ES. Executive Summary

This Executive Summary is intended to provide the reader with a concise summary of the Los Angeles County Metropolitan Transportation Authority (Metro) North Hollywood to Pasadena Bus Rapid Transit (BRT) Corridor Project (Proposed Project or Project) and its potential environmental effects. The Proposed Project would provide a BRT service connecting several cities and communities 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. The Proposed Project would operate along a combination of local roadways and freeway sections with various configurations of mixed-flow and dedicated bus lanes depending on location. **Figure ES-1** shows the regional context of the Project corridor.

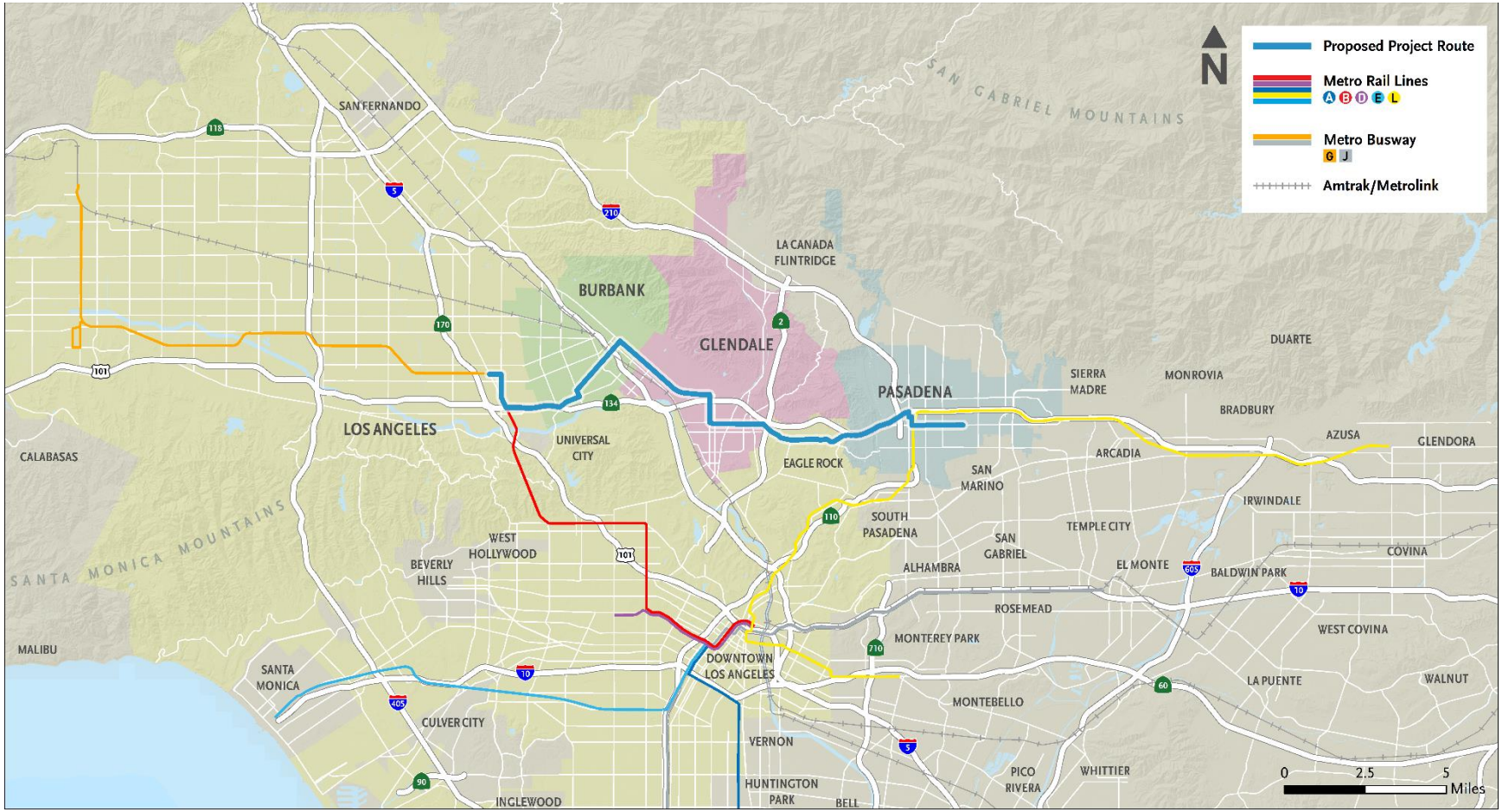
Key revisions to the Proposed Project since circulation of the Draft Environmental Impact Report (EIR) are summarized below. Additional details are provided below and in Chapter 2, Project Description.

- The Metro Board of Directors selected Route Options A1 to B to C to D to E1 to F1 to G1 to H1 as the Proposed Project.
- The Proposed Project no longer includes shared bus and bicycle lanes in Eagle Rock.
- The Final EIR assesses configuration options in Eagle Rock that implement dedicated bus lanes while also preserving bicycle lanes, medians, and parking, including a travel lane reduction option.
- A station is proposed at Alameda Avenue and Naomi Street in Burbank in place of the two stations that were formerly proposed at Olive Avenue and Alameda Street along with Olive Avenue and Buena Vista Street.
- Curb-running bus lanes are no longer proposed along Olive Avenue between Buena Vista Street and Lake Street in Burbank. The Final EIR instead assesses a side-running bus lanes configuration for this stretch, including a travel lane reduction while preserving parking and retaining existing sidewalk widths.
- The proposed station on Olive Avenue and Lake Street in Burbank is no longer located on the Olive Avenue bridge.

ES.1 PURPOSE OF THIS FINAL ENVIRONMENTAL IMPACT REPORT

Metro has prepared this Final EIR to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.). This Final EIR is intended to assist Metro in making decisions regarding the adoption of the Proposed Project.

Figure ES-1 – Regional Context of the Study Corridor



SOURCE: Terry A. Hayes Associates Inc., 2021.

It is required by Section 15132 of the CEQA Guidelines to include the Draft EIR or a revision of the draft; comments and recommendations received on the Draft EIR (either verbatim or in summary); a list of persons, organizations, and public agencies who commented on the Draft EIR; responses to significant environmental comments raised in the review and consultation process; and any other relevant information added by the lead agency.

Metro serves as the lead agency for the Proposed Project and has the principal responsibility for approving the Project. Lead agencies are charged with the duty to avoid or substantially lessen significant environmental impacts of a project, where feasible. In determining whether to approve a project that would result in significant adverse environmental effects, a lead agency has an obligation to balance the economic, social, technological, legal, and other benefits of a project against its significant unavoidable impacts on the environment.

ES.2 ENVIRONMENTAL REVIEW PROCESS

In May 2019, an Alternatives Analysis Report, including its findings and recommendations, was presented to the Metro Board of Directors. The Metro Board directed staff to initiate a Draft EIR. In compliance with the CEQA Guidelines Section 15082, a Notice of Preparation (NOP) was prepared and distributed on June 14, 2019, to the State Clearinghouse and June 17, 2019, to various other public agencies and the general public for a 45-day review and comment period. During the initial 45-day review period, Metro extended the scoping period for an additional 15 days – officially ending the scoping period on August 15, 2019. Five scoping meetings were held in July 2019 to facilitate public review and comment on the Proposed Project and the Draft EIR. Metro received a total of 2,584 comments during the public scoping period. Generally, comments received were a mix of both supportive and opposed sentiments toward the Proposed Project.

Following the public scoping review period and NOP release, Metro began developing the Draft EIR. Upon release of the Notice of Availability (NOA) on October 26, 2020, a 46-day review period was initiated for public review and comment on the Draft EIR findings. The NOA provided notice for responsible agencies to transmit their comments on the findings and content of the Draft EIR, focusing on specific information related to their own statutory responsibility. During the initial 46-day review period, Metro extended the public review period for an additional 18 days – officially ending the scoping period on December 28, 2020. The decision to extend the public review period was based on community interest in the Proposed Project and the current Los Angeles County COVID-19 Safer at Home orders to allow sufficient opportunities for the public to review and comment on the Draft EIR. Additionally, due to the holiday schedule, the public review period was extended beyond 60 days to allow for comments to be received after the holidays and without interruption.

Per CEQA, a public review period is required when issuing the availability and completion of a Draft EIR. Metro conducted two virtual public hearings and one virtual platform where the public was able to provide comments regarding the content and findings of the overall project plans. A virtual platform allows the public access to materials and project information similarly to an in-person setting. Additionally, a copy of the NOA was filed with the Los Angeles County Clerk and State Clearinghouse. Legal advertisement notices were published in 11 newspapers of general circulation in the Project area, and 15,000 flyers were delivered door-to-door to residents and businesses within the Eagle Rock community.

The virtual public hearings to take testimony on the Draft EIR was conducted on November 12, and 14, 2020. A total of 242 stakeholders attended the public hearings and over 800 stakeholders visited the online virtual platform. Metro received approximately 445 comments during the Draft EIR public review period.

Upon the completion of the Final EIR and other required documentation, the Metro Board of Directors certify the Final EIR and the findings relative to the Proposed Project's environmental effects after implementation of mitigation measures and approve the Proposed Project. The public can comment on the contents of the Final EIR when the Metro Board considers the Proposed Project at the Board Meeting on March 24, 2022.

ES.3 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

ES.4 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, station opportunities and constraints, and surrounding 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. 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 the Pasadena City College 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 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), Magnolia Boulevard (North Hollywood – Burbank), Brand Boulevard (Glendale), Burbank Boulevard – Hollywood Way – Hollywood Burbank Airport – Interstate 5, and Fair Oaks Avenue/Raymond Avenue Couplet (Pasadena).

Following the release of the Draft EIR, two virtual public hearings were conducted in November 2020. In addition, Metro received a total of 349 public comment letters (including emails and transcribed voicemails) on the Draft EIR during the public comment period, for a total of approximately 445 comments including public hearings. Upon evaluating the comments received during the Draft EIR public review period, Metro made refinements to the Proposed Project, particularly in the Eagle Rock community along Colorado Boulevard and in the Burbank community. The refinements to the Proposed Project are described in Chapter 2, Project Description, of the Final EIR. Metro updated the community on the refinements to the Proposed Project through a series of briefings and presentations with elected officials, City staff, key stakeholder roundtable meetings, business roundtable meetings and a community meeting.

Throughout this public engagement effort, the Metro team gathered feedback about the technical aspects of the Proposed Project and refinements to the alignment along Colorado Boulevard in Eagle Rock and Olive Avenue in Burbank. These communities have been engaged with Metro since the Proposed Project was initiated and presented to the public. This process included an opportunity for key groups and businesses in the Eagle Rock community to provide direct feedback to the project team on the Proposed Project and the Project refinements, and an opportunity for the communities in the corridor to provide feedback on that same information. These opportunities for feedback were designed to be transparent and inclusive, and allowed community members extended meeting times for the Project team to respond to the many questions and comments received. Due to the COVID-19 pandemic and Los Angeles County Safer at Home Orders, all meetings were held virtually to allow the public to attend from the safety of their homes. The community meetings were also recorded and made available on the Proposed Project website along with the meeting presentation materials.

Metro attended one-on-one meetings with individual agencies to provide an overview of the project, schedule, next steps and to solicit feedback on the project. Metro staff conducted outreach to key stakeholder groups within the Eagle Rock community to provide an update on the refinements to the Proposed Project prior to presenting to public. The stakeholder meetings included elected officials, neighborhood councils, community-based organizations, businesses and business groups, and school organizations.

The key stakeholder roundtable meetings were conducted virtually with key stakeholders in Eagle Rock on Tuesday, March 16, 2021, with two sessions provided at different times to allow for opportunities that fit their schedules. At the roundtable meetings, Metro provided an overview of the project, an update on the refinements of the project in Eagle Rock, the timeline, next steps and an opportunity for dialogue in breakout rooms with project staff. Each of the breakout rooms allowed meeting attendees to ask questions and provide feedback about the project and refinements. Key stakeholders were notified by email leading up to the roundtable meetings with a total of three email notices (e-blasts) in English and Spanish.

A business roundtable meeting was conducted virtually with businesses along Colorado Boulevard in Eagle Rock on Friday, March 26, 2021. At the roundtable meeting, Metro provided an overview of the project, an update on the refinements of the project in Eagle Rock, the timeline, next steps and an opportunity for dialogue with project staff. The meeting format allowed meeting attendees to ask questions and provide feedback about the project and refinements. Businesses were notified prior to the roundtable meeting with a total of five email notices (e-blasts). Additionally, flyers were distributed door-to-door to businesses along Colorado Boulevard leading up to the roundtable meeting notifying businesses of the meeting.

A virtual community meeting was held on April 1, 2021, to update the corridor communities on the refined alignments in Eagle Rock and Burbank and to solicit feedback from the public. Following the approval of the Proposed Project by the Board of Directors on May 27, 2021, an additional series of virtual community meetings were held on September 23, 2021, for the Eagle Rock community and October 7, 2021, for the Burbank community to gather feedback and answer questions about the proposed refinements in their respective communities. Each meeting consisted of a presentation of the refinements by Metro followed by a question and answer session. In addition to simultaneous Spanish interpretation, a copy of the PowerPoint presentation was made available in Spanish on the project website.

Transit rider intercept surveys were conducted in Burbank and Eagle Rock between October 1 and October 13, 2021, to inform transit users and capture feedback about the project. Surveys were conducted at key bus stops with high ridership along Colorado Boulevard in Eagle Rock, Olive Avenue in Burbank, and the Metro B/G Line (Red/Orange) Station in North Hollywood. Interviewees had the opportunity to provide either written responses or video comments.

Mobile phone surveys were also sent to transit riders within the project study area via Metro's Transit Application between September 27 and October 10, 2021. The goal of the surveys was to better understand the characteristics of transit riders and which elements of the Proposed Project they found most important. Two separate surveys were made available for targeted geographic audiences – one for Eagle Rock and one for Burbank – and were available in both English and Spanish.

Additionally, Metro staff conducted door-to-door outreach to businesses on Colorado Boulevard in Eagle Rock and Olive Avenue in Burbank between November 5 and December 4, 2021. The purpose was to further inform business owners and employees about the project and capture feedback on the design options being studied in both communities. Staff also distributed flyers providing background information, the design options being studied, and contact information.

After consideration of public comments and further public engagement following the circulation of the Draft EIR, a number of refinements were made to the Proposed Project. Among these refinements are two configuration options for the Colorado Boulevard segment in Eagle Rock. One configuration maintains existing general purpose travel lanes and the other configuration eliminates a general purpose travel lane in order to implement a dedicated bus lane while also preserving bicycle lanes, medians, and parking. As shown in Chapter 3, Corrections and Additions, of this Final EIR, the refinements to the Proposed Project and the configuration options would not alter the conclusions of the Draft EIR regarding the potentially significant impacts of the Proposed Project or result in any new significant environmental impact.

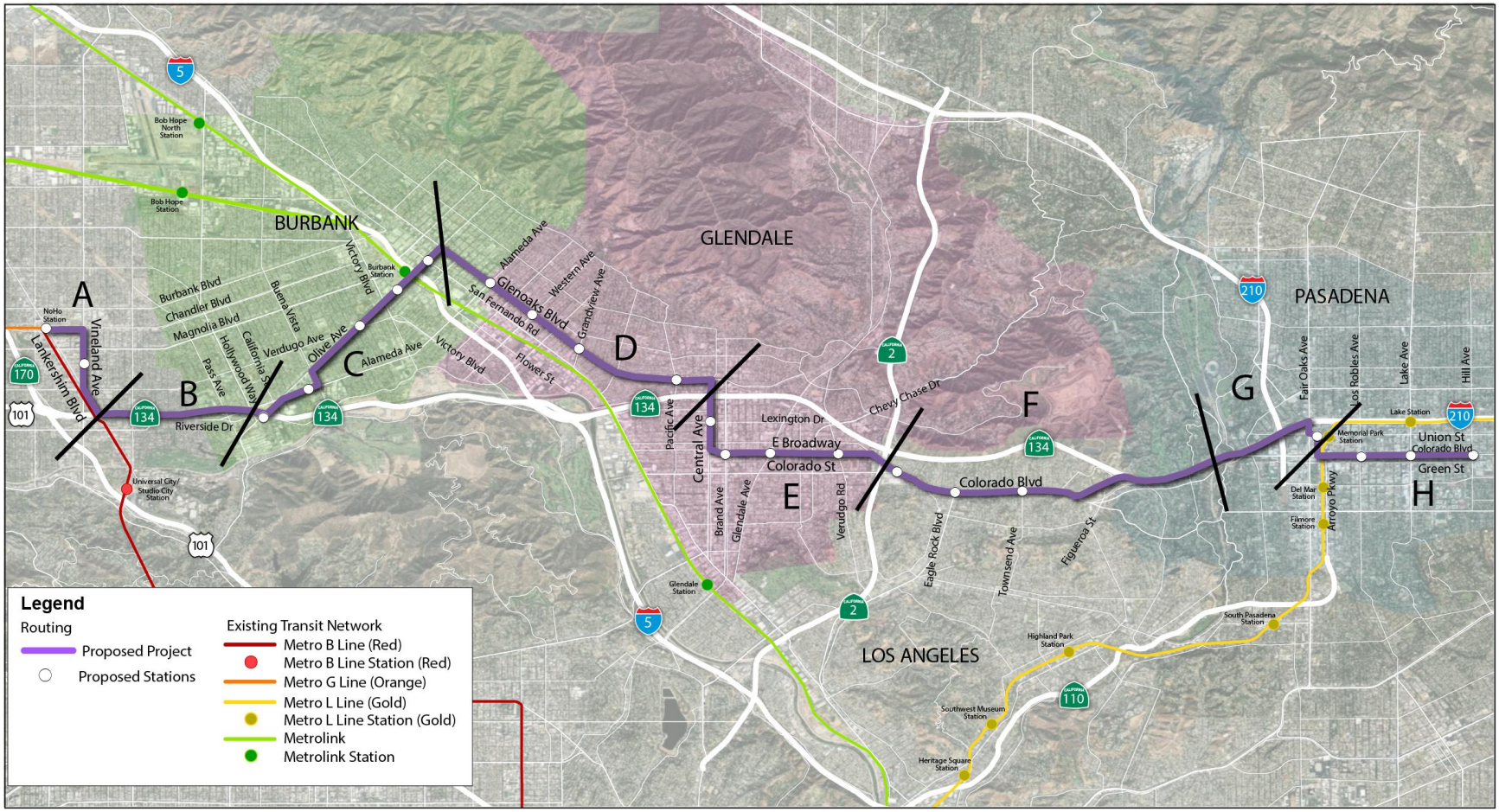
ES.5 PROPOSED PROJECT

The Proposed Project extends approximately 19 miles from the North Hollywood Metro B/G Line (Red/Orange) Station on the west to Pasadena City College on the east. The BRT corridor generally parallels the Ventura Freeway (State Route [SR] 134) between the San Fernando and San Gabriel Valleys and traverses the communities of North Hollywood and Eagle Rock in the City of Los Angeles as well as the Cities of Burbank, Glendale, and Pasadena. Potential connections with existing high-capacity transit services include the Metro B Line (Red) and G Line (Orange) in North Hollywood, the Metrolink Antelope Valley and Ventura Lines in Burbank, and the Metro L Line (Gold) in Pasadena. The Project Area includes several dense residential areas as well as many cultural, entertainment, shopping and employment centers, including the North Hollywood Arts District, Burbank Media District, Downtown Burbank, Downtown Glendale, Eagle Rock, Old Pasadena and Pasadena City College.

The Proposed Project would generally include dedicated bus lanes where there is adequate existing street width while operating in mixed traffic within the City of Pasadena. BRT service would operate in various configurations depending upon the characteristics of the roadways. The Proposed Project that was presented in the Draft EIR included route options at various locations. Based on comments on the Draft EIR received from the public and stakeholders, as well as additional technical analysis, the various route options were eliminated from further consideration by the Metro Board of Directors on May 27, 2021. The Metro Board of Directors selected Route Options A1 to B to C to D to E1 to F1 to G1 to H1 as the Proposed Project. In addition, the Proposed Project does include configuration options for the Colorado Boulevard segment in Eagle Rock, as presented subsequently in this section.

Figure ES-2 shows the Proposed Project. **Table ES-1** provides the bus lane configurations for each route segment of the Proposed Project.

Figure ES-2 – Proposed Project



SOURCE: Kimley-Horn and Associates Inc., 2022.

Table ES-1 – Route Segments

Key	Segment	From	To	BRT Lane Configuration	Stations
A	Lankershim Blvd.	N. Chandler Blvd.	Chandler Blvd.	Mixed-Flow	• Western Terminus at North Hollywood Metro Station with connection to Metro B Line (Red) 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	• Hesby St.
	Lankershim Blvd.	Vineland Ave.	SR-134 Interchange	Center-Running Mixed-Flow[3]	
B	SR-134 Freeway	Lankershim Blvd.	Pass Ave. (EB) Hollywood Wy. (WB)	Mixed-Flow	
C	Pass Ave. – Riverside Dr. (EB) Hollywood Wy. – Alameda Ave. (WB)	SR-134 Freeway	Olive Ave.	Mixed-Flow[4]	• Riverside Dr.
	Olive Ave.	Riverside Dr.	Alameda Ave.	Curb-Running	
	Alameda Ave.	Olive Ave.	Buena Vista St.	Mixed-Flow/Curb Running[5]	• Naomi St.
	Buena Vista St.	Alameda Ave.	Olive Ave.	Mixed-Flow/Curb-Running[6]	
	Olive Ave.	Buena Vista St.	First St.	Side-Running[7] Mixed-Flow[7]	• Verdugo Ave. • Lake St.
	Olive Ave.	First St.	Glenoaks Blvd.	Curb-Running	• San Fernando Blvd.
D	Glenoaks Blvd.	Olive Ave.	Providencia Ave.	Mixed-Flow	
	Glenoaks Blvd.	Providencia Ave.	Central Ave.	Median-Running	• Alameda Ave. • Western Ave. • Grandview Ave. • Pacific Ave.
E	Central Ave.	Glenoaks Blvd.	Broadway	Mixed-Flow Side-Running[8]	• Lexington Dr.
	Broadway	Central Ave.	Colorado Blvd.	Side-Running	• Brand Blvd. • Glendale Ave. • Verdugo Rd.

Key	Segment	From	To	BRT Lane Configuration	Stations
F	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	Side-Running Center-/Median-Running[9, 10]	• Eagle Rock Plaza (at Broadway) • Eagle Rock Blvd. (at Caspar Ave.) • Townsend Ave.
G	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.	Mixed-Flow	• Holly St. - Metro L Line (Gold)
H	Colorado Blvd.	Raymond Ave.	Hill Ave.	Mixed-Flow	• Los Robles Ave. • Lake Ave. • Eastern Terminus on Hill Ave. south of Colorado Blvd. (near (Pasadena City College)

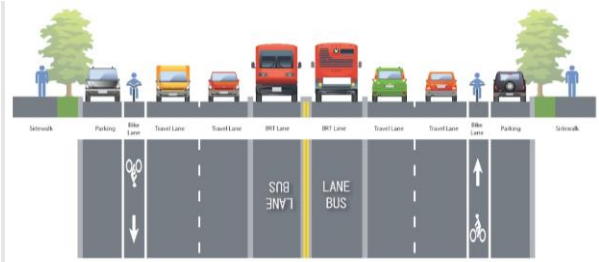
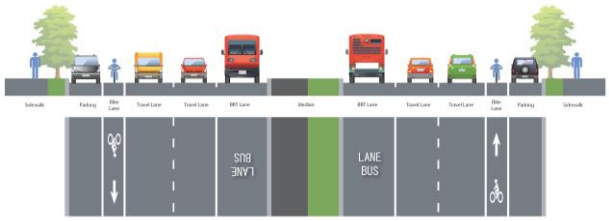
NOTES:

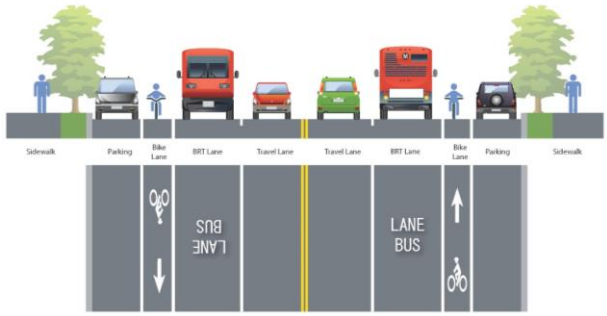
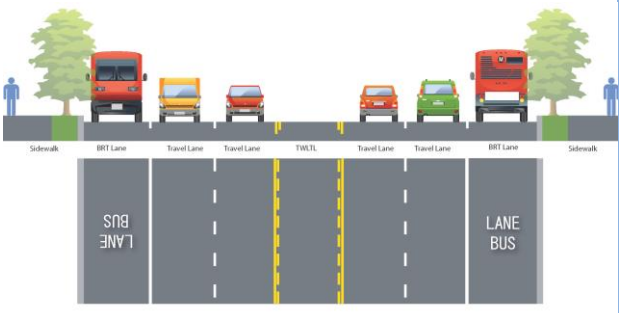
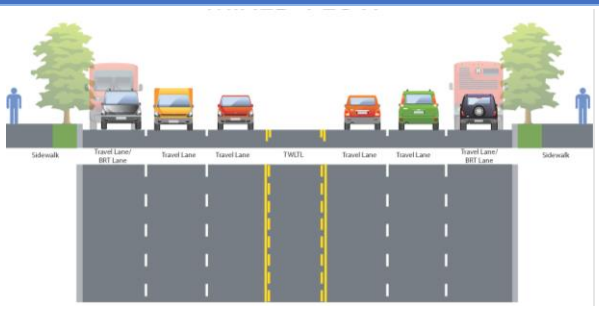
1. Eastbound side-running BRT lane between Fair Ave. and Vineland Ave.
2. Westbound mixed-flow BRT operations between Vineland Ave. and Lankershim Blvd.
3. Southbound mixed-flow BRT operations south of Kling St. and northbound mixed-flow BRT operations south of Hortense St.
4. The eastbound BRT on Riverside Dr. transitions from mixed-flow to a curb-running BRT lane to the east of Kenwood Ave.
5. Limited curb-running bus lanes could be implemented around stations.
6. Curb-running bus lanes would replace on-street parking approaching Olive Ave. in the northbound direction and approaching Alameda Avenue in the southbound direction.
7. Transitions to mixed-flow bus lanes between Lake St. and 1st St.
8. Transitions from mixed-flow operations to side-running BRT to the south of Sanchez Dr.
9. Side-running BRT lanes transition to center-running BRT lanes between Ellenwood Dr. and El Rio Ave.
10. Design options for the segment of Colorado Blvd. between Eagle Rock Blvd. and the SR-134 ramps at Linda Rosa Ave. include (1) two through travel lanes per direction (consistent with existing condition), or (2) one through travel lane per direction.

ES.6 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, including the design options in Eagle Rock, are shown in **Table ES-2**.

Table ES-2 – Lane Configuration and Treatments

Center-Running	Median-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. 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 bus lane.	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 side doors). 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 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.
	

Side-Running	Curb-Running
Side-running bus lanes dedicate the right-most travel lane to BRT vehicles. 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.	Curb-running bus lanes place the dedicated bus lane immediately adjacent to the curb, 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.
	
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.	

Illustrations have been developed to visually show how the Proposed Project would be incorporated into the communities. These illustrations are shown in **Figure ES-3** through **Figure ES-13**.

Figure ES-3 – North Hollywood – Vineland Avenue and Lankershim Boulevard Pre-Project

SOURCE: Kilograph and Google Maps, 2020

Figure ES-4 – North Hollywood – Vineland Avenue and Lankershim Boulevard Post-Project

SOURCE: Kilograph and Google Maps, 2020

Figure ES-5 – Burbank – Olive Avenue Pre-Project

SOURCE: Kilograph and Google Maps, 2021

Figure ES-6 – Burbank – Olive Avenue Post-Project

SOURCE: Kilograph and Google Maps, 2021

Figure ES-7 – Glendale – Glenoaks Boulevard Pre-Project

SOURCE: Kilograph and Google Maps, 2020

Figure ES-8 – Glendale – Glenoaks Boulevard Post-Project

SOURCE: Kilograph and Google Maps, 2020

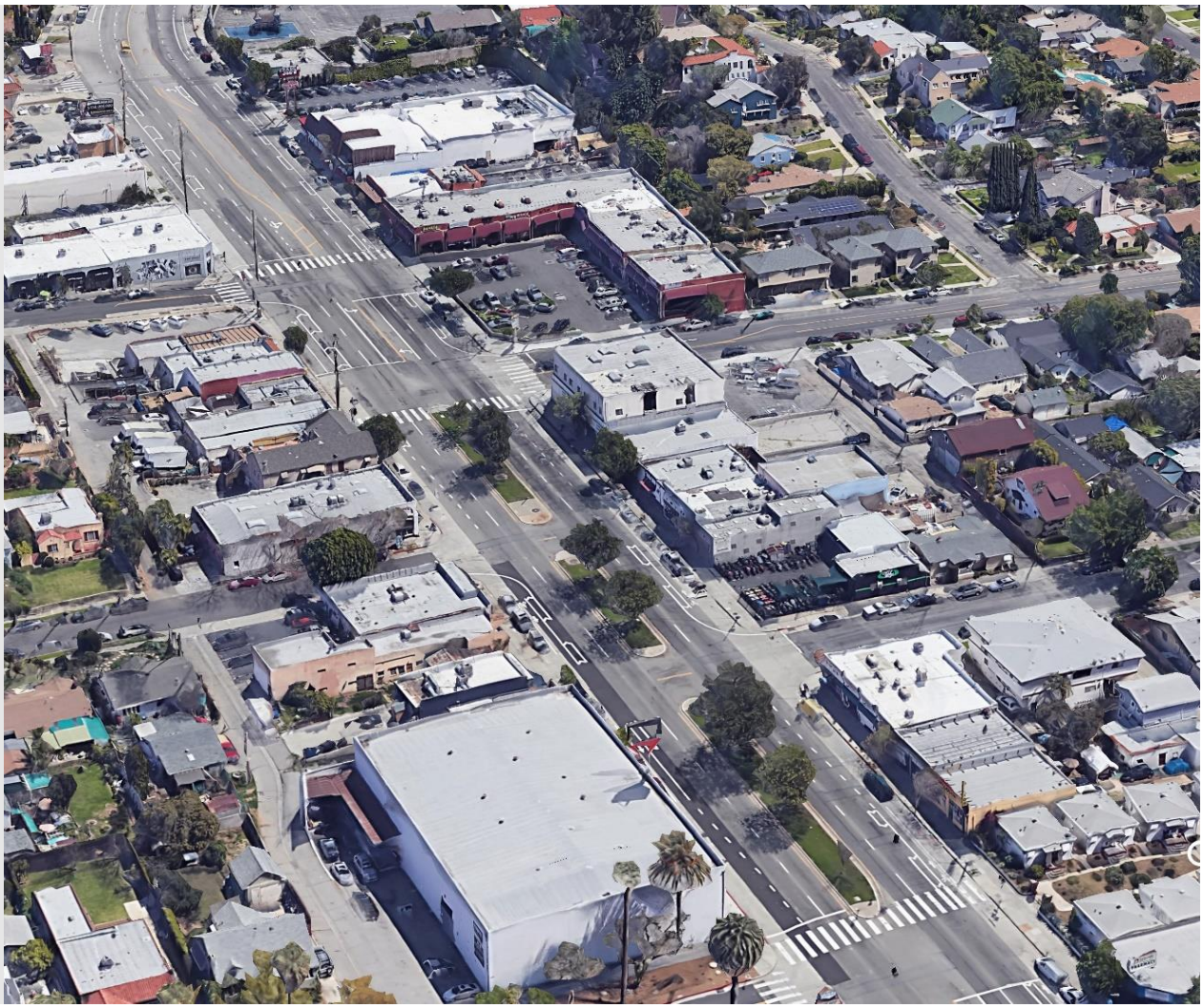
Figure ES-9 – Glendale – Broadway and Colorado Street Pre-Project

SOURCE: Kilograph and Google Maps, 2020

Figure ES-10 – Glendale – Broadway and Colorado Street Post-Project

SOURCE: Kilograph and Google Maps, 2020

Figure ES-11 – Eagle Rock – Colorado Boulevard Pre-Project



SOURCE: Kilograph and Google Maps, 2020

Figure ES-12 – Eagle Rock – Colorado Boulevard Post-Project (Design Option with Two Travel Lanes per Direction)

SOURCE: Kilograph and Google Maps, 2021

Figure ES-13 – Eagle Rock – Colorado Boulevard Post-Project (Design Option with One Travel Lane per Direction)

SOURCE: Kilograph, 2021

ES.7 TRANSIT SIGNAL PRIORITY

Transit Signal Priority (TSP) expedites buses through signalized intersections and improves transit travel times. Transit priority is available areawide within the City of Los Angeles and on Colorado Boulevard in the City of Pasadena. It is expected to be available in all jurisdictions served by the time the Proposed Project is in service. Basic functions are described below:

- **Early Green**: When a bus is approaching a red signal, conflicting phases may be terminated early to obtain the green indication for the bus.
- **Extended Green**: When a bus is approaching the end of a green signal cycle, the green may be extended to allow bus passage before the green phase terminates.
- **Transit Phase**: A dedicated bus-only phase is activated before or after the green for parallel traffic to allow the bus to proceed through the intersection. For example, a queue jump may be implemented in which the bus departs from a dedicated bus lane or a station ahead of other traffic, so the bus can weave across lanes or make a turn.

ES.8 ENHANCED STATIONS

The Proposed Project includes 22 stations, as indicated in **Table ES-3**. 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 with 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 station elements as described below would be utilized to establish a minimum requirement of baseline amenities for station platforms. Station siting would provide safe and accessible paths of travel for transit riders including those accessing stations on foot, bike and other rolling modes.

It is anticipated that the stations servicing the Proposed Project may include the following elements:

- Canopy and wind screen
- Seating (benches)
- Illumination, security video and/or emergency call button
- Real-time bus arrival information
- Bike racks
- Monument sign and map displays

It is anticipated that BRT buses would support all door boarding with on-board validators in lieu of deployment of ticket vending machines at stations. The Proposed Project would be integrated with Metro's TAP card system, which improves the multimodal transit experience by allowing a singular payment option for bus and rail trips as well as other transit programs throughout Los Angeles County. Nearly all transit agencies in Los Angeles County accept use of a TAP card for payment. There is also a mobile application for TAP allowing payment from cellular phones.

Table ES-3 – Station/Platform Locations

Location	Segment	Description
NORTH HOLLYWOOD (CITY OF LOS ANGELES)		
North Hollywood Metro B/G Line (Red/Orange) Station	A (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.	A	Median station with islands outboard of bus lanes (for right side loading) south of Hesby St. (eastbound far-side / westbound near-side) with new traffic signal and crosswalk for access.
CITY OF BURBANK		
Olive Ave. at Riverside Drive and Hollywood Way	C	Sidewalk station with eastbound loading zone on curb extension on Riverside Dr. far-side from Hollywood Way; westbound loading zone on Olive Ave. far-side from Riverside Dr. and would be integrated with existing plaza.
Alameda Ave. at Naomi St.	C	Sidewalk station with near-side eastbound and westbound loading zones.
Olive Ave. at Verdugo Ave.	C	Sidewalk station with near-side eastbound loading zone and far-side westbound loading zone. Curb extensions would be constructed for the loading zone.
Olive Ave. at Lake St. (near Metrolink Station)	C	Near-side sidewalk stations with loading zones along curb extensions.
Olive Ave. at San Fernando Blvd.	C	Sidewalk station with 120 to 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.
CITY OF GLENDALE		
Glenoaks Blvd. at Alameda Ave.	D	Median station with far-side loading islands outboard of bus lanes (for right 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	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
Glenoaks Blvd. at Grandview Ave.	D	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
Glenoaks Blvd. at Pacific Ave.	D	Median far-side station with same configuration as Glenoaks Blvd. at Alameda Ave.
Central Ave. at Lexington Dr.	E	Sidewalk station with far-side loading zones along curb extensions; includes bicycle pathway behind station.

Location	Segment	Description
Broadway at Brand Blvd.	E	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.	E	Sidewalk station with far-side loading zones. Stations would be integrated with sidewalk.
Broadway at Verdugo Rd.	E	Sidewalk station with far-side loading zones. Stations would utilize existing wide sidewalks.
EAGLE ROCK DISTRICT (CITY OF LOS ANGELES)		
Colorado Blvd. at Eagle Rock Plaza	F	Sidewalk station with loading zones along curb extensions; includes bicycle pathway behind station. The stations are located on the east leg of the Broadway/Colorado Blvd. intersection with far-side eastbound and near-side westbound loading zones.
Colorado Blvd. at Eagle Rock Blvd.	F	The stations would be located on the east leg of the Caspar Ave./Colorado Blvd. intersection with far-side eastbound and near-side westbound loading zones. The stations would be located on raised islands outboard from the bus lanes, accessible from signalized crosswalks.
Colorado Blvd. at Townsend Ave.	F	The stations would be located on the west leg of the Townsend Ave./Colorado Blvd. intersection with near-side eastbound and far-side westbound loading zones. The stations would be located on raised islands outboard from the bus lanes, accessible from signalized crosswalks.
CITY OF PASADENA		
Raymond Ave. at Holly St.	G	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.
Colorado Blvd. at Los Robles Ave.	H	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.	H	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.
Hill Ave. south of Colorado Blvd.	H	The station would be located on Hill Ave. south of Colorado Blvd.; buses would be routed to Green St. approaching the terminus such that buses would likely utilize a combined station and layover zone located along the east curb of Hill Ave. south of Colorado Blvd., although it is possible that drop-off would be on Colorado Blvd. depending on the final design. If electric bus charging infrastructure is provided, vertical elements, potentially including a mast and electric bus charging boom, would be integrated with the station and a charging sub-station may displace a few parking stalls within the adjacent Pasadena City College surface parking lot. This would require coordination with Pasadena City College and possibly a property easement or acquisition.

ES.9 DESCRIPTION OF CONSTRUCTION

Construction of the Proposed Project would likely include a combination of the following elements dependent upon the chosen BRT configuration for the segment: restriping and signage, curb-and-gutter/sidewalk reconstruction, right-of-way (ROW) preparation, pavement improvements and/or markings, 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. Construction equipment anticipated to be used 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 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. Published under the authority of the WATCH Committee of Public Works Standards, Inc., the Handbook is 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.

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.

ES.10 DESCRIPTION OF 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. The proposed service span is consistent with the Metro B Line (Red). The BRT would operate with 10-minute frequency throughout the day on weekdays tapering to 15 to 20 minutes frequency during weekday evenings (after 7:00 p.m.), and with 15-minute frequency during the day on weekends tapering to 30 minutes on weekend evenings. Stations are being designed to accommodate 60-foot buses, although it is anticipated that the BRT service would be provided on 40-foot zero-emission electric buses with the capacity to serve up to 75 passengers, including 35-50 seated passengers and 30-40 standees, and a maximum of 16 buses are anticipated

to be in service along the route during peak operations. Charging infrastructure would be available at the North Hollywood Station and potentially at the Pasadena City College terminus, as well as at the Metro El Monte (Division 9) facility, which is where it is expected that buses would be stored.[1] The Proposed Project has an anticipated opening date in 2024.

When operations commence in 2024, it is possible that the fleet would consist of compressed natural gas (CNG) buses until zero-emission electric buses become available. The employment of CNG buses would be temporary and would not represent long-term operational conditions. The Metro Board in 2017 unanimously adopted a motion endorsing a comprehensive plan to transition the agency to a 100 percent zero emission bus fleet by 2030.

ES.11 RIDERSHIP

The Proposed Project is expected to attract new transit riders thus encouraging a shift from automobile use to public transit as well as improved regional connectivity and local transit access to corridor destinations in the near term as well as long term. The Proposed Project is forecast to attract 34,950 boardings in 2042. Regional vehicle miles traveled with the Proposed Project would decrease by approximately 87,000 miles compared to without the Proposed Project.

ES.12 PROJECT COST AND FUNDING

The Proposed Project is funded by Measure M ($267 million) and Senate Bill 1 ($50 million), which provide a total of $317 million in funding.

Capital Costs

Capital costs for the Proposed Project were estimated based on the Concept Plans. 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 design option) to capture and identify the costs associated with each segment, and to assist in the evaluation of the design 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 indicate a range of approximately $263 million to $386 million, including contingencies and escalation. The level of detail of the capital cost estimates corresponds with the current level of definition, engineering,

[1] Charging infrastructure is currently being designed for installation at North Hollywood Station for the Metro G Line (Orange) and additional bus service that accesses this station. Charging infrastructure could potentially be accommodated at Pasadena City College, with mast arms extending to the identified layover-loading zone along Hill Avenue. At the El Monte Division 9 facility, Metro would be installing charging infrastructure in conjunction with the systemwide conversion to electric bus operations.

and environmental analysis that has been completed for the Project. The level of estimating detail would increase as the project design and engineering advances.

Operations and Maintenance (O&M) Costs

An O&M cost model was developed to estimate the annual cost to operate, maintain and administer the Proposed Project. 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.

ES.13 SIGNIFICANT AND UNAVOIDABLE IMPACTS

No significant and unavoidable impacts have been identified for the Proposed Project.

ES.14 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A Draft EIR was prepared by Metro to analyze the potential significant environmental impacts of the Proposed Project and to identify mitigation measures capable of avoiding or substantially reducing significant impacts. Revisions to the Proposed Project have not resulted in new impacts that were not identified in the Draft EIR. Potential impacts of the proposed project have been divided into three categories: significant unavoidable impacts, significant impacts that can be mitigated to less-than-significant levels and impacts that are less than significant or non-existent. **Table ES-4** provides a summary of the potential environmental impacts. **Table ES-5** provides recommended mitigation measures and the level of significance after mitigation.

Table ES-4 – Summary of Impacts

Proposed Project/Alternative			Environmental Resource									
	District	Segment	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	GHG	Noise	Transportation	Tribal
Proposed Project	North Hollywood	A	LTS	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-4** **TRA-6**	LTSM **CUL-2**
	North Hollywood/ Burbank	B	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	Burbank	C	LTSM **VIS-1** **VIS-2**	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-4** **TRA-6**	LTSM **CUL-2**
	Glendale	D/E	LTSM **CUL-1**	LTS	LTSM **BIO-1**	LTSM **CUL-1** **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-4** **TRA-6**	LTSM **CUL-2**
	Eagle Rock	F (One Travel Lane)	LTSM **VIS-1** **VIS-2**	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-4** **TRA-5** **TRA-6**	LTSM **CUL-2**

Proposed Project/Alternative		Environmental Resource									
District	Segment	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	GHG	Noise	Transportation	Tribal
	F (Two Travel Lanes)	LTSM **VIS-1** **VIS-2**	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-4** **TRA-5** **TRA-6**	LTSM **CUL-2**
Pasadena	G	LTS	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-6**	LTSM **CUL-2**
Pasadena	H	LTS	LTS	LTSM **BIO-1**	LTSM **CUL-2**	LTS	LTSM **GEO-1**	NI	LTSM **NOI-1** **NOI-2**	LTSM **TRA-1** **TRA-2** **TRA-3** **TRA-6**	LTSM **CUL-2**
No Project Alternative		NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Alternative 2		NI	LTS	LTS	LTS	LTS	NI	NI	LTS	LTS	NI

Notes: NI – No impact, LTS – Less-than-significant impact, LTSM – Less-than-significant impact with Mitigation
SOURCE: Terry A. Hayes Associates, Inc., 2022.

Table ES-5 – Summary of Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
AESTHETICS		
The Proposed Project would result in removal of historic streetlights considered important visual resources along Central Avenue and Broadway in Glendale, a potentially significant impact.	**CUL-1**: Project design related to potentially historic streetlights and station platforms located immediately adjacent (i.e., on or directly in front of) known or potential historical resources identified in the Historical Resources Project Area shall be reviewed by a qualified architectural historian (individual who meets the Secretary of the Interior's Professional Qualification Standards in Appendix A of 36 Code of Federal Regulations Part 61) to determine consistency with the rehabilitation treatment under the Secretary of the Interior's Standards for the Treatment of Historic Properties and confirm the Proposed Project will not cause a substantial adverse change in the significance of a historical resource. The results of this review shall be provided to Metro in a memorandum prepared by the qualified architectural historian conducting the review. This review shall be completed prior to the preparation of final construction documents.	**Less Than Significant**
The Proposed Project would result in the removal of street trees considered to be important visual resources, a potentially significant impact	**VIS-1**: Plant material removed from center medians and sidewalks shall be replaced within the existing street/curb right-of-way based on the following requirements: • Street trees shall be replaced in accordance with the regulations established by each affected jurisdiction's Bureau of Street Services and located within the street right-of-way along station approaches or within the sidewalk. • Plant groundcover using similar replacement species or to the satisfaction of the affected jurisdiction's Bureau of Street Services. • A Landscape Replacement Study shall be prepared by a licensed landscape architect during final design. The study shall identify the location, species, and landscape design elements for all replacement landscaping associated with the Proposed Project and subject to local jurisdiction review. **VIS-2**: Replacement median, barriers, or other divider shall be enhanced with patterns or decorative features in accordance with the local jurisdiction's streetscape design guidelines and approved by local jurisdiction Street Services bureau or similar entity.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
BIOLOGICAL RESOURCES		
Construction of the Proposed Project would result in the removal of street trees used by migratory birds and bats for nesting, a potentially significant impact.	**BIO-1**: To mitigate for construction impacts on special-status bird species, the construction contractor shall implement the following measures: • Construction during bird nesting season (typically February 1 to September 1) would be avoided to the extent feasible. Feasible means capable of being accomplished in a successful manner taking into consideration costs and schedule. • If construction is required during the nesting season, vegetation removal would be conducted outside of the nesting season (typically February 1 to September 1), wherever feasible. Feasible means capable of being accomplished in a successful manner taking into consideration costs and schedule. • If construction, trimming, or removal of vegetation and trees are scheduled to begin during nesting bird season, nesting bird surveys would be completed by a qualified biologist no more than 72 hours prior to construction, or as determined by the qualified biologist, to determine if nesting birds or active nests are present within the construction area. Surveys would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Surveys would be repeated if construction, trimming, or removal of vegetation and trees are suspended for five days or more. • If nesting birds/raptors are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) would be installed and maintained until nesting activity has ended, as determined in coordination with the qualified biologist and regulatory agencies, as appropriate. To mitigate construction impacts on special-status bat species, the construction contractor shall implement the following measures: • Where feasible, tree removal would be conducted in October, which is outside of the maternal and non-active seasons for bats. • During the summer months (June to August) in the year prior to construction, a thorough bat roosting habitat assessment would be conducted of all trees and structures within 100 feet of the construction	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	area. Visual and acoustic surveys would be conducted for at least two nights during appropriate weather conditions to assess the presence of roosting bats. If presence is detected, a count and species analysis would be completed to help assess the type of colony and usage. • No fewer than 30 days prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from any roosts to be directly impacted by the Project under the direction of a qualified biologist. Once bats have been safely evicted, exclusionary devices designed by the qualified biologist would be installed to prevent bats from returning and roosting in these areas prior to removal. Roosts not directly impacted by the Project would be left undisturbed. • No fewer than two weeks prior to construction, all excluded areas would be surveyed to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction. • If the presence or absence of bats cannot be confirmed in potential roosting habitat, a qualified biologist would be onsite during removal or disturbance of this area. If the biologist determines that bats are being disturbed during this work, work would be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work would resume only once all bats have left the site and/or approval is given by a qualified biologist. • In the event that a maternal colony of bats is found, no work would be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site would be designated as a sensitive area and protected as such until the bats have left the site. No activities would be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, would not to be parked nor operated under or adjacent to the roosting site. Construction personnel would not be authorized to enter areas beneath the colony, especially during the evening exodus (typically between 15 minutes prior to sunset and one hour following sunset).	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
CULTURAL RESOURCES		
The Proposed Project would result in removal of historic streetlights in along Central Avenue and Broadway in Glendale, a potentially significant impact.	**CUL-1**: A qualified architectural historian (individual who meets the Secretary of the Interior's Professional Qualification Standards in Appendix A of 36 Code of Federal Regulations Part 61) shall review all project design documents related to historic streetlights and station platforms located immediately adjacent (i.e., on or directly in front of) known or potential historical resources identified in the Historical Resources Project Area to determine consistency with the rehabilitation treatment under the Secretary of the Interior's Standards for the Treatment of Historic Properties to confirm the Proposed Project will not cause a substantial adverse change in the significance of a historical resource. The results of this review shall be provided to Metro in a memorandum prepared by the qualified architectural historian conducting the review, and Metro shall incorporate any design recommendations that would address potential substantial adverse changes in the significance of a historical resource into project design documents prior to the preparation of final construction documents.	**Less Than Significant**
Ground disturbing activities during construction of the Proposed Project has the potential to encounter previously undiscovered and undocumented archaeological resources, a potentially significant impact.	**CUL-2**: A Qualified Archaeologist, meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained for the Project and will remain on call during all ground-disturbing activities. The Qualified Archaeologist shall ensure that Worker Environmental Awareness Protection (WEAP) training, presented by a Qualified Archaeologist and Native American representative, is provided to all construction and managerial personnel involved with the Proposed Project. The WEAP training shall provide an overview of cultural (prehistoric and historic) and tribal cultural resources and outline regulatory requirements for the protection of cultural resources. The WEAP shall also cover the proper procedures in the event of an unanticipated cultural resource. The WEAP training can be in the form of a video or PowerPoint presentation. Printed literature (handouts) can accompany the training and can also be given to new workers and contractors to avoid the necessity of continuous training over the course of the Proposed Project. If an inadvertent discovery of archaeological materials is made during construction activities, ground disturbances in the area of the find shall be halted and the Qualified Archaeologist shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources are identified, the interested Native American participant(s) shall be notified.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	The archaeologist, in consultation with Native American participant(s) and the lead agency, shall determine whether the resource is potentially significant as per CEQA (i.e., whether it is an historical resource, a unique archaeological resource, a unique paleontological resource, or tribal cultural resources). If avoidance is not feasible, a Qualified Archaeologist, in consultation with the lead agency, shall prepare and implement a detailed treatment plan. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of, but would not be limited to, in-field documentation, archival research, subsurface testing, and excavation. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals.	
GEOLOGY AND SOILS		
The Proposed Project poses risks of loss, injury, or death related to seismic conditions including ground shaking, liquefaction, slope failure and landslide, a potentially significant impact.	**GEO-1**: The Proposed Project shall be designed based on the latest versions of local and State building codes and regulations in order to construct seismically-resistant structures that help counteract the adverse effects of ground shaking. During final design, site-specific geotechnical investigations shall be performed at the sites where structures are proposed within liquefaction-prone designated areas. The investigations shall include exploratory soil borings with groundwater measurements. The exploratory soil borings shall be advanced, as a minimum, to the depths required by local and State jurisdictions to conduct liquefaction analyses. Similarly, the investigations shall include earthquake-induced settlement analyses of the dry substrata (i.e., above the groundwater table). The investigations shall also include seismic risk solutions to be incorporated into final design (e.g., deep foundations, ground improvement, remove and replace, among others) for those areas where liquefaction potential may be experienced. The investigation shall include stability analyses of slopes located within earthquake-induced landslides areas and provide appropriate slope stabilization measures (e.g., retaining walls, slopes with shotcrete faces, slopes re-grading, among others). The geotechnical investigations and design solutions shall follow the “Guidelines for Evaluating and Mitigating Seismic Hazards in California” Special Publication 117A of the California Geologic Service, as well as Metro’s Design Criteria and the latest federal and State seismic and environmental requirements.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
NOISE		
Construction of the Proposed Project has the potential to generate noise that could increase ambient noise levels by 5 dBA L_{eq} or more which would exceed local significance thresholds within one or more jurisdictions along the BRT alignment, a potentially significant impact.	**NOI-1**: Where construction cannot be performed in accordance with the FTA 1-hour L_{eq} construction noise standards, elevates existing ambient noise levels by 5 dBA L_{eq} or more at a noise sensitive use, or exceeds other applicable noise thresholds of significance, the construction contractor shall develop a Noise Control Plan demonstrating how noise criteria would be achieved during construction. The Noise Control Plan shall be designed to follow Metro requirements, include construction noise control measures, measurements of existing noise, a list of the major pieces of construction equipment that would be used, and predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan shall be approved by Metro prior to initiating localized construction activities. The Noise Control Plan shall require weekly noise monitoring at land used adjacent to construction activities. Noise reducing measures shall be required should the following performance standards be exceeded within the following jurisdictions: • City of Los Angeles: Construction noise levels that exceed the existing ambient exterior noise level at a noise sensitive use by 10 dBA L_{eq} within one hour for construction lasting more than one day, 5 dBA L_{eq} for construction lasting more than 10 days in a three-month period, and any exceedance of 5 dBA during the hours of 9:00 p.m. to 7:00 a.m. Monday through Friday and between 6:00 p.m. to 8:00 a.m. on Saturday or any time Sunday. • City of Burbank: Construction noise levels that exceed the existing ambient exterior noise level between 7:00 a.m. and 7:00 p.m. at a noise sensitive use by 5 dBA L_{eq} for construction lasting more than 10 days in a three-month period. Construction noise levels of any duration that exceed existing ambient exterior noise levels by 5 dBA L_{eq} at a noise sensitive use between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 5:00 p.m. on Saturday, or at any time on Sunday. • City of Glendale: Construction noise levels that exceed the existing ambient exterior noise level between 7:00 a.m. and 7:00 p.m. at a noise sensitive use by 5 dBA L_{eq} for construction lasting more than 10 days in a three-month period. Construction noise levels of any duration that exceed existing ambient	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	exterior noise levels by 5 dBA L_{eq} at a noise sensitive use between 7:00 p.m. and 7:00 a.m. Monday through Saturday or at any time on Sunday. • City of Pasadena: Construction noise levels that exceed 85 dBA L_{eq} at 100 feet of distance or any duration of noise levels that exceeds existing ambient exterior noise levels by 5 dBA L_{eq} at a noise sensitive use between 7:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 5:00 p.m. on Saturday, or at any time on Sunday. Noise-reducing methods that may be implemented include: • Where construction occurs near noise sensitive land uses, specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers shall be used. • Limit unnecessary idling of equipment. • Install temporary noise barriers or noise-control curtains, where feasible and desirable. • Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers. • Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools where feasible.	
Construction of the Proposed Project includes use of heavy equipment that could produce vibration that would exceed the FTA's recommended limit of 0.2 in/sec PPV for any non-engineered timber and masonry buildings within 25 feet of construction activity, a potentially significant impact.	**NOI-2**: Where equipment such as a vibratory roller, that produces high levels of vibration is used within 25 feet of buildings or typical equipment such as a large bulldozer is used within 15 feet of buildings, or where the 0.2 PPV inches per second vibration damage risk threshold would be exceeded, the construction contractor shall develop and implement a Vibration Control Plan to avoid exceeding FTA thresholds for significant vibration impacts at land uses. The Construction Vibration Control Plan shall include mitigation measures to minimize vibration impacts during construction. Recommended construction vibration mitigation measures shall, at a minimum, include: • The contractor shall minimize the use of tracked vehicles. • The contractor shall avoid vibratory compaction within 25 feet of buildings.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	• The contractor shall monitor vibration levels near sensitive receivers during activities that generate high vibration levels to ensure thresholds are not exceeded.	
Construction of the Proposed Project could produce vibration from bulldozers and similar equipment that could annoy those in institutional uses (e.g., schools, churches) during the day, and residents at any time during the day or evening. Equipment such as large bulldozers could generate 87 VdB of vibration at 25 feet, which would exceed the 75 VdB significance threshold for occasional events impacting residences and the 78 VdB threshold for institutional daytime land uses, a potentially significant impact.	**NOI-3:** Where equipment such as a vibratory roller that produces high levels of vibration is used within 105 feet of residences or institutional daytime land uses or equipment such as large bulldozers are used within 65 feet of such uses, the 75 VdB vibration threshold for human annoyance could be exceeded at residences or the 75 VdB threshold at institutional uses. The Construction Vibration Control Plan shall include mitigation measures to minimize vibration impacts during construction. Recommended construction vibration mitigation measures that shall be considered and implemented where feasible include: • The contractor shall minimize the use of tracked vehicles and vibratory equipment. • The contractor shall avoid vibratory compaction. • The contractor shall monitor vibration levels near sensitive receivers during activities that generate high vibration levels to ensure thresholds are not exceeded.	**Less Than Significant**
TRANSPORTATION		
Construction of the Proposed Project may result in temporary relocation of existing bus stops and temporary delays to transit travel time due to lane closures, a potentially significant impact.	**TRA-1**: Prior to the initiation of localized construction activities, a Traffic Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor in coordination with the City of Los Angeles, City of Burbank, City of Glendale, and City of Pasadena. Metro shall develop detours as appropriate and communicate any changes to bus service to local transit agencies in advance. Stops shall be relocated in a manner which is least disruptive to transit. If bus stops need to be relocated, warning signs shall be posted in advance of closure along with alternative stop notifications and information regarding the duration of the closure.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
Construction of the Proposed Project may result in traffic delays and inconvenience due to temporary lane closures, a potentially significant impact.	**TRA-2**: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor in coordination with the City of Los Angeles, City of Burbank, City of Glendale, and City of Pasadena. The Traffic and/or Construction Management Plan shall include provisions such as: approval of work hours and lane closures, designation of construction lay-down zones, provisions to maintain roadway access to adjoining land uses, use of warning signs, temporary traffic control devices and/or flagging to manage traffic conflicts, and designation of detour routes where appropriate.	**Less Than Significant**
Construction of the Proposed Project may require temporary closure of sidewalks affecting pedestrian circulation, a potentially significant impact.	**TRA-3**: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor, in coordination with affected jurisdictions. The plan shall include provisions for wayfinding signage, lighting, and access to pedestrian safety amenities (such as handrails, fences and alternative walkways). Metro shall also work with local municipalities and public works departments to confirm that only one side of the street would be closed at a time. If crosswalks are temporarily closed, pedestrians shall be directed to use nearby pedestrian facilities. Where construction encroaches on sidewalks, walkways and crosswalks, special pedestrian safety measures shall be used such as detour routes and temporary pedestrian shelters. Access to businesses and residences shall be maintained throughout the construction period. These mitigation measures shall be documented in a Traffic Management Plan and/or Construction Management Plan.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
Construction of the Proposed Project would result in temporary roadway lane closures which may affect existing and planned bicycle facilities, a potentially significant impact	**TRA-4**: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor, in coordination with the affected jurisdictions. The plan shall identify on-street bicycle detour routes and signage. Metro shall also work with local municipalities and public works departments to accommodate bicycle circulation during construction. Bicycle access to businesses and residences shall be maintained throughout the construction period. These mitigation measures shall be documented in a Traffic Management Plan and/or Construction Management Plan.	**Less Than Significant**
The Proposed Project would reconfigure existing bicycle facilities, a potentially significant impact.	**TRA-5**: Prior to completion of Final Design, Metro shall convene a design working group with LADOT to resolve potential bicycle conflicts and identify network enhancements that integrate bicycle and BRT facilities, consistent with Policy 2.6 and Policy 2.9 of the Mobility Plan 2035. The design working group shall include representatives from the LADOT Active Transportation Division, the Los Angeles Bureau of Engineering, and a representative of the Los Angeles County Bicycle Coalition. Coordination shall be provided with LADOT and the Active Transportation Division during the preliminary engineering design development phase. In addition, Metro shall coordinate with the Cities of Burbank, Glendale, and Pasadena to resolve potential bicycle conflicts and identify network enhancements that integrate bicycle and BRT facilities.	**Less Than Significant**
Construction of the Proposed Project would result in lane closures and traffic detours, and designated truck routes associated with construction could temporarily result in decreased access and delayed response times for emergency services, a potentially significant impact.	**TRA-6**: The construction contractor shall provide early notification of traffic disruption to emergency service providers. Work plans and traffic control measures shall be coordinated with emergency responders to prevent impacts to emergency response times. A Traffic Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed and implemented to minimize impacts on emergency access.	**Less Than Significant**

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
TRIBAL CULTURAL RESOURCES		
Ground disturbing activities during construction of the Proposed Project has the potential to impact previously undiscovered buried tribal cultural resources of historical significance, a potentially significant impact.	**CUL-2**: A Qualified Archeologist, meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained for the Project and will remain on call during all ground-disturbing activities. The Qualified Archaeologist shall ensure that Worker Environmental Awareness Protection (WEAP) training, presented by a Qualified Archaeologist and Native American representative, is provided to all construction and managerial personnel involved with the Proposed Project. The WEAP training shall provide an overview of cultural (prehistoric and historic) and tribal cultural resources and outline regulatory requirements for the protection of cultural resources. The WEAP shall also cover the proper procedures in the event of an unanticipated cultural resource. The WEAP training can be in the form of a video or PowerPoint presentation. Printed literature (handouts) can accompany the training and can also be given to new workers and contractors to avoid the necessity of continuous training over the course of the Proposed Project. If an inadvertent discovery of archaeological materials is made during construction activities, ground disturbances in the area of the find shall be halted and the Qualified Archaeologist shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources are identified, the interested Native American participant(s) shall be notified. The archaeologist, in consultation with Native American participant(s) and the lead agency, shall determine whether the resource is potentially significant as per CEQA (i.e., whether it is an historical resource, a unique archaeological resource, a unique paleontological resource, or tribal cultural resources). If avoidance is not feasible, a Qualified Archaeologist, in consultation with the lead agency, shall prepare and implement a detailed treatment plan. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of, but would not be limited to, in-field documentation, archival research, subsurface testing, and excavation. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals.	**Less Than Significant**

SOURCE: Terry A. Hayes Associates Inc., 2022.

ES.15 COMPARISON OF ALTERNATIVES

CEQA requires an analysis of alternatives to the Proposed Project to reduce or eliminate significant impacts associated with project development. Two alternatives have been identified to the Proposed Project. Alternative 1 is the No Project Alternative. The No Project Alternative is required by CEQA Guidelines Section 15126.6(e)(2) and assumes that the Proposed Project would not be implemented by Metro. The No Project Alternative allows decision-makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. The No Project Alternative is evaluated in the context of the existing transportation facilities in the Project Area and other capital transportation improvements and/or transit and highway operational enhancements that are reasonably foreseeable.

Alternative 2 would implement improved bus service instead of BRT. The improved bus service would have some BRT characteristics. The service may be as frequent as that proposed for BRT, though its ability to attract as much ridership may be less due to less travel time savings and amenities, meaning a slightly less frequent service would be operated compared to that proposed for the BRT Project. Buses would operate in mixed-flow traffic with TSP. Stops would be more frequent than the BRT line, but less frequent than local bus lines (typically every 0.6 miles on average). Travel times would be faster than for local service but slower than the travel times expected from the BRT Project. Stops would occur at existing bus stations and there would be no modifications to the roadway configuration. Physical improvements would be limited to new signs at bus stops as well as shelter with solar lighting, bench and trash receptacle as a minimum level of bus stop amenities. Alternative 2 would not include curb extensions, elimination of parking, or changes to bicycle lanes. This alternative would not require a Maintenance and Storage Facility, as buses would be maintained at existing Metro facilities. Similar to BRT buses, buses would have low-floor design to allow for faster and easier boarding and alighting. The fleet would be equipped for all door boarding.

CEQA Guidelines Section 15126.6 requires that an “environmentally superior” alternative be identified among the alternatives that are evaluated in the Draft EIR. The environmentally superior alternative is the alternative that would be expected to generate the fewest adverse impacts. A summary of the impacts of the No Project Alternative (Alternative 1) and Alternative 2 relative to the Proposed Project is shown **Table ES-5**. The No Project Alternative is considered the environmentally superior alternative because there would be no physical changes to the existing environment resulting in construction or operational impacts. Other transit projects would be constructed within the Project corridor to enhance the regional network, although transit improvements would be limited compared to the Proposed Project. The No Project Alternative would include the North San Fernando Valley (SFV) BRT Project and the NextGen Bus Plan, in addition to other transportation and land use projects listed in Chapter 5 Cumulative Impact Analysis. The North SFV BRT Improvements Project would provide a new, high-quality bus service between the communities of Chatsworth to the west and North Hollywood to the east. Not constructing and operating the Proposed Project would eliminate the potentially significant impacts associated with the Proposed Project related to transportation (construction), aesthetics (operations), biological resources (construction), cultural resources (construction and operations), geology and soils (operations), noise (construction), and tribal cultural resources (construction).

However, the regional transit network within the Project corridor would not be substantially enhanced by the other transit projects.

If the No Project Alternative is identified as the environmentally superior alternative, CEQA requires identification of the environmentally superior alternative other than the No Project Alternative from among the Proposed Project and the other alternatives evaluated in the Draft EIR. Alternative 2 is the environmentally superior alternative in this case because, as compared to the Proposed Project, it avoids or reduces all construction impacts related to transportation, biological resources, cultural resources, noise, and tribal cultural resources. It also avoids or reduces operational impacts related to transportation, aesthetics, cultural resources, and geology and soils.