the LRT station terminus.

2.5.5.1.2 Crossovers

A track crossover allows a train to reverse direction and use an adjacent track to continue operation.

2.5.5.1.3 Cross Passages

Cross passages are short tunnel segments that connect two parallel tunnels in underground segments. These passages allow emergency access from one tunnel to another. Cross passages for the Project would be approximately 15 feet high and 10 feet wide and would be located approximately every 800 feet along tunnel alignments.

2.5.5.1.4 Ventilation Structures

Ventilation structures allow for climate control and emergency ventilation of tunnels and underground stations. These structures would be included within the underground stations and would have ventilation gratings on sidewalks (or other public areas) typically on both sides of all underground stations.

2.5.5.1.5 Traction Power Substations

TPSSs are electrical substations that would typically be placed every one to one and a half miles. The LRT vehicles would be powered by approximately eight TPSS units, which would be spaced relatively evenly along the alignment to provide direct current to the LRT vehicles. TPSSs would be located at points along the alignment where maximum power draw is expected (such as at stations and on inclines). In the event that one TPSS needs to be taken off line, the LRT vehicle would continue to operate temporarily. Separate TPSS would be required for the maintenance buildings at the MSF.

The size of each TPSS unit would be approximately 60 feet by 80 feet and about 12 to 14 feet high. The unit would require access to the local road network for equipment installation and maintenance. Power would be fed to the OCS through underground feeders in duct banks and up a pole to a connection with the contact wire.

The TPSS units may be located underground at underground stations, within the public ROW, in parking facilities, or in acquired parcels. A representative TPSS is shown in **Figure 2.23**. For the purposes of analysis in this Recirculated Draft EIR, potential or typical TPSS locations were evaluated. However, other more suitable locations could be selected if they become available and are comparable to the potential locations analyzed herein.

2.5.5.1.6 Radio Communications

The Atlantic/Whittier station and Commerce/Citadel station would have equipment used to receive, process and transmit communication signals that would require antenna structures approximately 60 feet tall. Pole height is subject to the total number of required radio channels and bands. Communication cables would connect the antennas to the station train control and communications rooms. At the Commerce/Citadel station, an above-ground outdoor shelter may be required if the underground control room cannot support additional equipment. An equipment shelter and antenna of approximately 70 feet in height would also be located at the MSF site option.

2.5.5.1.7 Train Control House and Electrical Power Switches

The train control house contains signal equipment and electric power switches (contained in metal box-like enclosures) that would transfer electric power from utility providers to the underground traction power and other rail systems. Communications and electrical power switches would be located at each station.

Source: Metro Gold Line Foothill Extension Construction Authority, 2012.

Figure 2.23. Typical Light-Rail TPSS

2.5.6 Operating Hours and Frequency

Alternative 1 would provide LRT service from the terminus at Lambert Road station (city of Whitter), Alternative 2 would provide LRT service from the terminus at the Commence/Citadel station (city of Commerce), and Alternative 3 would provide LRT service from the terminus at the Greenwood station (city of Montebello). All Build Alternatives would provide LRT service from each designated terminus to downtown Los Angeles where Metro L (Gold) Line service would continue on Regional Connector tracks connecting to Metro E Line to Santa Monica.

The operating hours and schedules for Alternatives 1, 2, and 3 would be similar to the weekday, Saturday, Sunday, and holiday schedules for the existing Metro L (Gold) Line. LRT trains would operate every day from 4:00 am to 1:30 am. On weekdays, trains would operate approximately every 5 minutes to 10 minutes during peak hours, every 10 minutes mid-day and until 8:00 pm, and every 15 minutes in the early morning and after 8:00 pm. On weekends, trains would operate approximately every 10 minutes from 9:00 am to 6:30 pm, every 15 minutes from 7:00 am to 9:00 am and from 6:30 pm to 7:30 pm, and every 20 minutes before 7:00 am and after 7:30 pm. These operational headways are consistent with Metro design requirements for future rail services.

2.6 Construction

This section provides an overview of the typical construction activities and sequencing that would occur to build an LRT system based on Volume 2 and described in further detail in Appendix P. These methods are consistent with how the Eastside Transit Corridor Phase 1 Project, as well as other Metro LRT projects have been built. Final design and actual construction methods, sequencing, and equipment may vary, depending in part on how contractors choose to implement their work to be most cost-effective, within the parameters set forth in the bid and contract documents.

Construction of the Project would include a combination of various elements dependent upon the locally preferred alternative. The major construction activities include guideway construction (at-grade, aerial, underground), decking and tunnel boring for the underground guideway, station construction, demolition, utility relocation and installation work, street improvements including sidewalk reconstruction and traffic signal installation, retaining walls, LRT operating systems installation including TPSS and OCS, parking facilities, an MSF, and construction of other ancillary facilities. Alternative 1 would include construction of bridge replacements over the Rio Hondo and San Gabriel and River.

Construction of the Project would require grading, excavation, and the movement of excavated material. Estimated volumes of excavated material per base alternative is shown in **Table 2-2**. Actual volumes of material would depend on a number of factors, including the final design, individual contractor's choices, and coordination with the appropriate local jurisdictions. As further described in the Section 3.8, Transportation and Traffic. and Section 3.14, Hazards and Hazardous Materials, haul routes would be located along the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Major streets may include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. These haul routes shall be identified during final design in cooperation with the jurisdictions along the alignment and implemented throughout the construction process.

Table 2-2. Estimate of Excavated Material Volumes

Base Alternative[1]	Estimated Volumes of Excavated Material
Alternative 1 Washington	568,344 cubic yards
Alternative 2 Atlantic to Commerce/Citadel IOS	509,782 cubic yards
Alternative 3 Atlantic to Greenwood IOS	522,088 cubic yards

Notes:
[1] Excavation amounts for the Alternatives with one or both design options are not expected to be substantively different from that of the base Alternatives.

In addition to adhering to regulatory compliance, the development of the Project would employ conventional construction methods, techniques, and equipment. Project engineering and construction would, at minimum, be completed in conformance with the regulations, guidelines, and criteria:

- Metro Rail Design Criteria (Metro 2018a)
- Metro Systemwide Station Design Standards Policy (Metro 2018b)

- California Manual of Uniform Traffic Control Devices (MUTCD) (California Department of Transportation [Caltrans]) (Caltrans 2021)
- Greenbook: Standards for Public Works Construction(Public Work Standards et al. 2021)
- California Building Code(California Building Standards Commission 2021)
- California Green Building Standards Code Title 24, Part 11, Section 5.408.3(CalGreen 2019)
- National Fire Protection Association (NFPA) Standard for Fixed Guideway Transit and Passenger Rail Systems(NFPA 2019; NFPA 2020)
- National Electrical Code (NFPA 70)
- American Railway Engineering and Maintenance of Way Association (AREMA) Standards (AREMA 2019)
- Metro Operating Rules
- California, Public Utility Commission (CPUC) General Orders (Including but not limited to 88, 95, 143-B, and 164-D)
- Metro Sustainability Principles(Metro 2020)
- South Coast Air Quality Management District (SCAQMD) Rule 403 (SCAQMD 2005)
- SCAQMD Clean Air Act Rule 1403—asbestos regulation(SCAQMD 2019)
- National Pollutant Discharge Elimination System (NPDES) (United States Environmental Protection Agency [USEPA] (USEPA 2021)
- Standard Urban Stormwater Mitigation Plan (SUSMP) (Los Angeles Regional Water Quality Control Board 2000)
- Stormwater Pollution Prevention Plan (SWPPP) (USEPA 2021)

Best Management Practices (BMP) that would be implemented in compliance with regulations, guidelines, and permit approvals that would be implemented to avoid or reduce potential impacts are identified as project measures that would be incorporated into the Project. These project measures are identified in Chapter 3 of this Recirculated Draft EIR where applicable. Additionally, a complete list of all project measures is provided Appendix U.

2.6.1 Construction Sequencing

The construction of the Project is expected to last approximately 60 months to 84 months. Preconstruction would include geotechnical and hazardous material field surveys to identify potential hazards and constraints related to the design and construction of the Project. Construction would then commence with utility and site preparation. After demolition and site clearing, conflicting utilities would be relocated or protected-in-place, followed by any temporary roadway reconfiguration or restriping to accommodate temporary or permanent design elements related to the Project. The

launching of the TBM machine would occur west of Saybrook Avenue and south of Gayhart Street under the base Alternatives. Depending on the alternative, the aerial alignment construction would commence along Washington Boulevard. Cut-and-cover excavation, roadway decking, temporary shoring, mass excavation, and underground construction would occur along Smithway Street at the TBM launching pit and then the TBM receiving pit west of Atlantic Boulevard and south of Pomona Boulevard. Tunnel boring could occur simultaneously with aerial and at-grade construction. It is estimated that tunnel boring would occur at a minimum rate of approximately 30 feet per day, aerial construction would occur in roughly 0.5-mile segments and at-grade construction would occur in roughly 1-mile segments. Stations would be built simultaneously with guideway construction. Track installation and LRT operating systems including elements such as OCS, TPSS, train control house (among others) would generally occur during and after station construction. Ancillary facilities, final street improvements, public art, and landscaping would typically follow guideway construction.

Most construction activities would occur during daytime hours. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions; construction work during nighttime hours would be conducted in accordance with community input. Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Manual of Uniform Traffic Control Devices (MUTCD) standards. Typical roadway construction traffic control methods and devices would be followed, including the use of signage and barricades to regulate, warn, or guide road users.

Table 2-3 provides a summary of typical construction activities to support LRT construction, describing the activity, typical duration, description of construction activities, and equipment required. This summary is meant to be representative not all inclusive.

Table 2-3. Summary of Typical LRT Construction Activities

Activity	Typical Duration (Total Months)	Description	Equipment Required
At-Grade Alignment			
Utility Relocation	16-24	Relocate utilities from temporary and permanent elements related to the construction and/or operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, asphalt pavers, forklift, manlift, cranes, bucket trucks, cable-pull trucks.
Construction Staging Laydown Yard	3-6	Demolish existing buildings to store construction equipment and materials including the TBM, office space.	Bulldozer, excavators, dump trucks, backhoes.
Roadway	12-36	Reconfigure roadway, demolition of existing roadway installation of curb and gutter and other public right of way improvements. Install relocated traffic signals and stripe roadway.	Excavators, backhoes, compactors, milling machines, jackhammers, asphalt pavers, pavement breakers, manlifts, forklifts, dump trucks, cement trucks, road-striping trucks.
Guideway	24	Install slab and track.	Forklift, dump trucks, excavators, cement trucks, rail installation equipment, and truck mounted welders

Activity	Typical Duration (Total Months)	Description	Equipment Required
Station Construction	12-18	Install mechanical, electrical, and plumbing (MEP), canopies, faregates, ticketing, finishes, stairs, walkways, and artwork.	Forklifts, generator sets, loaders, welders, cement trucks, cranes, manlifts
LRT Systems Installation	8-12	Install OCS, OCS electrical and communication ducts, OCS foundations, TPSS, and gate-arms.	Excavators, backhoes, forklifts, Hi-Rail vehicles, cranes, manlifts
Parking Facilities	3-6	Parking facilities and landscaping	Cranes, forklifts, cement trucks, pavement breakers, diamond saws, compressors, paving machines, loaders, haul trucks
Maintenance and Storage Facility	18-24	Install MEP, special track, specialized washing equipment, and rebar installation, and concrete pours.	Crane, forklifts, cement trucks.
Aerial Alignment			
Utility Relocation	12-18	Relocate underground and/or overhead utilities from temporary and permanent elements related to the construction and/or operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, asphalt pavers, cranes, bucket trucks, forklift, manlift, cable-pull trucks.
Civil Roadway	12-24	Reconfigure roadway to accommodate aerial guideway. Demolish existing roadway. Install curb and gutter, sidewalks and drainage. Install relocated traffic signals and stripe roadway.	Excavators, backhoes, compactors, milling machines, jackhammers, asphalt pavers, pavement breakers, manlifts, forklifts, dump trucks, cement trucks, road-striping. trucks.
Mechanically Stabilized Earth (MSE) Walls	6-12	Structure would allow for transition from underground or at-grade into an aerial configuration.	Excavators, cranes, compactors, cement truck, forklifts, dump trucks.
Station Construction	18-24	Install rebar, MEP, fire and life safety systems, canopies, faregates, ticketing, finishes, elevators, escalators, concrete pours, and artwork. Construction of pedestrian bridge connection for Greenwood station.	Forklifts, cranes, generator sets, loaders, welders, cement trucks, manlifts.
Elevated Guideway	12-18	Install foundation columns, falsework, track slabs, track, and elevated sections.	Cast-in-drilled-hole (CIDH) drill rig or pile driver, cranes, forklifts, compressors, haul trucks, manlifts, loaders, cement trucks.

Activity	Typical Duration (Total Months)	Description	Equipment Required
Bridges	12-18	Install bridges for Alternative 1 over the Rio Hondo and San Gabriel River. Install foundation, excavate abutment, approach slab, erect falsework, install rebar, pour concrete for the superstructure.	Drill rig or pile driver, cranes, forklifts, haul trucks, manlifts, loaders, cement trucks, and grouting equipment.
LRT Systems Installation	8-12	Install catenary overhead wire system, TPSS, and gate arms.	Excavators, backhoes, forklifts, Hi-Rail vehicles, cable pull truck, cranes, manlifts.
Underground Alignment			
Utility Relocation	12-18	Relocate and hang underground utilities from temporary and permanent elements related to the construction and operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, pavers, forklift, manlift, jack and bore, horizontal directional drilling (HDD) drill.
Cut and Cover Construction	18-24	Supports the construction of the TBM launching and receiving pit, underground stations. Install soldier piles for beam and lag support of excavation (SOE) and excavation. Cover excavation with temporary decking.	Mobile cranes tower cranes, excavators, CIDH drill rigs or pile drivers, skid steers, backhoes, loaders, dump trucks.
Bored Tunnel	15-16 (3-4 Month Lag on Starting 2nd Bore)	Underground guideway construction.	TBM, rail mounted equipment and material/labor/tunnel liner delivery vehicles, spoil retrieval conveyors, earth moving vehicles, substation, air compressor, grouting plant, soil conditioning plant, cranes, drilling rigs, concrete mixers and pumping equipment, flatbed trucks, electric power supply equipment, tunnel ventilation equipment, sand and gravel delivery trucks, dump trucks, ripper teeth or roadheader mounted excavators, drill jumbo, grouting equipment, shotcrete pump and nozzle.
Station Construction	36-48	Install MEP, rebar, canopies, faregates, ticketing, finishes, elevators, escalators, and artwork.	Tower crane, skid steer, CIDH drill rig or pile driver, Forklifts, generator sets, loaders, welders.
LRT Systems Installation	8-12	Install TPSS, and signal switches.	Forklifts, skid steer, Hi-Rail vehicles.
Underground Guideway	12-18	Install special trackwork and track.	Forklifts, compressors.

Source: CDM Smith/AECOM JV and HNTB/Cordova JV, 2021.
Key:
TBM = Tunnel Boring Machine
CIDH=Cast-in-drilled hole
OCS = Overhead Catenary System
HDD= horizontal directional drilling
MSE = Mechanically Stabilized Earth
SOE= Support of Excavation

Additional construction activity details are described in Appendix P.

2.6.2 Construction Staging Areas

The laydown and storage areas for construction equipment and materials would be established in the vicinity of the Project within parking facilities, and/or on parcels that would be acquired for the proposed stations, TPSS sites, and MSF site options. Construction staging areas would be used to store building materials and construction equipment, assemble the TBM, provide temporary storage of excavated materials, and serve as temporary field offices for the contractor. Construction staging areas are addressed in further detail in Appendix P and Volume 2 of the Recirculated Draft EIR.

Staging areas would be needed at the MSF site options, adjacent to future station locations, Project-related parking facilities, new bridge crossings, grade separations, TPSS sites, and intermittently along the at-grade and aerial alignment. Temporary easements would be required to allow construction staging on public sidewalks, streets, and in some cases, private property if necessary. Site clearance and demolition of existing structures at the construction staging areas would begin before major construction activity. Metro's criteria for siting staging areas include consideration of following: proximity and access to support construction; issues related to property acquisition; jurisdiction planning goals; and potential parking facility or future joint development after Metro is finished with construction. Use of construction staging areas is temporary. The size for a construction staging site ranges from approximately 0.7 acres (29,865 square feet) to 14.5 acres (632,337 square feet). Staging areas supporting the underground segment would require additional space compared to the at-grade and aerial segments to accommodate activities including but not limited to tunneling, assembling and launching and extraction of the TBM, and decking operations.

At the TBM launching site, the staging area would also be used for storage and preparation of precast concrete segments, temporary spoil storage, ventilation lines, shaft support (air, water, electricity, spoil hoisting), workshops, mixing and processing slurry for excavation support or tunnel excavation, and post-excavation slurry treatment (separation), which would include filters, centrifuges, and vibrator equipment.

Most of the potential staging area sites also have a nearby optional site, which provides an alternative staging area location. The intention is to acquire only one of the alternative sites for construction. See Appendix P and Volume 2 for additional information.

2.7 Permits and Approvals

Metro will comply with all applicable federal, state, and local environmental regulations and will responsibly and reasonably mitigate significant environmental impacts resulting from the Project in accordance with Metro policies and applicable laws. This Recirculated Draft EIR identifies impacts that would potentially be significant and proposes mitigation measures to address those impacts. Additionally, Metro would continue to avoid and minimize project impacts wherever possible.

The Build Alternative would require various environmental permits and/or approvals. **Table 2-4** and **Table 2-5** list the anticipated agency/jurisdiction and permit/approval required.

Table 2-4. Required Agency/Jurisdiction Approvals

Agency/Jurisdiction	Approval
USACE	Section 404, 408
CDFW	1602 Streambed Alteration Agreement
Caltrans	Permit approvals for encroachment on I-605
DTSC	Hazardous materials cleanup
CPUC	Grade Separations, Crossings, State Safety Oversight
Metro	Certification of Recirculated Draft EIR, adoption of Findings and Statement of Overriding Considerations, adoption of the Mitigation Monitoring and Reporting Program as Lead Agency under CEQA

Key:
Caltrans = California Department of Transportation
CDFW = California Department of Fish and Wildlife
CEQA = California Environmental Quality Act
CPUC= California Public Utilities Commission
DTSC = Department of Toxic Substance Control
MMRP= Mitigation Monitoring and Reporting Program
USCACE = United States Army Corps of Engineers

Table 2-5. Required Agency/Jurisdiction Permits

Agency/Jurisdiction	Permits
State Water Resources Control Board	NPDES Dewatering permit, Los Angeles County MS4 NPDES Package, Industrial General Permit; Construction General Permit and SWPPP
Regional Water Quality Control Boards	Section 401
SCAQMD	Consultation to identify best practices for construction emissions, Clean Air Act Title V permit (if required)
BNSF Railroad	Encroachment permits
UPRR	Encroachment permits
Los Angeles County Flood Control District	Permits
Los Angeles County Department of Public Works	Permits
County of Los Angeles and cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier	Permits and/or discretionary actions required

Key:
BNSF = Burlington Northern Santa Fe
MS4 = Municipal Separate Storm Sewer System
NPDES= National Pollutant Discharge Elimination System
SCAQMD = Southern Coast Air Quality Management District
SWPPP = Stormwater pollution prevention plan
UPRR = Union Pacific Railroad

2.8 Implementation Schedule

The Project is currently included within the constrained component of Metro's 2020 LRTP and the SCAG's 2016-2040 RTP/SCS and 2020-2045 RTP/SCS, which commit funding to the project starting in 2029. This commitment is based on the availability of funds from Measure R, which funds $1.25 billion of the project starting in Fiscal Year (FY) 2026 and Measure M for a total of $6.0 billion in 2015. Measure M allocates the $6.0 billion in two cycles. Cycle 1 identifies $3 billion for one alignment with a 2029 groundbreaking date and an opening date of 2035. Cycle 2 identifies $3 billion with a 2053 groundbreaking date and an opening date of 2057. The Project is also one of four pillar projects identified by the Metro Board as priority project to be completed in time for the 2028 Olympics and Paralympic Games in Los Angeles (Metro 2019).

The tentative schedule for completing the environmental process, design, and construction of the Project is shown in **Table 2-6**. As indicated above, based on reasonable assessment of the timing of availability of funds for implementation of the Project, the Metro Board may direct the staff to move into the Final EIR phase either upon adoption of the LPA or at a later date. The construction impact analysis contained in this document represents the current funding availability scenario and anticipated operations in 2035. The availability and source of funding may change and allow construction to initiate sooner.

Table 2-6. Project Timeline

Activity	Timeframe
Recirculated Draft EIR Published	Spring/summer 2022
Recirculated Draft EIR Comment Period	45 Days
Metro Board Identifies Locally Preferred Alternative	Summer/Fall 2022
Initiation of the Final EIR[1]	2023
Final Design[2]	Years 2023-2028
Construction-Related Activities[3]	Years 2029
Operations	Year 2035

Notes:
1 Upon conclusion of the selection of the Locally Preferred Alternative (LPA), the Metro Board may select to initiate a Final EIR.
2 Final design is initiated upon availability of funding. The final design and construction schedule are based on the current availability of funds from Measure R, which funds $1.25 billion of the project starting in FY 2026. The availability and source of funding may change and allow construction to initiate sooner.
3 Years of construction include construction activities and preconstruction activities such as ROW acquisition and utility relocation. Year 2035 is the first year of operation.

2.9 No Project Alternative

The No Project Alternative is used for comparison purposes to assess the relative benefits and impacts of constructing a new transit project versus implementing only currently planned and funded projects. The No Project Alternative is also a requirement per CEQA Section 15126.6(e) to allow decision-makers to compare the impacts of approving the Project with the impacts of not approving the Project. The No Project Alternative establishes impacts that would reasonably be expected to occur in the foreseeable future if the Project were not approved (OPR 2002).

The No Project Alternative would maintain existing transit service through the year 2042. No new transportation infrastructure would be built within the GSA aside from projects currently under construction or funded for construction and operation by 2042 via the 2008 Measure R or 2016 Measure M sales taxes. The No Project Alternative would include highway and transit projects identified for funding in Metro's 2020 LRTP (Metro 2020b) and the SCAG 2020-2045 RTP/SCS (SCAG 2020).

The No Project Alternative includes existing projects from the regional base year (2019) and planned regional projects in operation in the horizon year (2042). As such, the planned regional transit projects assumed in operation by 2042 include:

- Metro L (Gold) Line Foothill Extension to Claremont
- West Santa Ana Transit Corridor LRT from Artesia to Downtown LA
- Airport Metro Connect 96th Street Station/Metro C Line Extension LAX
- Metro C (Green) Line Extension to Crenshaw Blvd in Torrance – Redondo Beach to Torrance Transit Center
- Metro K (Crenshaw/LAX) Line
- Vermont Transit Corridor BRT – Hollywood Blvd to 120th Street
- Metro D (Purple) Line Extension
- East San Fernando Valley (SFV) Transit Corridor Project connecting Metro G (Orange) Line Van Nuys Station to the Sylmar/San Fernando Metrolink Station
- Metro G Line BRT Improvements
- North Hollywood to Pasadena BRT
- Sepulveda Pass Transit Corridor from Metro E (Expo) Line to East San Fernando Valley Line (Phase 1 and 2)
- Metro Regional Connector Transit Project