

2. Project Description

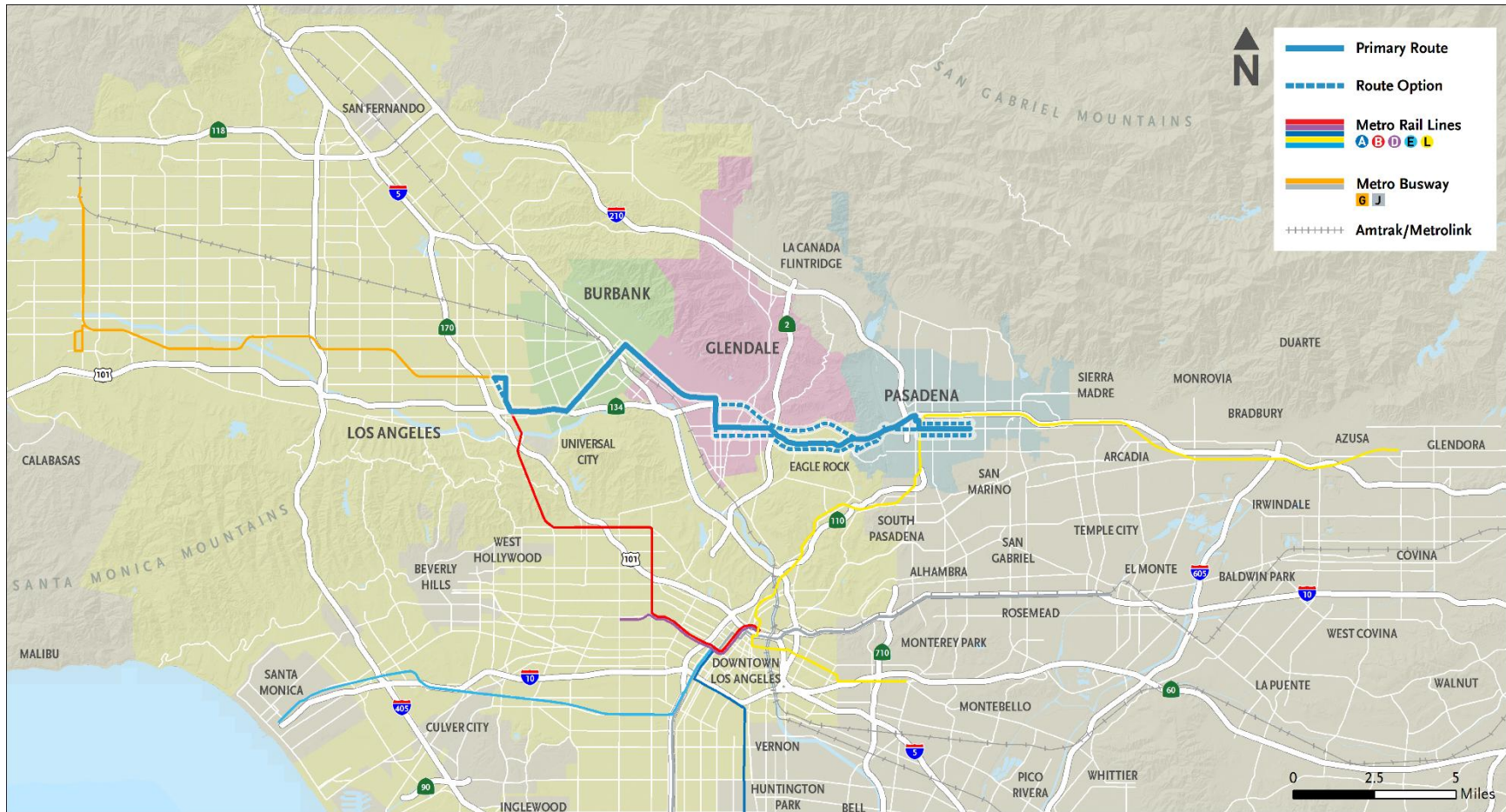
This chapter presents the Proposed Project location and surrounding uses, project history, project description, and the estimated construction schedule and phasing. The Proposed Project would provide a Bus Rapid Transit (BRT) service connecting several cities and communities between the San Fernando and San Gabriel Valleys. The Proposed Project is an approximately 18-mile BRT service that would run from the North Hollywood B/G Line (Red/Orange) Station in the City of Los Angeles through the Cities of Burbank and Glendale and into the City of Pasadena ending at Pasadena City College. The service would operate along a combination of local roadways and freeway segments in “mixed-flow” (sharing lanes with other traffic) and in designated (dedicated) bus lanes depending on location.

2.1 LOCATION AND SURROUNDING USES

The BRT corridor generally parallels the Ventura Freeway (State Route 134) between the San Fernando and San Gabriel Valleys; from west to east, the route traverses the communities of North Hollywood (in the City of Los Angeles), Burbank, Glendale, Eagle Rock (in the City of Los Angeles) and Pasadena. Potential connections with existing high-capacity transit services include the Metro B/G Lines (Red/Orange) in North Hollywood, the Metrolink Antelope Valley and Ventura Lines in Burbank, and the Metro L Line (Gold) in Pasadena. **Figure 2-1** shows the regional context of the Project corridor. Locally, the corridor includes many densely populated residential areas and connections with high-capacity transit services, and has cultural, entertainment, shopping, and employment areas distributed throughout, including:

- North Hollywood Metro B/G (Red/Orange) Line Station
- North Hollywood Arts District
- Burbank Media District
- Burbank Metrolink Station
- Downtown Burbank
- Downtown Glendale
- Eagle Rock
- Old Pasadena
- Metro L Line (Gold) Station
- Pasadena City College

Figure 2-1 – Regional Context of the Study Corridor



2.2 PROJECT HISTORY

The North Hollywood to Pasadena BRT Corridor was identified by Metro’s 2013 Countywide Bus Rapid Transit and Street Design Improvement Study as one of the region’s most heavily traveled corridors without a premium bus service. This led to the North Hollywood to Pasadena BRT Corridor Technical Study, completed in March 2017, which explored the feasibility and performance of implementing BRT, including dedicated bus lanes, enhanced stations, all-door boarding, and transit signal priority. The BRT Corridor Technical Study identified two initial BRT concepts (Primary Street and Primary Freeway), including multiple route options, as the most promising alternatives to address the transportation challenges within this corridor.

The North Hollywood to Pasadena BRT Corridor Planning and Environmental Study was initiated in August 2018 to further study BRT concepts. Metro launched an extensive public outreach effort to provide project updates and to solicit feedback on the two initial BRT concepts identified in the BRT Corridor Technical Study. This outreach effort included five community meetings in addition to approximately 40 individual briefings with the affected cities’ elected officials and other community, business, and neighborhood groups. To broaden the outreach efforts to reach historically underserved communities, the Metro outreach team attended neighborhood events such as street fairs, farmers markets, and music festivals, and shared project information at the North Hollywood Metro B/G Line (Red/Orange) Station.

Field reviews were conducted to evaluate potential routing and station opportunities and constraints, as well as land uses. Concurrently, a comprehensive database of street cross sections, existing transit service characteristics, and other data was assembled and evaluated to inform the screening and evaluation of alternatives in the North Hollywood to Pasadena Alternatives Analysis Report (April 2019). The results of the initial screening analysis were synthesized into three distinctive refined routes to further study — street-running, freeway-running, and hybrid street/freeway-running. Each of these three routes extended from the Metro B/G Line (Red/Orange) terminus on Lankershim Boulevard and terminated at Pasadena City College (PCC) near Colorado Boulevard at Hill Avenue in Pasadena. It was determined that the street-running route best met the Project’s Objectives and would achieve the highest number of overall benefits, including ridership potential, connectivity, transit-orientated community opportunities, equity, and environmental benefits.

Promising route segments from the other two screened routes were also recommended to be carried forward, resulting in a refined street-running route with options. The Alternatives Analysis Report recommended advancing a “Refined Street-Running Alternative with Route Options” for evaluation in the Environmental Impact Report (EIR). This alternative was presented in the Notice of Preparation (June 2019) and presented to the public at a series of Scoping Meetings held in the summer of 2019. Based upon input received from the public and stakeholders through the scoping process, one additional route option – the SR-134 between Harvey Dr. in Glendale and Figueroa St. in Los Angeles – was added for evaluation in the EIR.

The Alternatives Analysis Report also describes routes that were eliminated from consideration. Combined with the feedback received from the various communities, several of the initial routing options were eliminated from further consideration — three from the Primary Street Concept and two from the Primary Freeway Concept. Routes that were eliminated from consideration included:

- **Chandler Boulevard (North Hollywood – Burbank):** Although Metro owns right-of-way (ROW) along Chandler Boulevard, the median area is presently occupied by a Class 1 bikeway. The road is narrow and shifts from a single two-lane roadway in Los Angeles to a two-way couplet in Burbank. Within Burbank, the median is heavily landscaped, and the land use is relatively low-density residential. Metro received community input that a dedicated BRT lane along Chandler Boulevard in the City of Burbank would be incompatible with the residential neighborhood. Burbank residents also expressed strong concern over the potential loss of the bikeway. Moreover, this route option was anticipated to have low ridership potential based on its low-density characteristics.
- **Magnolia Boulevard (North Hollywood – Burbank):** Although Magnolia Boulevard would provide the shortest route between North Hollywood and Downtown Burbank, the roadway narrows to a single eastbound travel lane west of North Clybourn Avenue. The narrow roadway and presence of numerous small businesses that are dependent upon a limited on-street parking supply would make this route challenging to support BRT lanes. This option also was not supported by the Burbank community and City elected officials.
- **Brand Boulevard (Glendale):** This alignment was removed due to physical constraints; routing via Central Avenue in Downtown Glendale was preferred. Bulb-outs and diagonal parking on Brand Boulevard would need to be removed to accommodate dedicated BRT lanes. Without dedicated lanes, service reliability would suffer, particularly during peak times. BRT stations located along Central Avenue (900 feet to the west) at similar cross streets could provide access to the commercial uses along Brand Boulevard.
- **Burbank Boulevard – Hollywood Way – Hollywood Burbank Airport – Interstate 5:** Although this route would serve the Hollywood Burbank Airport, this alignment has several deficiencies. Burbank Boulevard in Los Angeles is too narrow to support dedicated BRT lanes. In addition, the Los Angeles segment has industrial and commercial land uses such as auto body shops that are not anticipated to attract significant ridership. Furthermore, this route is indirect with out-of-direction travel to the north, would not serve the Burbank Media District, and passes through Downtown Burbank along Interstate 5, which does not provide good connectivity to the downtown area. Access to the Hollywood Burbank Airport is provided by several existing transit routes and could be enhanced with an express type service similar to the FlyAway bus that currently serves Los Angeles International Airport.

- **Fair Oaks Avenue/Raymond Avenue Couplet (Pasadena):** This couplet, which would utilize the Fair Oaks interchange along the Ventura Freeway, was included in the Primary Freeway Concept in the BRT Corridor Technical Study. Although a northbound station could be provided immediately adjacent to the Del Mar L Line (Gold) Station, this option would not serve the heart of Pasadena, the South Lake Avenue District, or PCC. Input from stakeholders and City staff confirmed a preference for routing along Colorado Boulevard or a Green Street/Union Street couplet to Pasadena City College at Hill Avenue. However, an alignment along Fair Oaks Avenue from the SR-134 Interchange may be considered to provide a direct connection to the Memorial Park Metro L Line (Gold) Station before heading west either on Colorado Boulevard or the Green Street/Union Street couplet.

2.3 PROJECT DESCRIPTION

2.3.1 Project Objectives

The Proposed Project would provide improved and reliable transit service to meet the mobility needs of residents, employees, and visitors who travel within the corridor. In addition to advancing the goals of Metro's Vision 2028 Strategic Plan, objectives of the Proposed Project include:

- Advance a premium transit service that is more competitive with auto travel
- Improve accessibility for disadvantaged communities
- Improve transit access to major activity and employment centers
- Enhance connectivity to Metro and other regional transit services
- Provide improved passenger comfort and convenience
- Support community plans and transit-oriented community goals

2.3.12 Proposed Project

The Proposed Project is a BRT line that would extend approximately 18 miles from North Hollywood to the City of Pasadena. BRT is intended to move large numbers of people quickly and efficiently to their destinations. BRT service is comparable to light rail, but on rubber tires and at a lower cost.

The Proposed Project includes options for the BRT route and configurations. This was necessary due to public feedback during the completion of the Alternatives Analysis and EIR scoping feedback. It was not possible to reach a consensus on one route preferred by Metro, the cities, stakeholders, and general public. Metro determined that Metro decision-makers and all stakeholders would best be informed about the Proposed Project by equally evaluating the potential environmental impacts of multiple routes.

The following detailed description of the Proposed Project identifies:

- Project Route and Route Options
- Lane Configurations and Treatments
- Station Locations and Characteristics
- Operations
- Vehicles
- Parking and Travel Lane Conversion
- Bicycle Facilities
- Accessibility
- Maintenance and Storage
- Construction
- Cost Estimate
- Implementation Schedule

The Proposed Project extends approximately 18 miles from the western terminus at the North Hollywood station for the Metro B/G Lines (Red/Orange) to the eastern terminus at Pasadena City College in Pasadena. **Figure 2-2** depicts the Proposed Project route along with Route Options. A synopsis of the route is provided immediately below along with **Table 2-1** for a summary of the BRT running-way configurations and station locations (the Proposed Project is highlighted in blue).

Starting at the western terminus at the North Hollywood B/G Line (Red/Orange) station, the BRT route extends through the North Hollywood community of Los Angeles east via Chandler Boulevard to Vineland Avenue then south along Vineland Avenue transitioning onto Lankershim Boulevard accessing SR-134 near Riverside Drive. The route continues east via SR-134 to the Burbank Media District utilizing the Pass Avenue (eastbound) and Hollywood Way (westbound) interchanges. Through the City of Burbank, the BRT service travels via Pass Avenue and Riverside Drive (eastbound) or Alameda Avenue and Hollywood Way (westbound) connecting to Olive Avenue. The BRT route continues northeast along Olive Avenue to Downtown Burbank, turning southeast onto Glenoaks Boulevard and continues along Glenoaks Boulevard into the City of Glendale. The service continues along Glenoaks Boulevard towards Downtown Glendale turning south at Central Avenue. The BRT operates south through Downtown Glendale via Central Avenue to Broadway, turns east along Broadway to Harvey Drive, then turns and continues along West Broadway into the City of Los Angeles. Through the Eagle Rock community of Los Angeles, the BRT service operates along Colorado Boulevard between West Broadway and the SR-134 ramps just east of Linda Rosa Avenue. The route continues east along the freeway towards Pasadena, utilizing the Fair Oaks Avenue interchange. In Pasadena, the BRT service is routed via Fair Oaks Avenue, Walnut Avenue and Raymond Avenue to Colorado Boulevard. The route turns east continuing along Colorado Boulevard to the eastern terminus at Pasadena City College near the Colorado Boulevard/Hill Avenue intersection.

Figure 2-2 – Proposed Project with Route Options

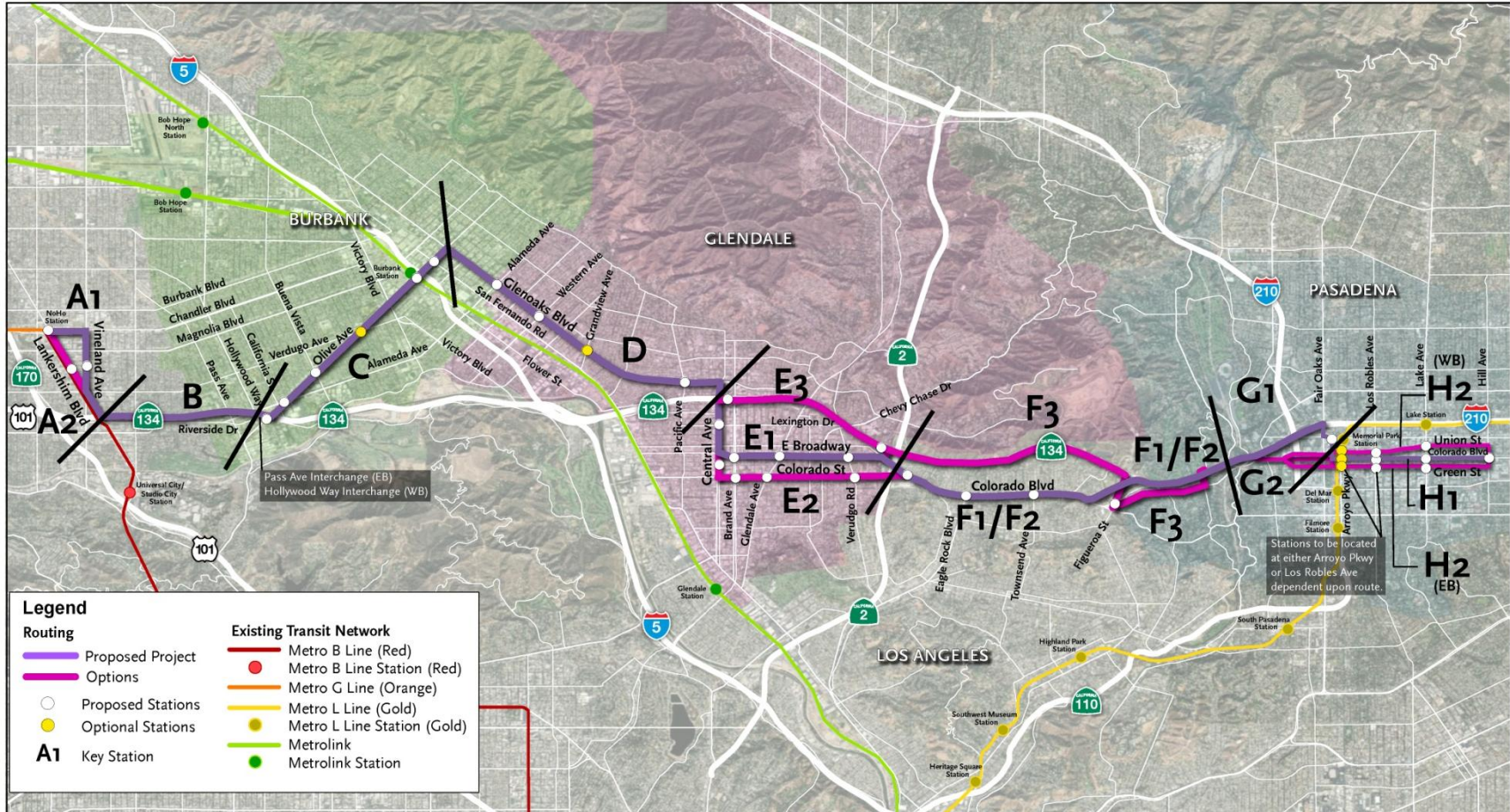


Table 2-1 – Route Segments

Key	Segment	From	To	BRT Lane Configuration	Stations
A1 (Project)	Lankershim Blvd.	N. Chandler Blvd.	Chandler Blvd.	Mixed-Flow	<ul style="list-style-type: none"> Western Terminus at North Hollywood Metro Station with connection to Metro B Line Line and Metro G Line (Orange)
	Chandler Blvd.	Lankershim Blvd.	Vineland Ave.	Side-Running ¹ Mixed-Flow ²	
	Vineland Ave.	Chandler Blvd.	Lankershim Blvd.	Center-Running	<ul style="list-style-type: none"> Hesby St.
	Lankershim Blvd.	Vineland Ave.	SR-134 Interchange	Center-Running Mixed-Flow ³	
A2 (Option)	Lankershim Blvd.	N. Chandler Blvd.	SR-134 Interchange	Side-Running Curb-Running ⁴	<ul style="list-style-type: none"> Hesby St.
B (Project)	SR-134 Freeway	Lankershim Blvd.	Pass Ave. (EB) Hollywood Wy. (WB)	Mixed-Flow	
C (Project)	Pass Ave. – Riverside Dr. (EB) Hollywood Wy. – Alameda Ave. (WB)	SR-134 Freeway	Olive Ave.	Mixed-Flow ⁵	
	Olive Ave.	Hollywood Wy. (WB) Riverside Dr. (EB)	Glenoaks Blvd.	Curb-Running	<ul style="list-style-type: none"> Riverside Dr. Alameda Ave. Buena Vista St. Verdugo Ave. (optional station) Olive Avenue bridge over Front St. and Burbank-Downtown Metrolink Station San Fernando Blvd.
D (Project)	Glenoaks Blvd.	Olive Ave.	Central Ave.	Curb-Running Median-Running ⁶	<ul style="list-style-type: none"> Alameda Ave. Western Ave. Grandview Ave. (optional station) Pacific Ave.

Key	Segment	From	To	BRT Lane Configuration	Stations
E1 (Project)	Central Ave.	Glenoaks Blvd.	Broadway	Mixed-Flow Side-Running ⁷	<ul style="list-style-type: none"> • Lexington Dr.
	Broadway	Central Ave.	Colorado Blvd.	Side-Running	<ul style="list-style-type: none"> • Brand Blvd. • Glendale Ave. • Verdugo Rd.
E2 (Option)	Central Ave.	Glenoaks Blvd.	Colorado St.	Mixed-Flow Side-Running ⁷	<ul style="list-style-type: none"> • Lexington Dr. • Americana Wy.
	Colorado St. – Colorado Blvd.	Central Ave.	Broadway	Side-Running	<ul style="list-style-type: none"> • Brand Blvd. • Glendale Ave. • Verdugo Rd.
E3 (Option)	Central Ave.	Glenoaks Blvd.	Goode Ave. (WB) Sanchez Dr. (EB)	Mixed-Flow	
	Goode Ave. (WB) Sanchez Dr. (EB)	Central Ave.	Brand Blvd.	Mixed-Flow	<ul style="list-style-type: none"> • Brand Blvd.
	SR-134 ⁸	Brand Blvd.	Harvey Dr.	Mixed-Flow	<ul style="list-style-type: none"> • Harvey Dr.
F1 (Option)	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	Side-Running Center Running ⁹	<ul style="list-style-type: none"> • Eagle Rock Plaza • Eagle Rock Blvd. • Townsend Ave.
F2 (Project)	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	Side-Running	<ul style="list-style-type: none"> • Eagle Rock Plaza • Eagle Rock Blvd. • Townsend Ave.
F3 (Option)	SR-134	Harvey Dr.	Figueroa St.	Mixed-Flow	
	Figueroa St.	SR-134	Colorado Blvd.	Mixed-Flow	<ul style="list-style-type: none"> • Colorado Blvd.
	Colorado Blvd.	Figueroa St.	SR-134 via N. San Rafael Ave. Interchange	Mixed-Flow	
G1 (Project)	SR-134	Colorado Blvd.	Fair Oaks Ave. Interchange	Mixed-Flow	
	Fair Oaks Ave.	SR-134	Walnut St.	Mixed-Flow	
	Walnut St.	Fair Oaks Ave.	Raymond Ave.	Mixed-Flow	
	Raymond Ave.	Walnut St.	Colorado Blvd. or Union St./Green St.	Mixed-Flow	<ul style="list-style-type: none"> • Holly St. - Metro L Line (Gold)

Key	Segment	From	To	BRT Lane Configuration	Stations
G2 (Option)	SR-134	Colorado Blvd.	Colorado Blvd. Interchange	Mixed-Flow	
	Colorado Blvd. or Union St./Green St.	Colorado Blvd. Interchange ¹⁰	Raymond Ave.	Mixed-Flow	<ul style="list-style-type: none"> • Arroyo Pkwy.
H1 (Project)	Colorado Blvd.	Raymond Ave.	Hill Ave.	Mixed-Flow	<ul style="list-style-type: none"> • Los Robles Ave.¹¹ • Lake Ave. • Eastern Terminus at Hill Ave. near Pasadena City College
H2 (Option)	Union St. (WB) Green St. (EB)	Raymond Ave. ¹²	Hill Ave.	Mixed-Flow	<ul style="list-style-type: none"> • Los Robles Ave.¹³ • Lake Ave. • Eastern Terminus at Hill Ave. near Pasadena City College

NOTES:

1. Eastbound side-running BRT lane between Fair Ave. and Vineland Ave.
2. Westbound mixed-flow BRT operations between Vineland Ave. and Lankershim Blvd.
3. Southbound mixed-flow BRT operations south of Kling St. and northbound mixed-flow BRT operations south of Hortense St.
4. Side-running BRT lanes transition to curb-running BRT lanes to the south of Huston St.
5. The eastbound BRT on Riverside Dr. transitions from mixed-flow to a curb-running BRT lane to the east of Kenwood Ave.
6. Curb-running BRT lanes transition to median-running BRT lanes at Providencia Ave.
7. Transitions from mixed-flow operations to side-running BRT to the south of Sanchez Dr.
8. Route continues via Broadway to Colorado Blvd./Broadway intersection (Project Route F2 and Route Option F1) or via SR-134 (Route Option F3)
9. Side-running BRT lanes transition to center-running BRT lanes between Ellenwood Dr. and El Rio Ave.
10. Route option is a couplet that would leave/join Colorado Blvd. via St. John Ave.
11. Los Robles Ave. station would not be included if paired with Route Option G2.
12. Route would transition to Colorado Blvd. at St. John Ave. if paired with Route Option G2.
13. Los Robles Ave. station would not be included if paired with Route Option G2.

The following text provides a detailed narrative description of the Proposed Project and the various Route Options, including proposed bus lane configurations and stations for each segment along with a summary of roadway modifications proposed to support the BRT service. Concept plans were developed for the Proposed Project and Route Options and are included in Appendix Z.

Section A – North Hollywood Community of the City of Los Angeles

This segment includes two alignment alternatives – the Proposed Project Segment A1, which follows Chandler Boulevard to Vineland Avenue to Lankershim Boulevard to SR-134, and Route Option A2, which follows Lankershim Boulevard directly to SR-134, as further described below.

Chandler-Vineland-Lankershim Route (Proposed Project Segment A1)

The route begins at the existing B/G (Red/Orange) Line North Hollywood Station and will operate along Chandler Boulevard east of Lankershim Boulevard to Vineland Avenue, turn at Vineland Avenue transitioning back to Lankershim Boulevard at the Vineland Avenue/Lankershim Boulevard/Camarillo Street intersection, then continue to access SR-134 at the Lankershim Boulevard interchange just north of Riverside Drive.

Buses would utilize a side-running bus lane in the eastbound direction created by restriping the Chandler Boulevard roadway (westbound buses would be in mixed-flow traffic). Buffers may be added to the existing Class II bike lanes along Chandler Boulevard east of Fair Avenue with removal of parking from the north curb. Queue jumps would be provided at the Chandler Boulevard/Vineland Avenue intersection to reduce conflicts with other traffic and to facilitate turns to and from Vineland Avenue.

Vineland Avenue would be reconstructed; the existing raised medians would be removed to accommodate new center-running bus lanes. The center-running bus lanes would extend to the Vineland Avenue/Lankershim Boulevard/Camarillo Street intersection and would transition onto Lankershim Boulevard.

As a result of implementation of the center-running bus lanes, through traffic and left-turn movements across the median would be restricted at the following locations¹:

Vineland Avenue

- Weddington Street
- McCormick Street
- Hesby Street (New Traffic Signal and Crosswalk)
- Peach Grove Street

Lankershim Boulevard

- Blix Street
- Kling Street

¹ It should be noted these restrictions are subject to refinement in future design phases.

The bus lanes would terminate at Kling Street south of Camarillo Street where a new traffic signal would provide a queue jump for southbound buses to exit the bus lane and weave to the outside lane approaching Riverside Drive. Eastbound buses would access SR-134 via the Riverside Drive on-ramp west of Lankershim Boulevard; westbound buses would exit directly onto Lankershim Boulevard.

A station serving the Arts District would be located at Hesby Street, about 600 feet east of Lankershim Boulevard. The loading zones are located along islands to the outside of the bus lanes (accessible to buses with right-hand side doors). The intersection would be signalized with a crosswalk serving the loading zones and allowing a signal-protected pedestrian access between the Arts District and other areas of North Hollywood located east of Vineland Avenue.

In conjunction with the reconstruction of Vineland Avenue, the existing Class II bike lanes would be upgraded to a buffered Class IV two-way cycle-track along the west curb. The cycle-track would extend south along Vineland Avenue through the Vineland Avenue/Lankershim Boulevard/Camarillo Street intersection to Hortense Street, where a new pedestrian beacon and crosswalk would be provided to transition back to the existing Class II bike lanes extending further south.

There would be a net loss of about one-third of the parking along Vineland Avenue and Lankershim Boulevard to provide protected turn bays and to accommodate stations. Replacement parking would be added along Vineland Avenue south of Camarillo Street (about 100+ stalls lost and about 40+ stalls replaced), and there is metered parking with availability along the Vineland Place frontage road paralleling Vineland Avenue north of Camarillo Street.

Lankershim Boulevard Route Option (Route Option A2)

This route option follows Lankershim Boulevard from the North Hollywood Station directly to the SR-134 freeway interchange at Lankershim Boulevard north of Riverside Drive. The BRT service would operate in side-running bus lanes created by conversion of the outside southbound travel lane from Chandler Boulevard to the vicinity of Huston Street. South of Huston Street, curb-running bus lanes extend to the SR-134 interchange just north of Riverside Drive, which would be added by removal of on-street parking and minor widening of the roadway (by means of a 1- to 2-foot narrowing of the sidewalk(s)), and two vehicular travel lanes would be maintained in each direction. In the northbound direction, a queue jump would be provided at Magnolia Boulevard to facilitate access to the left-turn lane at Chandler Boulevard and entry into the terminal station.

A station serving the Arts District would be located at Hesby Street with a near-side (i.e. before reaching the intersection) northbound loading zone and a far-side (i.e. after passing through the intersection) southbound loading zone. The loading zones would be developed with curb extensions to increase the pedestrian area for sidewalk circulation and station access.

Conversion of the outside travel lane to the north of Huston Street would retain nearly all of the existing on-street parking, with loss of about a dozen stalls in the vicinity of the station. Further south there would be a loss of about 70 parking stalls, primarily immediately north of the Vineland Avenue/Lankershim Boulevard/Camarillo Street intersection and in the vicinity of the SR-134 interchange. However, there is metered on-street parking located along Vineland Place north of Camarillo Street.

Section B – North Hollywood to Burbank

SR-134 (Proposed Project Segment B)

The BRT route continues east along SR-134 from the Lankershim Boulevard interchange to the Burbank Media District. Eastbound buses would exit at the Pass Avenue interchange and continue in mixed-flow via Pass Avenue and Riverside Drive to Olive Avenue. A short stretch of Riverside Drive east of Kenwood Avenue would be restriped to provide a curb-running bus lane approaching Olive Avenue. Westbound buses would turn from Olive Avenue to Hollywood Way, and would operate in mixed-flow north to Alameda Avenue to access the westbound SR-134 on-ramp east of Hollywood Way.

Sections C and D – City of Burbank

The BRT route follows Olive Avenue (Proposed Project Segment C) through the City of Burbank to downtown before turning onto Glenoaks Boulevard (Proposed Project Segment D).

Olive Avenue (Proposed Project Segment C)

The BRT service would operate in curb-running bus lanes along Olive Avenue accomplished by restriping the existing facility to remove existing on-street parking (about 500 stalls) and/or minor roadway widening. West of Alameda Avenue, the roadway is 72-feet wide and could support bus lanes by restriping alone. East of Alameda Avenue, the roadway narrows to 68-feet at various locations and would be widened to 72 feet by moving the curb out into the shoulder area (narrowing the sidewalk while still preserving adequate sidewalk width to meet ADA requirements²). Right-turning vehicles would merge with the bus lane approaching each intersection and right-turns would be allowed from the curb bus lane. The proposed treatment retains two general purpose travel lanes along Olive Avenue except along the bridge over Interstate 5 between Lake and 1st Streets, which would be restriped to convert the outside lane to a dedicated bus lane.

² The roadway is generally 68 feet curb to curb within a right-of-way which is generally 100 feet wide. West of Alameda Avenue, sidewalks are approximately 15 to 16 feet wide. Between Alameda Avenue and Lake Street, the shoulder area generally includes a landscape setback with a narrower sidewalk – in these sections the widening would generally be within the landscape setback. In the downtown, between 1st Street and Glenoaks Boulevard, the sidewalks are generally 15 to 16 feet wide.

BRT stations would be provided along Olive Avenue at Riverside Drive, Alameda Avenue, Buena Vista Street, Verdugo Avenue (potential station), Front Street (on bridge at Metrolink station), and San Fernando Boulevard. The stations would be integrated into the sidewalk area, which would be widened where feasible using a curb extension to facilitate access and pedestrian circulation. At the Downtown Burbank Metrolink Station, a new traffic signal and crosswalk would be provided on the bridge providing access to existing vertical circulation elements.

Glenoaks Boulevard (Proposed Project Segment D)

Curb-running bus lanes would be provided along the segment of Glenoaks Boulevard between Olive Avenue and Providencia Avenue by removal of existing parking (about 30 stalls) and minor widening similar to Olive Avenue (i.e. accomplished through narrowing the approximately 15 foot wide sidewalk by about 2-feet while still preserving adequate sidewalk width), with shared right-turns allowable from the bus lane at intersections. A queue jump would be provided for westbound buses to make a left-turn from a right-turn bay on Glenoaks Boulevard at Olive Avenue. The BRT route continues southeast via Glenoaks Boulevard into Glendale. East of Providencia Avenue a median-running configuration would be provided by converting the inside travel lanes to a bus-only operation. A queue jump would be provided for eastbound buses at Verdugo Avenue to facilitate transitioning across the roadway to the median-running section; westbound buses would merge with traffic west of Providencia Avenue and would transition to a curb-running bus lane approaching Verdugo Avenue.

Section D and E – City of Glendale

This segment includes Segment D along Glenoaks Boulevard and Segment E, which includes three alignment alternatives: E1, the Proposed Project, which is routed via Central Avenue and Broadway, Route Option E2, which is routed via Central Avenue and Colorado Street, and Route Option E3, which follows SR-134, as further described below.

Glenoaks Boulevard (Proposed Project Segment D)

The route continues southeast in median-running bus lanes along Glenoaks Boulevard through the northwestern portion of the City of Glendale to Central Avenue north of downtown. Dedicated median-running bus lanes would be created along Glenoaks Boulevard by restriping the inside lane for bus-only use. At major intersections along Glenoaks Boulevard, the existing landscaped median would be narrowed to accommodate left-turn bays (existing mid-block signalized pedestrian crossings would be retained). Far-side BRT stations with loading zones to the outside of the bus lanes (for right-hand side loading) that are accessible by signalized crosswalks would be provided opposite the left-turn bays at the following locations: Alameda Avenue, Western Avenue, Grandview Avenue (optional station), and Pacific Avenue. With conversion of the inside travel lane, there would be no loss of parking along Glenoaks Boulevard; the existing bicycle lanes along this section would also be retained.

Central Avenue (Proposed Project Segment E1)

The BRT route turns south towards Downtown Glendale from the intersection of Glenoaks Boulevard / Central Avenue. Buses would operate in mixed-flow along Central Avenue through the SR-134 interchange area; dedicated bus lanes would be provided south of Sanchez Drive by restriping to convert the outside lane to bus-only, with right-turns allowed from the bus lane. The bus lanes would be side-running adjacent to the existing Class II bike lanes which extend from Doran Street to Broadway. A station would be provided at Lexington Drive where a pair of far-side loading zones would be constructed along the sidewalk using a curb extension to facilitate pedestrian access and circulation. A bicycle bypass lane would be provided behind the stations to avoid bus-bicycle conflicts in the loading zone.

Broadway (Proposed Project Segment E1)

The BRT route turns from Central Avenue and follows Broadway to Harvey Drive. Dedicated curb- and side-running bus lanes would be provided along Broadway by converting the outside travel lane to bus-only with right-turns allowed from the bus lane. Between Central Avenue and Brand Boulevard, where no on-street parking exists, the outside travel lane would be converted to bus-and-right-turn only; east of Brand Boulevard, the outside travel lane would be converted into a side-running bus-only lane retaining existing on-street parking and curb extensions. The side-running lanes would run alongside the parking lane which would remain (with the possible loss of a few parking stalls at each station). Far-side stations would be provided along the sidewalk at Brand Boulevard, Glendale Avenue and Verdugo Road, with curb extensions where feasible. The existing Class III bicycle “sharrows” would be removed; however, bicycles would be allowed to use the bus lanes. Buses would maneuver into the mixed-flow lanes to pass cyclists as-needed. Red-colored pavement would be implemented in the shared bus lanes as a traffic control device. The Federal Highway Administration (FHWA) has issued an Interim Approval for the optional use of red-colored pavement to enhance the visibility of station stops, bus lanes, or other locations in the roadway that are reserved for multi-modal facilities where public transit is the primary mode. At Harvey Drive, the BRT service turns onto W. Broadway heading into the Eagle Rock community of the City of Los Angeles.

Colorado Street (Route Option E2)

This route option would also operate in dedicated bus lanes in a side-running configuration along Central Avenue south of Sanchez Drive. However, rather than turning at Broadway, the BRT would continue to a turn at Colorado Street. The BRT would follow Colorado Street connecting to Colorado Boulevard approaching the Los Angeles city limit near SR-2. Dedicated curb- and side-running bus lanes would be provided along Colorado Street by restriping to convert the outside lane to a bus-and-right-turn only lane. Between Central Avenue and Brand Boulevard, where no on-street parking exists, the outside travel lane would be converted to bus-and-right-turn only; east of Brand Boulevard, the outside travel lane would be converted into a side-running bus-only lane retaining existing on-street parking and curb extensions. The route continues east to the Glendale border, where buses would operate in mixed-flow approaching and through the SR-2 interchange area along Colorado Boulevard, heading into the Eagle Rock

community of Los Angeles. Similar to the Proposed Project Segment E1, there would be a station along Central Avenue at Lexington Drive and there would be a second station along Central Avenue at Americana Way. Along Colorado Street, there would be three more stations – at Brand Boulevard, Glendale Avenue, and Verdugo Road. All stations would have far-side loading zones along the sidewalk, which would be widened with curb extensions where feasible.

SR-134 (Route Option E3)

This route option utilizes the SR-134 freeway between Brand Boulevard and Harvey Drive. The BRT service would operate in mixed-flow along the frontage road couplet – Sanchez Drive (eastbound) and Goode Avenue (westbound) – to access the SR-134 ramps at Brand Boulevard. The BRT service continues along the freeway to the vicinity of the Harvey Drive interchange where buses would either exit to serve a station at Harvey Drive and then continue east into Eagle Rock (via Sections F1 or F2) or continue east along the freeway (via Section F3). Loading zones would be located along the shoulder areas of the eastbound off-ramp and westbound on-ramp.

Section F – Eagle Rock Community of the City of Los Angeles

This district includes Proposed Project Segment F2 which would provide side-running bus lanes along Colorado Boulevard, Route Option F1 which is a hybrid side-and-center-running Configuration Option along Colorado Boulevard, and Route Option F3 which is mixed-flow, routed via SR-134, Figueroa Street and Colorado Boulevard.

Colorado Boulevard Hybrid Side-and-Center Running Configuration Option (Route Option F1)

An alternative configuration would provide side-running bus lanes extending from the West Broadway/Colorado Boulevard intersection transitioning to a center-running configuration east of Ellenwood Drive. The center-running configuration would replace the existing median along Colorado Boulevard. As a result of implementation of the center-running bus lanes, various through traffic and left-turn movements across the median would be restricted at the following intersections:³

- Lockhaven Avenue
- Windemere Avenue
- El Rio Avenue
- Rockland Avenue
- Caspar Avenue (partial)
- Shearin Avenue
- Glen Iris Avenue
- Highland View Avenue
- Hermosa Avenue (partial)
- Argus Drive (partial)
- La Roda Avenue
- Mount Royal Drive (partial)
- Townsend Avenue (partial)
- Floristan Avenue
- Hartwick Street
- Los Robles Street
- Mt. Helena Avenue
- Holbrook Street

³ Some movements would remain open at locations indicated as right turn movements would remain allowable at all locations. It should be noted these restrictions are subject to refinement in future design phases.

The center-running configuration would require full reconstruction of the street. The BRT lanes would be placed in the center and new narrower medians would be interspersed throughout the segment. In addition, Class II Bicycle Lanes would be provided. The center-running configuration would extend to Dahlia Drive; between Dahlia Drive and the SR-134 ramps east of Linda Rosa Avenue there would be an eastbound center-running bus lane whereas westbound buses would operate in mixed-flow. There would be three stations serving Eagle Rock – Eagle Rock Plaza (near Sierra Villa Drive), Eagle Rock Boulevard, and Townsend Avenue. The stations at Eagle Rock Boulevard and Townsend Avenue would be built on loading islands accessible by signalized crosswalks. In addition to replacing the existing striped and raised median with a center-running busway, this alternative configuration would result in the loss of approximately 50 percent of the existing on-street parking along Colorado Boulevard and would require removal and/or modification of most of the Active Transportation Program Cycle 2 improvements proposed by the City of Los Angeles.

Colorado Boulevard (Proposed Project Segment F2)

The BRT service would operate through the Eagle Rock community of Los Angeles along Colorado Boulevard, connecting from West Broadway or Colorado Street in Glendale.

The Proposed Project configuration would provide dedicated side-running bus lanes east of the Colorado Boulevard/West Broadway intersection extending approximately 1.5 miles to Dahlia Drive. Under this configuration, the existing buffered bike lanes would be converted to 11- or 12-foot shared bus-and-bicycle lanes. Bicycles would be allowed to operate within the bus lane. Buses would maneuver into the mixed-flow lanes to pass cyclists as-needed. Buses would operate in mixed-flow between Dahlia Drive and the SR-134 ramps just east of Linda Rosa Avenue, and would continue via SR-134 to Pasadena. Right-turning vehicles would merge into the bus-and-bicycle lane approaching intersections and would turn from the bus lane. There would be three stations serving Eagle Rock – Eagle Rock Plaza (near Sierra Villa Drive), Eagle Rock Boulevard, and Townsend Avenue. The stations would utilize curb extensions to accommodate station elements while maintaining adequate sidewalk width for pedestrian circulation and access to adjacent buildings. A bicycle bypass lane would be provided behind the stations to avoid bus-bicycle conflicts in the loading zone. This configuration would retain the existing painted and raised landscaped medians along Colorado Boulevard along with most of the on-street parking (with no more than 10 stalls removed at station locations). Curb extensions proposed as part of the City of Los Angeles Active Transportation Program Cycle 2 project would be retained.

SR-134 (Route Option F3)

This route option bypasses the heart of the Eagle Rock community by extending the BRT service east along SR-134 between the Harvey Drive interchange in Glendale and the Figueroa Street interchange. The BRT service would operate along Figueroa Street to a station at the Colorado Boulevard/Figueroa Street intersection continuing east via Colorado Boulevard to re-join the SR-134 at the North San Rafael Avenue interchange. Buses would operate in mixed-flow throughout this segment.

Sections G and H – City of Pasadena

Buses would operate in mixed-flow along existing travel lanes throughout the City of Pasadena, extending to the terminus at Pasadena City College near the Colorado Boulevard/Hill Avenue intersection. There are two segments in Pasadena, each of which includes the Proposed Project as well as one Route Option. Because the BRT service would operate along existing travel lanes, parking impacts would be limited to less than 10 stalls per station where red curb zones may need to be lengthened to accommodate the BRT along with other bus services.

Fair Oaks Interchange (Proposed Project Segment G1)

The BRT route exits SR-134 at the Fair Oaks Avenue interchange and operates via Fair Oaks Avenue – Walnut Street – Raymond Avenue to Colorado Boulevard or the Union Street/Green Street one-way couplet, dependent upon the selected route in Section H. A station serving the Metro L Line (Gold) would be provided along Raymond Avenue at Holly Street adjacent to the Memorial Park station.

Colorado Boulevard Interchange Route Option (Route Option G2)

This route option uses the Colorado Boulevard interchange rather than the Fair Oaks Avenue interchange. Buses would follow Colorado Boulevard to the eastern terminus or would transition via St. John Avenue to the Union Street/Green Street one-way couplet dependent upon the selected route in Section H.

Colorado Boulevard (Proposed Project Segment H1)

The BRT service would operate via Colorado Boulevard to the eastern terminus at Pasadena City College. Stations would be provided at Los Robles Avenue (with Proposed Project Segment G1) or Arroyo Parkway (with Route Option G2), as well as at Lake Avenue and Hill Avenue. An on-street bus layover zone would also be provided along Hill Avenue south of Colorado Boulevard by restriping the roadway, which would eliminate a short stretch of curb parking on the southbound side of Hill Avenue.

Green Street – Union Street One-Way Couplet (Route Option H2)

Under this route option, buses would operate eastbound along Green Street then northbound via Hill Avenue to the eastern terminus, before returning westbound along Union Street. Station pairs would be provided at Los Robles Avenue (with Proposed Project Segment G1) or Arroyo Parkway, as well as at Lake Avenue. The terminal station and layover zone would be located along the east curb of Hill Avenue south of Colorado Boulevard.

2.4 STATION LOCATIONS AND CHARACTERISTICS

The Proposed Project includes 35 possible station sites. This includes 21 potential stations along with two optional (future infill) stations along the Proposed Project route, plus an additional 12 potential station locations along Route Option segments. For planning purposes,

the typical station footprint is considered to be 100 feet long and 10 feet wide; however, station loading zones as short as 70 feet in length may be required due to site constraints. Depending upon the station location, red curb may extend up to 40 feet in advance of, or beyond, the platform area to provide maneuvering room for buses. It is anticipated that buses with all-door boarding and on-board fare collection would load from a near level raised curb within the station area.

Where feasible, a curb extension up to 12 feet wide would be provided to accommodate the station platform to minimize impacts to the existing sidewalk area. A minimum pedestrian pathway of five feet would be maintained through the station area to accommodate pedestrian circulation and maintain access to adjacent land uses. Bicycle lanes, where present, would be routed on a designated bike path behind the loading area at stations.

Metro BRT stations are designed to create a comfortable and safe environment for passengers, fulfilling both a functional and aesthetic need. The stations are distinguishable from competing street elements, yet complementary the surrounding environments. Station amenities associated with the Proposed Project would be designed using a kit of parts approach, similar to Metro rail stations. The kit of parts approach is under development by Metro, although station elements as described below would be utilized to establish a minimum requirement of baseline of amenities for platforms. At locations with higher ridership or where space allows, additional enhanced amenities would be provided to support the Proposed Project. Stations siting would allow for safe and accessible paths of travel for transit riders including those accessing stations on foot, bike and other rolling modes.

Table 2-2 provides a summary of the proposed station locations and key aspects of the proposed configuration at each location. (Refer to **Figure 2-2** for a map providing station locations and route segment labels.) Where integration with existing sidewalks, plazas or landscaping is indicated, station design would consider retaining or relocating existing vertical elements such as trees, signs, parking meters and streetlights. In addition, one half of one percent of the overall project construction costs will be set aside for the integration of site-specific public art to promote a sense of place for surrounding neighborhoods.

Station placement and design features would be subject to refinement during the Preliminary Engineering phase to meet site-specific opportunities and constraints.

2.5 LANE CONFIGURATIONS AND TREATMENTS

The configuration of dedicated bus lanes could be curb-running, side-running alongside existing parking and/or bicycle facilities, and/or center/median-running in the center of the roadway or alongside existing roadway medians. The treatments for the Proposed Project and treatment options being assessed in the Draft EIR are shown in **Table 2-1**. The treatments are further described below.

Table 2-2 – Station/Platform Locations

Location	Segment / Status	Description
NORTH HOLLYWOOD (CITY OF LOS ANGELES)		
North Hollywood Metro B/G (Red/Orange) Line Station	A1, A2 Proposed Project Terminus	Existing off-street station would be replaced with a new transit center that would accommodate the Proposed Project. The new transit center would be constructed regardless of the proposed project as part of the separate and independent North Hollywood Station Joint Development Project (see https://www.metro.net/projects/jd-noho/s).
Vineland Ave. at Hesby St.	A1 Proposed Project	Median station with islands outboard of bus lanes (for right-hand side loading) south of Hesby St. (eastbound far-side / westbound near-side) with new traffic signal and crosswalk for access.
<i>Lankershim Blvd. at Hesby St.</i>	A2 <i>(Route Option)</i>	Sidewalk station with curb extensions south of Hesby St. (eastbound near-side / westbound far-side) using existing traffic signal and crosswalk for access.
CITY OF BURBANK		
Olive Ave. at Riverside Drive and Hollywood Way	C Proposed Project	Sidewalk station with eastbound loading zone on curb extension on Riverside Drive far-side from Hollywood Way; westbound loading zone on Olive Ave. far-side from Riverside Drive and would be integrated with existing plaza.
Olive Ave. at Alameda Ave.	C Proposed Project	Sidewalk station with 70-foot far-side eastbound loading zone displacing existing westbound Alameda Ave. to eastbound Olive Ave. “free” right-turn pocket; westbound far-side loading zone at existing bus stop.
Olive Ave. at Buena Vista St.	C Proposed Project	Sidewalk station with far-side eastbound loading zone shifted beyond commercial driveway; near-side 70-foot westbound loading zone would be integrated with existing landscaping and plaza.
Olive Ave. at Verdugo Ave.	C <i>Optional Station</i>	Sidewalk station with far-side eastbound loading zone along existing triangular island; far-side westbound loading zone would displace existing eastbound Verdugo Ave. to westbound Olive Ave. “free” right-turn pocket.
Olive Ave. at Burbank-Downtown Metrolink Station (on bridge)	C Proposed Project	Sidewalk station with curb extensions and new mid-block signalized crosswalk connecting existing elevator and stairs adjacent to the westbound lanes and pedestrian ramp adjacent to the eastbound lanes.
Olive Ave. at San Fernando Blvd.	C Proposed Project	Sidewalk station with 120 – 140-foot-long far-side loading zones to accommodate the Project and local bus services. Station elements would be integrated with sidewalk and would avoid conflicts with existing mature street trees.

Location	Segment / Status	Description
CITY OF GLENDALE		
Glenoaks Blvd. at Alameda Ave.	D Proposed Project	Median station with far-side loading islands outboard of bus lanes (for right-hand side loading) accessible by existing signalized crosswalk. The existing landscaped median-noses would be reconfigured to accommodate the stations and left-turn bays.
Glenoaks Blvd. at Western Ave.	D Proposed Project	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
<i>Glenoaks Blvd. at Grandview Ave.</i>	<i>D Optional Station</i>	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
Glenoaks Blvd. at Pacific Ave.	D Proposed Project	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
Central Ave. at Lexington Dr.	E1 & E2 Proposed Project	Sidewalk station with far-side loading zones along curb extensions; includes bicycle pathway behind station.
Broadway at Brand Blvd.	E1 Proposed Project	Sidewalk station with far-side loading zones. Curb extension would be provided to widen sidewalk for eastbound station; westbound station would be integrated with sidewalk/plaza.
Broadway at Glendale Ave.	E1 Proposed Project	Sidewalk station with far-side loading zones. Stations would be integrated with sidewalk.
Broadway at Verdugo Rd.	E1 Proposed Project	Sidewalk station with far-side loading zones. Stations would utilize existing wide sidewalks.
<i>Central Ave. at Americana Way</i>	<i>E2 Route Option</i>	Sidewalk station with far-side loading zones. Stations would utilize existing wide sidewalks.
<i>Colorado St. at Brand Blvd.</i>	<i>E2 Route Option</i>	Sidewalk station with far-side loading zones along curb extensions.
<i>Colorado St. at Glendale Ave.</i>	<i>E2 Route Option</i>	Sidewalk station with far-side loading zones along curb extensions.
<i>Colorado St. at Verdugo Rd.</i>	<i>E2 Route Option</i>	Sidewalk station with far-side loading zones along curb extensions.
<i>Brand Blvd. at Goode Ave. and Sanchez Dr.</i>	<i>E3 Route Option</i>	Sidewalk station with mid-block near-side eastbound and far-side westbound loading zones along curb extensions. Eastbound platform set back from Brand Blvd. to avoid conflict with right-turn bay.

Location	Segment / Status	Description
<i>SR-134 Ramps and Harvey Dr.</i>	<i>E3 Route Option</i>	Stations on shoulders of ramps with near-side eastbound and far-side westbound loading zones. The eastbound station would be developed on the off-ramp by improving the existing LADOT Commuter Express 549 bus stop; westbound station would be constructed in shoulder area of the ramp.
EAGLE ROCK DISTRICT (CITY OF LOS ANGELES)		
<i>Colorado Blvd. at Eagle Rock Plaza</i>	<i>F1 / F2 (Route Option / Proposed Project)</i>	Sidewalk station with loading zones along curb extensions; includes bicycle pathway behind station. Station locations vary based upon the roadway configuration and connecting route segments: for the F2 / Proposed Project (side-running configuration), stations would be located near-side at the Colorado Blvd. / Sierra Villa Drive signalized intersection using the existing crosswalks for access. With the F1 / alternative configuration (hybrid side-and-center-running) the eastbound loading zone is located on the far-side of the Colorado Blvd. / W. Broadway intersection. For buses continuing onto W. Broadway the westbound loading zone with the hybrid configuration is located on the near-side of this intersection; buses continuing along Colorado Blvd. (Segment E2) would load at a near-side station at the Colorado Blvd. / Sierra Villa Drive intersection.
<i>Colorado Blvd. at Eagle Rock Blvd.</i>	<i>F1 / F2 (Route Option / Proposed Project)</i>	Station locations and configurations vary based upon the roadway configuration: For the F2 / Proposed Project (side-running configuration) sidewalk stations with loading zones along curb extensions, including a bicycle pathway behind the station, would be provided far-side at the Colorado Blvd. / Eagle Rock Blvd. intersection. With the F1 / alternative configuration (hybrid side-and-center-running) median stations with far-side loading islands outboard of bus lanes (for right-hand side loading) accessible by existing signalized crosswalk would be provided. The eastbound station would be located far-side at the Colorado Blvd. / Caspar Ave. intersection; the westbound station would be located far-side at the Colorado Blvd. / Eagle Rock Blvd. intersection.
<i>Colorado Blvd. at Townsend Ave.</i>	<i>F1 / F2 (Route Option / Proposed Project)</i>	Station locations and configurations vary based upon the roadway configuration: For the F2 / Proposed Project (side-running configuration) sidewalk stations with loading zones along curb extensions, including a bicycle pathway behind the station, would be provided near-side of the Colorado Blvd. / Townsend Ave. intersection (eastbound station west of the south leg of Townsend Ave. and westbound station east of the north leg). With the F1 / alternative configuration (hybrid side-and-center-running) median stations with loading islands outboard of bus lanes (for right-hand side loading) accessible by existing signalized crosswalk would be provided west of the south leg of Townsend Ave. (near-side for eastbound buses and far-side for westbound buses).

Location	Segment / Status	Description
<i>Figueroa St. at Colorado Blvd.</i>	<i>F3 Route Option</i>	Sidewalk station with far-side loading zones along curb extensions at the Figueroa St. / Colorado Blvd. intersection. The eastbound station is on the east leg of the intersection; the westbound station is on the north leg.
CITY OF PASADENA		
Raymond Ave. at Holly St.	G1 Proposed Project	Sidewalk station with curb extensions on Raymond Ave. north of Holly St. proximate to the Metro L Line (Gold). The eastbound loading zone would be near-side and the westbound loading zone would be far-side. Vertical elements would be integrated with the existing landscaping to avoid removal of large trees and would be kept clear of the facade of the historic Raymond Theatre building.
<i>Colorado Blvd. at Arroyo Parkway</i>	<i>H1 Route Option</i>	This station option would provide the nearest connection to the Metro L Line (Gold) if the G2 Route Option utilizing the Colorado Blvd. interchange is selected. The station would be located on the sidewalk and would have 200-foot far-side loading zones (to accommodate the BRT and other bus services). Curb extensions behind the Rose Bowl Parade “blue line” would retain a wide sidewalk walking zone for pedestrians behind the loading area.
Colorado Blvd. at Los Robles Ave.	H1 Proposed Project	This station would be used if the G1 Proposed Project route utilizing the Fair Oaks Ave. interchange is selected. The station would be located on the sidewalk and would have 200-foot far-side loading zones (to accommodate the BRT and other bus services). Curb extensions behind the Rose Bowl Parade “blue line” would retain a wide sidewalk walking zone for pedestrians behind the loading area.
Colorado Blvd. at Lake Ave.	H1 Proposed Project	The station would be located on the sidewalk and would have 200-foot far-side loading zones (to accommodate the BRT and other bus services). Curb extensions behind the Rose Bowl Parade “blue line” would retain a wide sidewalk walking zone for pedestrians behind the loading area.
Colorado Blvd. at Hill Ave.	H1 Proposed Project	The eastern terminal station would be located on the sidewalk and would have 200-foot far-side loading zones (to accommodate the BRT and other bus services). Curb extensions behind the Rose Bowl Parade “blue line” would retain a wide sidewalk walking zone for pedestrians behind the loading area. To support BRT operations, Hill Ave. may be restriped to provide an on-street layover area south of Colorado Blvd., which could also serve as a boarding area for westbound service. If electric bus charging infrastructure is provided, vertical elements, potentially including a mast and electric bus charging boom, would be integrated with the existing street trees and a charging sub-station may displace as many as ten parking stalls within the adjacent Pasadena City College surface parking lot.

Location	Segment / Status	Description
<i>Green St. and Union St. at Arroyo Parkway</i>	<i>H2 Route Option</i>	This station pair option (eastbound along Green St. and westbound along Union St.) provides the nearest connection to the Metro L Line (Gold) if the G2 Route Option utilizing the Colorado Blvd. interchange is selected. The loading zones would be built using a curb extension to increase the sidewalk width; the eastbound station on Green St. would have a far-side loading zone, and the westbound station on Union St. would have a near-side loading zone.
<i>Green St. and Union St. at Los Robles Ave.</i>	<i>H2 Route Option</i>	This station pair (eastbound along Green St. and westbound along Union St.) would be used if the G1 Proposed Project route utilizing the Fair Oaks Ave. interchange is selected. The loading zones would be built using a curb extension to increase the sidewalk width.
<i>Green St. and Union St. at Lake Ave.</i>	<i>H2 Route Option</i>	A pair of stations (eastbound along Green St. and westbound along Union St.) would be provided east of Lake Ave. The eastbound station would be far-side and would be built with a curb extension to increase the sidewalk width adjacent to the bank building plaza (the existing green zone and yellow loading zone would be relocated to the east). The westbound station would be near-side with the loading zone located on an island or plaza adjacent to the rightmost through lane.
<i>Hill Ave. at Colorado Blvd.</i>	<i>H2 Route Option</i>	The eastern terminal station would be located along the sidewalk mid-block between Green St. and Colorado Blvd. The existing roadway would be restriped to provide an approximate 200-foot long combined layover and station zone along the east curb (the platform area would be about 150 feet south of Colorado Blvd.) Station vertical elements, potentially including a mast and electric bus charging boom would be integrated with the existing street trees; the landscaping between the curb and adjacent PCC parking lot would be paved to accommodate the station and pedestrian circulation. A charging sub-station may displace as many as ten parking stalls, if provided.

2.5.1 Center-Running

Center-running bus lanes typically provide two lanes (one for each direction of travel) in the center of the roadway. Center-running bus lanes may be physically separated from adjacent traffic by short raised-curbs to provide an exclusive guideway for BRT vehicles or can simply be delineated with pavement markings, as shown on **Figure 2-3**. This type of runningway can be generally applied in streets with 100-foot or greater curb-to-curb width. In order to preclude roadway traffic from turning across the bus lanes, a physical barrier such as a short raised-median barrier between the two bus lanes may be provided. Cross-street and turning traffic is usually limited to signalized intersections; pedestrian crossings are signal-controlled as well, using traffic signals or hybrid pedestrian beacons. Left-turns across the busway are usually signal-controlled with turns made from left-turn pockets outboard from the center bus lanes.

2.5.2 Median-Running

In median-running segments, the BRT service operates within dedicated lanes adjacent to a median (i.e., the left-most lane in the direction of travel). Stations can be placed within the median (for buses with left-hand side doors), as shown in **Figure 2-4**. Alternatively, the median can be reconfigured in the station area to provide loading islands located outside of the bus lanes (for buses with standard right-hand side doors.) A median-running bus lane may also be physically separated from parallel roadway traffic in a defined guideway through the use of short raised-curbs or rumble strips. Similar to the center-running configuration, cross-street and turning traffic is usually limited to signalized intersections; pedestrian crossings are signal-controlled as well, using traffic signals or hybrid pedestrian beacons. Left-turns across the busway are usually signal-controlled with turns made from left-turn pockets outboard from the bus lane.

2.5.3 Side-Running

Side-running bus lanes dedicate the right-most travel lane to BRT vehicles, as shown in **Figure 2-5**. Side-running bus lanes are separated from the curb by bicycle lanes, parking lanes, or both, and may allow for right-turns to be made from the curb lane at intersections reducing conflicts with buses. Otherwise, right-turns are allowed to be made from the bus lane. Because station placement is adjacent to the sidewalk, stations are typically developed with bulb outs or curb extensions, enhancing walkability and the pedestrian environment. Station siting and design treatment should minimize conflicts with cyclists, parked vehicles, commercial loading zones/vehicles, and right-turning traffic.

Figure 2-3 – Typical Center-Running Bus Lanes Configurations

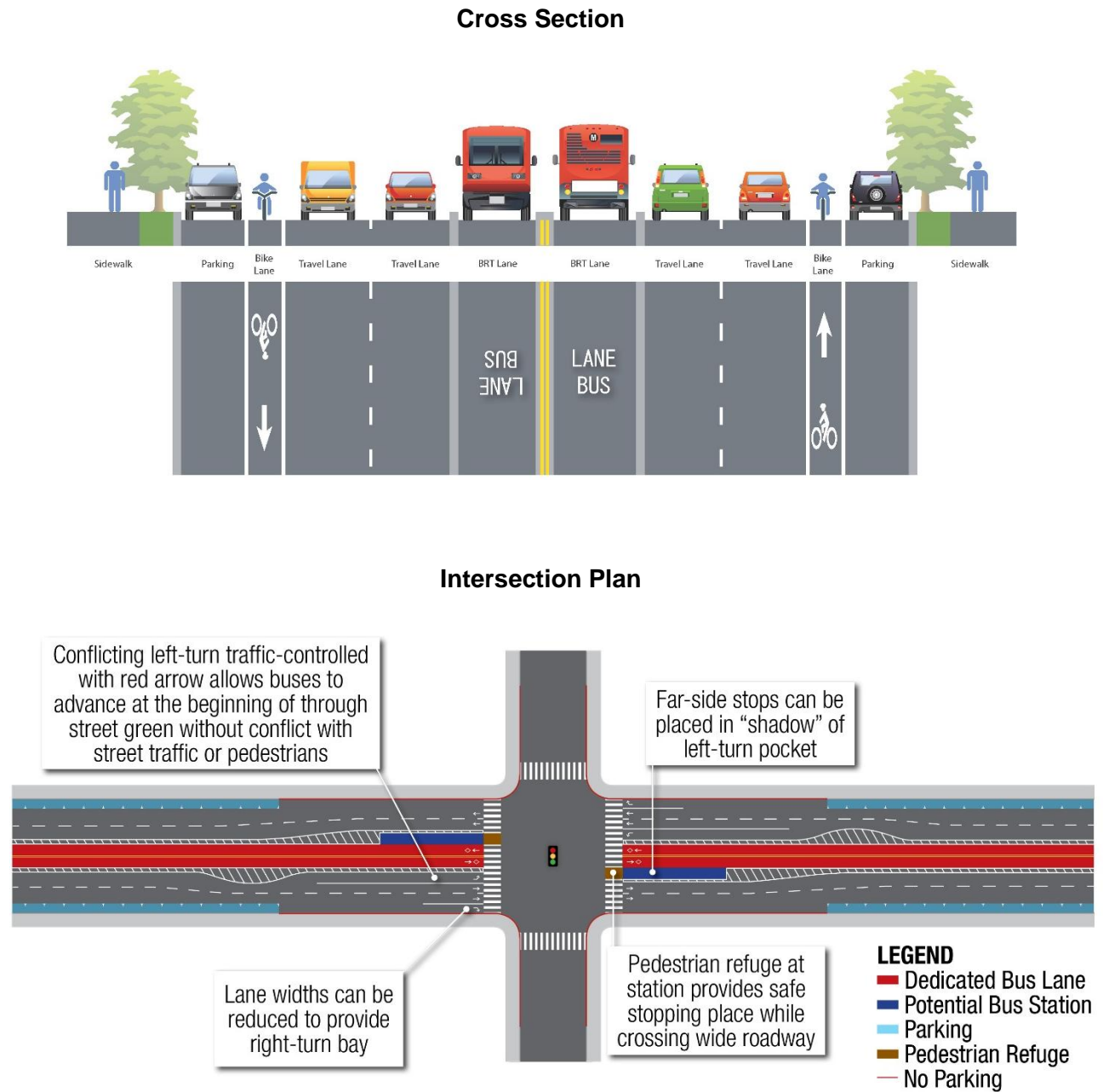


Figure 2-4 – Typical Median-Running Bus Lanes Configurations

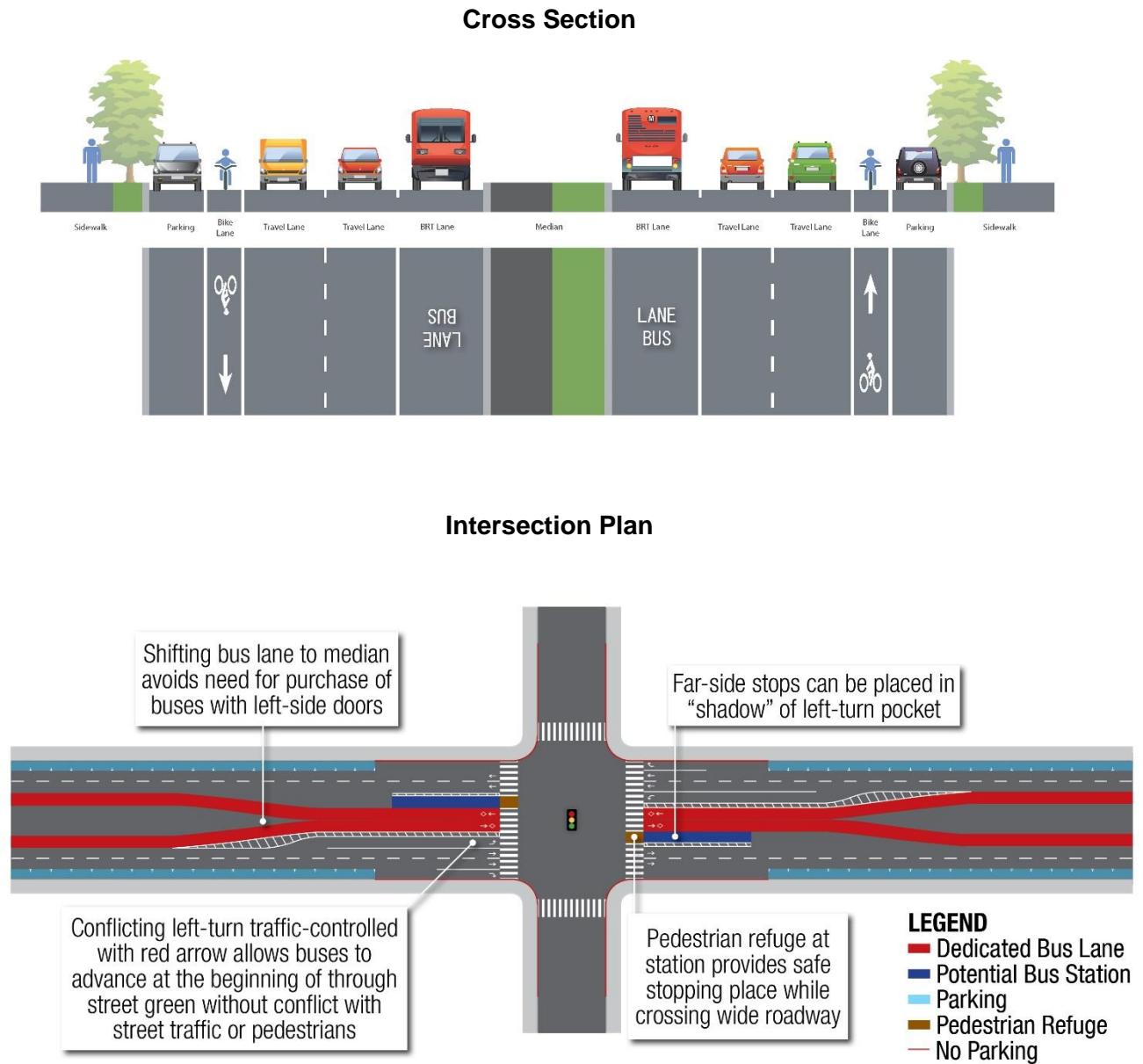
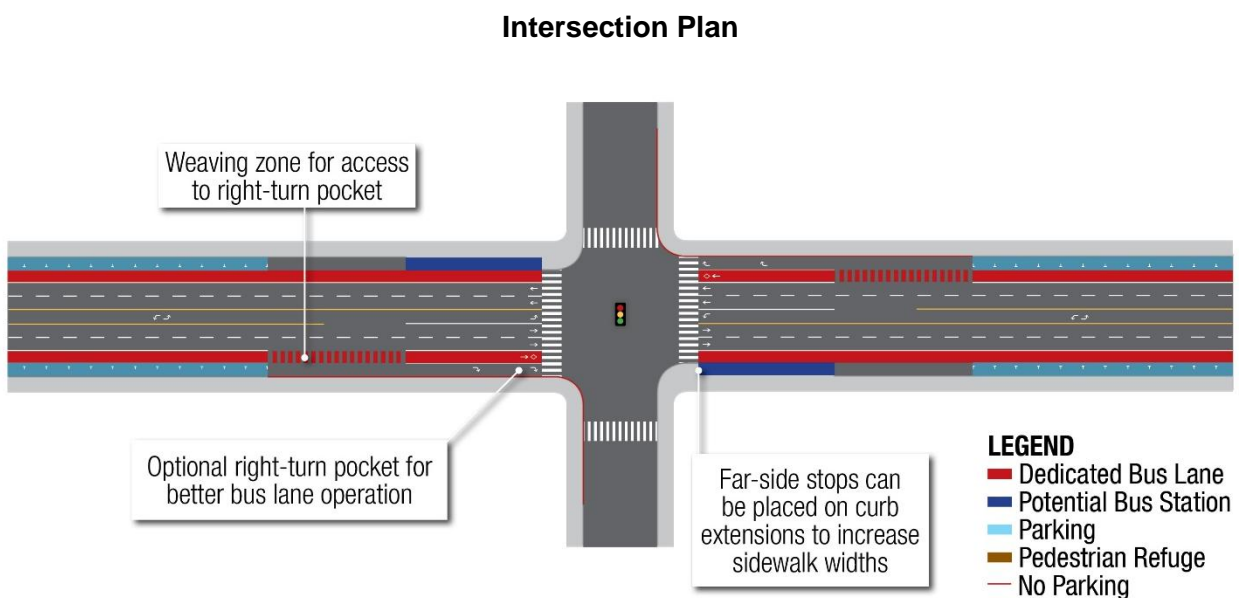
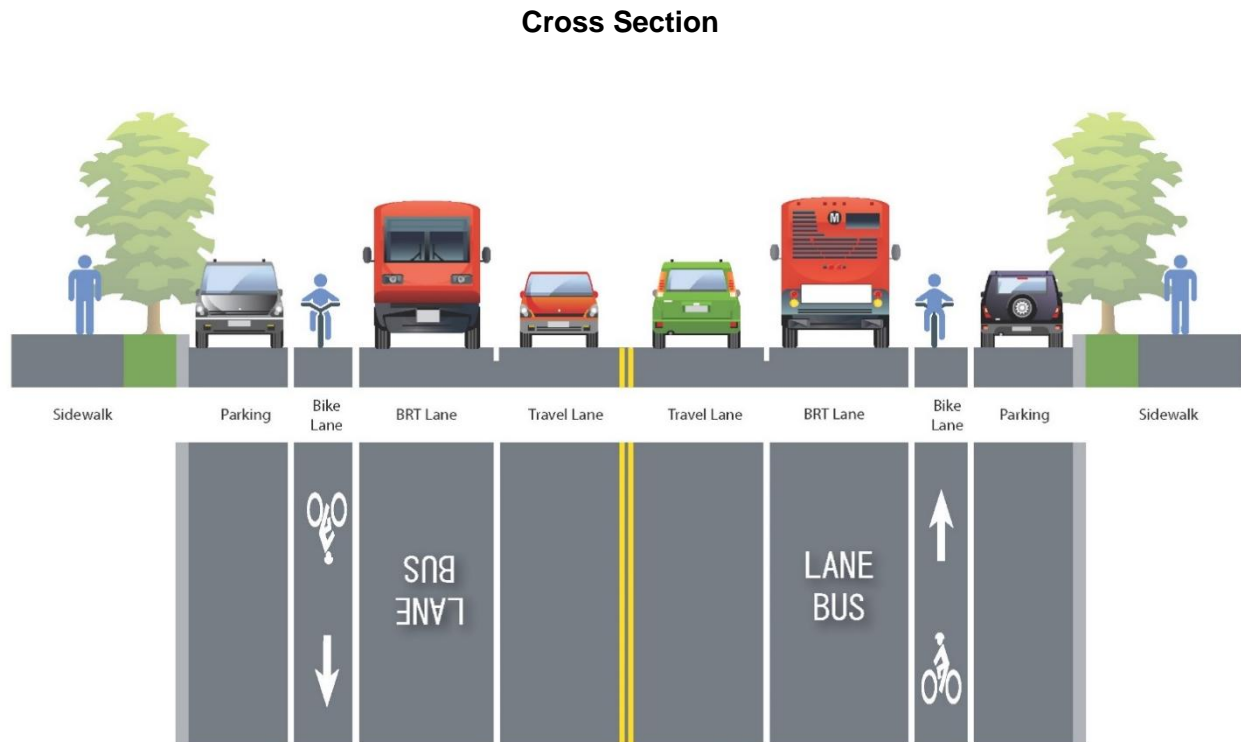


Figure 2-5 – Typical Side-Running Bus Lanes Configurations



2.5.4 Curb-Running

Curb-running bus lanes place the dedicated bus lane immediately adjacent to the curb, as shown in **Figure 2-6**, which eliminates parking or restricts parking to time periods when the bus lane is not operational. Like the side-running bus lanes configuration, a curb extension may be provided; however, operation along the curb may preclude development of a bulb out. This type of runningway can experience friction or interaction with cyclists, parked vehicles, commercial loading zones/vehicles, and right-turning traffic, which typically merges into the bus lane prior to turning.

2.5.5 Mixed-Flow

Mixed-flow operation may be provided along the BRT route where buses need to transition from one busway configuration to another such as from center-running to side-running, where buses may need to weave into another lane to make a turn, or where traffic operational or geometric constraints make provision of a dedicated lane impractical. In mixed-flow sections, transit priority at intersections may still be provided to facilitate BRT operations (see **Figure 2-7**).

2.6 OPERATIONS

The Proposed Project would provide BRT service from 4:00 a.m. to 1:00 a.m. or 21 hours per day Sunday through Thursday, and longer service hours (4:00 a.m. to 3:00 a.m.) would be provided on Fridays and Saturdays (see **Table 2-3**). The proposed service span is consistent with the Metro B Line (Red).

The BRT would operate with 10-minute frequency throughout most of the day on weekdays tapering to 15 to 20 minutes frequency during the evenings, and with 15-minute frequency during most of the day on weekends tapering to 30 minutes in the evenings. **Table 2-4** shows the frequencies.

2.7 VEHICLES

The BRT service would be provided on 40-foot zero-emission electric buses with the capacity to serve up to 75 passengers. A maximum of 16 buses are anticipated to be in service along the route during peak operations. A typical 40-foot bus seats approximately 40 passengers and can carry up to 35 additional standees in the aisle circulation space, although this maximum capacity lowers the passengers' comfort and perception of quality of service and is not recommended for standard operations. If warranted by high ridership, additional buses could be deployed to the high demand segments of the BRT route during peak periods and turned-back at an interim station along the route where the ridership decreases.

Figure 2-6 – Typical Curb-Running Bus Lanes Cross Section

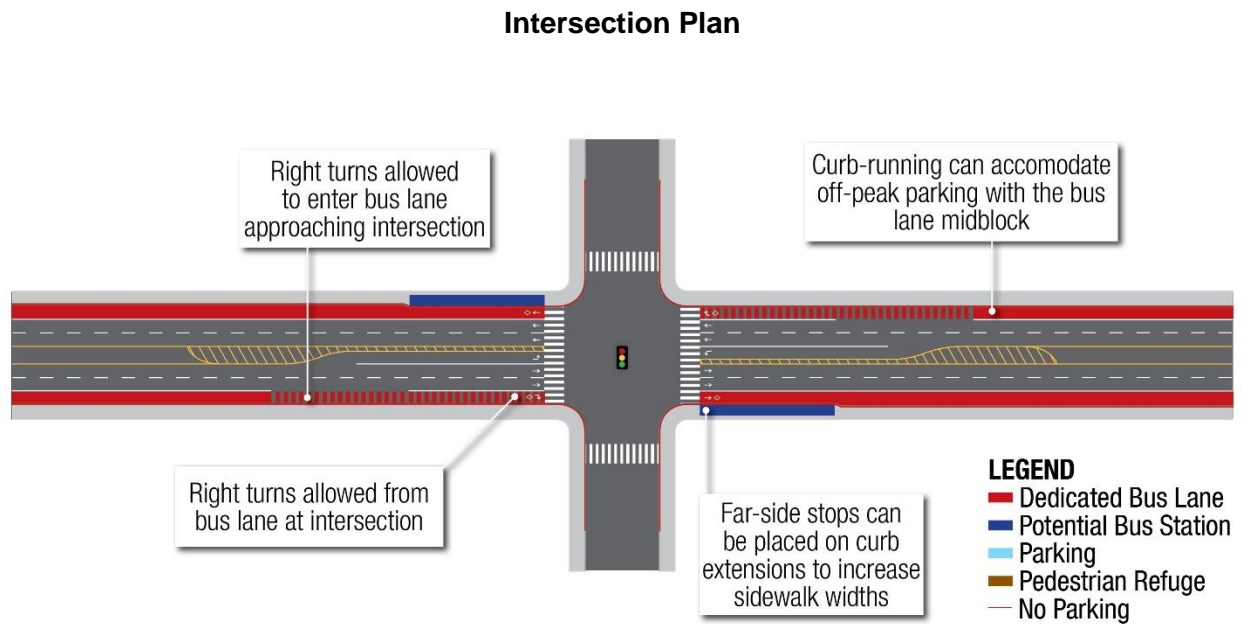
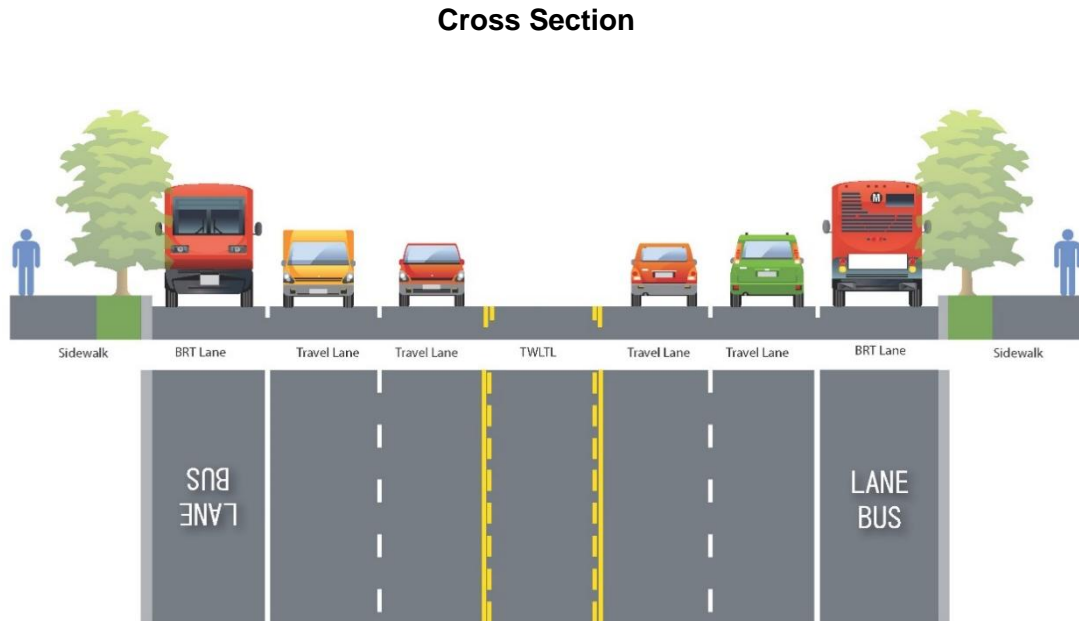
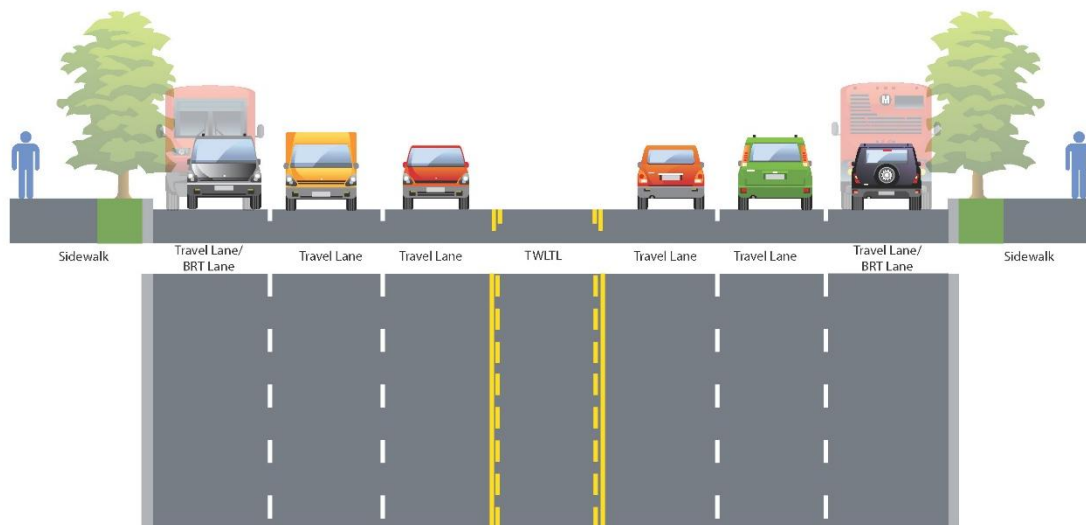


Figure 2-7 – Typical Mixed-Flow Operation Cross Section



The BRT service’s fleet of zero-emission electric buses would charge overnight at the maintenance and storage facility where the buses are parked. In addition, electric charging equipment would be provided at both ends of the BRT route, at the North Hollywood B/G Line (Red/Orange) and PCC, for the opportunity to boost the charge on the buses between runs.

When operations commence in 2024, it is possible that the fleet would operate compressed natural gas (CNG) buses in its service until ZEV buses become available. The employment of CNG buses would be temporary and would not represent long-term operational conditions.

2.8 MAINTENANCE AND STORAGE

Maintenance and storage facilities for Metro buses are located throughout the County. At each is a parking lot for buses, repairs garage, bus wash, assignment desk for bus operators, lockers and lunchroom. The buses for the BRT service would be stored at an existing Metro facility, potentially at the El Monte Division or another Metro division in closer proximity to the Project corridor. Metro has an existing program to transition its entire bus fleet to zero-emission buses by 2030. The transition to zero-emission buses requires infrastructure improvements at Metro’s maintenance and storage facilities, including installing electric equipment for overnight charging. While a small portion of the Proposed Project funds would contribute to these improvements, the infrastructure would support the entire Metro fleet and is independent of the Proposed Project. Implementation of the zero-emission charging infrastructure would be carried out under Metro’s Zero Emission Fleet Program.

Table 2-3 – Proposed BRT Service Span

	Early	AM Peak	Midday	PM Peak	Evening	Late Night	Owl
Monday -Thursday	4:00 a.m. - 6:00 a.m.	6:00 a.m. - - 9:00 a.m.	9:00 a.m. - 3:00 p.m.	3:00 p.m. - 7:00 p.m.	7:00 p.m. - 9:00 p.m.	9:00 p.m. - 12:00 a.m.	12:00 a.m. - 1:00 a.m.
Friday	4:00 a.m. - 6:00 a.m.	6:00 a.m. - 9:00 a.m.	9:00 a.m. - 3:00 p.m.	3:00 p.m. - 7:00 p.m.	7:00 p.m. - 9:00 p.m.	9:00 p.m. - 12:00 a.m.	12:00 a.m. - 3:00 a.m.
Saturday	4:00 a.m. - 6:00 a.m.	6:00 a.m. - 9:00 a.m.	9:00 a.m. - 3:00 p.m.	3:00 p.m. - 7:00 p.m.	7:00 p.m. - 9:00 p.m.	9:00 p.m. - 12:00 a.m.	12:00 a.m. - 3:00 a.m.
Sunday/Holiday	4:00 a.m. - 6:00 a.m.	6:00 a.m. - - 9:00 a.m.	9:00 a.m. - 3:00 p.m.	3:00 p.m. - 7:00 p.m.	7:00 p.m. - 9:00 p.m.	9:00 p.m. - 12:00 a.m.	12:00 a.m. - 1:00 a.m.

Table 2-4 – Proposed BRT Service Frequencies

	Early	AM Peak	Midday	PM Peak	Evening	Late Night	Owl
Monday-Thursday	20 minutes	10 minutes	10 minutes	10 minutes	15 minutes	20 minutes	20 minutes
Friday	20 minutes	10 minutes	10 minutes	10 minutes	15 minutes	20 minutes	20 minutes
Saturday	30 minutes	15 minutes	15 minutes	15 minutes	15 minutes	30 minutes	30 minutes
Sunday/Holiday	30 minutes	15 minutes	15 minutes	15 minutes	15 minutes	30 minutes	30 minutes

2.9 CONSTRUCTION

The Proposed Project would primarily be constructed and operate within existing street ROW although minor acquisitions, easements, or temporary construction easements may be necessary at select intersections or station locations. Construction of the Proposed Project would likely include a combination of the following elements dependent upon the chosen BRT configuration for the segment: restriping, curb-and-gutter/sidewalk reconstruction, ROW preparation, pavement improvements, station/loading platform construction, landscaping, and lighting and traffic signal modifications.

Generally, construction of dedicated bus lanes consists of pavement improvements including restriping, whereas ground-disturbing activities occur with station construction and other support structures. Existing utilities would be protected or relocated. Due to the shallow profile of construction, substantial utility conflicts are not anticipated, and relocation efforts should be brief. Utility companies have not been contacted at this time in the planning process. During Advanced Conceptual Engineering, the Project team would coordinate with utility companies to request information. These companies would be contacted to ensure they are aware of the Proposed Project and provide mark-ups, as-builts or confirmation of owner exhibits. Utility coordination meetings would be set up with each utility company with potentially affected facilities to help determine if relocation would be required or the facility could be protected-in-place. The utility coordination meetings would help to ensure all the utility companies are engaged early during Project development. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities. Utility agreements would be finalized to ensure the designs are prepared by third party utility owners.

Construction equipment anticipated to be used for the Proposed Project consists of asphalt milling machines, asphalt paving machines, large and small excavators/backhoes, loaders, bulldozers, dump trucks, compactors/rollers, and concrete trucks. Additional smaller equipment may also be used such as walk-behind compactors, compact excavators and tractors, and small hydraulic equipment.

The construction duration of the Proposed Project is expected to last approximately 24 to 30 months. Construction activities would shift along the corridor so that overall construction activities should be of relatively short duration within each segment. Construction activities would likely occur during daytime hours. Nighttime activities are not anticipated to be needed to construct the Proposed Project. However, at this stage of the planning process and without a construction contractor, it cannot be confirmed if nighttime construction would be necessary for specialized construction tasks. For these specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions.

Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Work Area Traffic Control Handbook (WATCH). Published under the authority of the WATCH Committee of Public Works Standards, Inc., the Handbook a leading source of information for traffic control in low-speed/short-duration work areas. It provides quick

reference traffic control guidelines for work activities for contractors, cities, counties, utilities and other agencies responsible for such work. Typical roadway construction traffic control methods would be followed including the use of signage and barricades. Temporary traffic signalization adjustments may be necessary when construction occurs at intersections. It is not anticipated that construction activities would routinely require closing roadways. If roadway closures are required, closure periods would be determined to minimize disruptions to traffic flow and impacts to businesses. Coordination with any adjacent construction work would take place to minimize disruption.

The need for construction staging areas or easements would be identified in the engineering phase. It is anticipated that publicly owned ROW or land in proximity to the Proposed Project's alignment would be available for staging areas. Because the Proposed Project is anticipated to be constructed in a linear segment-by-segment method, there would not be a need for large construction staging areas in proximity to the alignment.

2.10 PERMITS AND APPROVALS

This document is intended to environmentally clear future related discretionary actions under CEQA by Metro and other agencies. Discretionary actions include those approvals, entitlements or permits necessary in order to implement a project. Metro will prepare a SWPPP consistent with federal and County requirements for stormwater discharges associated with construction and industrial activities. Coordination and approvals from communications and utility purveyors would be needed for temporary or permanent utility relocation or service interruption. The Proposed Project would require approval and/or permits from departments associated with the Cities of Los Angeles, Burbank, Glendale, and Pasadena (e.g., fire departments and transportation departments). It is anticipated that permits and approvals include, but are not limited to, the following:

- **Metro Board of Directors:** Certification of the EIR, adoption of Findings and Statement of Overriding Considerations, adoption of the Mitigation Monitoring and Reporting Program.
- **City of Los Angeles:** Approval of traffic signal/transit priority system improvements and street restriping plans; recommendation for approval by the City Council; Approval of plans for fire life safety design requirements; and possible noise variance for nighttime construction activities.
- **City of Burbank:** Discretionary actions and permits would be required, including possible noise variance for nighttime construction activities.
- **City of Glendale:** Discretionary actions and permits would be required, including possible noise variance for nighttime construction activities.
- **City of Pasadena:** Discretionary actions and permits would be required, including possible noise variance for nighttime construction activities.

2.11 COST ESTIMATES

2.11.1 Capital Costs

Capital costs for the Proposed Project are presented in Appendix Y and were estimated based on the Concept Plans presented in Appendix Z. The approach for developing the capital cost estimate used the Standard Cost Category format developed by the Federal Transit Administration, which captures both the “hard” infrastructure construction costs of a project and the “soft” costs like professional services, right-of-way acquisition, contingency, and inflation.

An individual estimate was prepared for each route segment (and segment options) to capture and identify the costs associated with each segment, and to assist in the evaluation of the segment options. There are several project costs that are not attributable to an individual segment, therefore an estimate was prepared for “overall” project items, including the bus vehicles and spare parts allowance.

The results of the conceptual capital cost estimates for the Proposed Project and route options indicate a range between \$249 million and \$367 million. The level of detail of the capital cost estimates corresponds with the current level of definition, engineering, and environmental analysis that has been completed for the Proposed Project. The level of estimating detail would increase as the Project design and engineering advances.

2.11.2 Operations and Maintenance Costs

An Operations and Maintenance (O&M) cost model was developed to estimate the annual cost to operate, maintain and administer the Proposed Project. As discussed in Appendix X, O&M costs are expressed as the annual total of employee wages and salaries, fringe benefits, contract services, materials and supplies, utilities and other day-to-day expenses incurred in the operation and maintenance of a transit system. O&M costs include costs directly related to the provision of transit service (e.g., bus operators and mechanics), and an allocation of administrative functions to each mode of service that is related to the provision of transit service (e.g., customer service, finance and accounting).

The BRT O&M cost model uses the following service supply characteristics as inputs for estimating annual O&M costs:

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses
- BRT Station Platforms
- BRT Directional Lane Miles
- BRT Maintenance Facilities (Garages)

The estimated annual cost of operating and maintaining the Proposed Project’s BRT service ranges from \$16.6 million to \$18.5 million.

2.12 IMPLEMENTATION SCHEDULE

The Draft EIR will be available for public review and comment period from October 26, 2020 to December 10, 2020. After the completion of the public review period, Metro will prepare responses to comments received during the process. In Winter/Spring 2021, the Metro Board will select the Locally Preferred Alternative (LPA) for the Proposed Project. The CEQA process will be completed in Spring/Summer 2021 through the preparation and certification of the Final EIR.

Environmental Process



The overall project schedule anticipates design and constructing commencing in late 2021 with initiation of revenue service in 2024.

Project Schedule

