North Hollywood to Pasadena Bus Rapid Transit (BRT) Corridor Planning and Environmental Study

MINERAL RESOURCES TECHNICAL REPORT

Prepared For:

Metro

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ACRONYMS AND ABBREVIATIONS

BRT	Bus Rapid Transit
CEQA	California Environmental Quality Act
DOGGR	Division of Oil, Gas, and Geothermal Resources
EIR	Environmental Impact Report
LAMC	Los Angeles Municipal Code
Metro	Los Angeles County Metropolitan Transportation Authority
MRZ	Mineral Resources Zone
PRC	Public Resources Code
SMARA	Surface Mining and Reclamation Act of 1975
SMGB	State Mining and Geology Board

1. Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro) is proposing the North Hollywood to Pasadena Bus Rapid Transit (BRT) Corridor Project (Proposed Project or Project) which would provide a BRT service connecting several cities and communities between the San Fernando and San Gabriel Valleys. Specifically, the Proposed Project would consist of a BRT service that runs from the North Hollywood Metro B/G Line (Red/Orange) station in the City of Los Angeles through the Cities of Burbank, Glendale, the community of Eagle Rock in the City of Los Angeles, and Pasadena, ending at Pasadena City College. The Proposed Project with route options would operate along a combination of local roadways and freeway sections with various configurations of mixed-flow and dedicated bus lanes depending on location. A Draft Environmental Impact Report (EIR) is being prepared for the following purposes:

- To satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code (PRC) Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.).
- To inform public agency decision makers and the public of the significant environmental effects of the Proposed Project, as well as possible ways to minimize those significant effects, and reasonable alternatives to the Proposed Project that would avoid or minimize those significant effects.
- To enable Metro to consider environmental consequences when deciding whether to approve the Proposed Project.

This Mineral Resources Technical Report is comprised of the following sections:

1. Introduction
2. Project Description
3. Regulatory Framework
4. Existing Setting
5. Significance Thresholds and Methodology
6. Impact Analysis
7. Cumulative Analysis
8. References
9. List of Preparers

2. Project Description

This section is an abbreviated version of the Project Description contained in the Draft EIR. This abbreviated version provides information pertinent to the Technical Reports. Please reference the Project Description chapter in the Draft EIR for additional details about the Proposed Project location and surrounding uses, project history, project components, and construction methods. The Draft EIR also includes a more comprehensive narrative description providing additional detail on the project routing, station locations, and proposed roadway configurations. Unless otherwise noted, the project description is valid for the Proposed Project and all route variations, treatments, and configurations.

2.1 PROJECT ROUTE DESCRIPTION

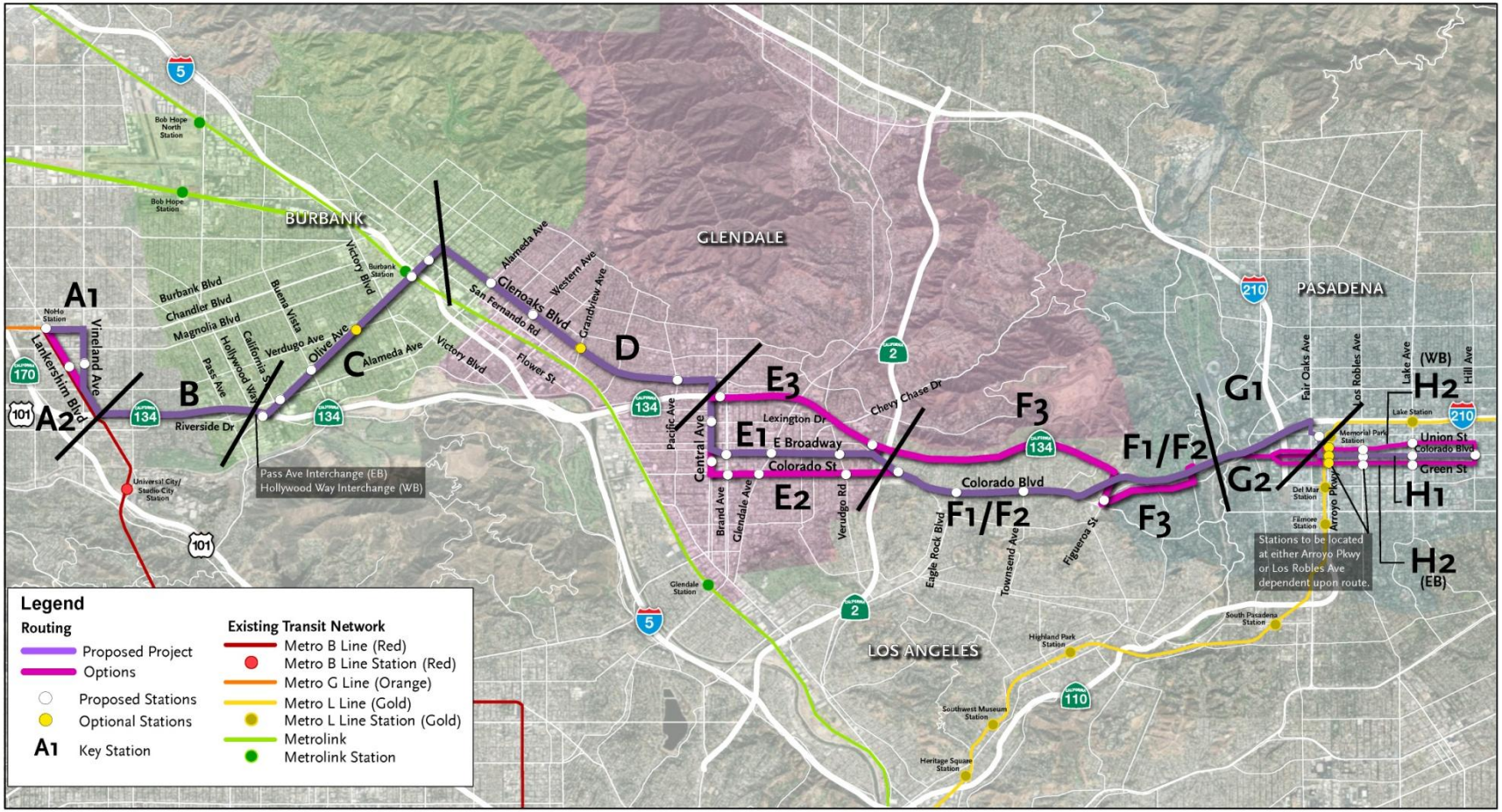
Metro is proposing the BRT service to connect several cities and communities between the San Fernando and San Gabriel Valleys. The Proposed Project extends approximately 18 miles from the North Hollywood Metro B/G Line (Red/Orange) Station on the west to Pasadena City College on the east. The BRT corridor generally parallels the Ventura Freeway (State Route 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 Study 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 (see **Figure 1**).

2.2 BRT ELEMENTS

BRT is intended to move large numbers of people quickly and efficiently to their destinations. BRT may be used to implement rapid transit service in heavily traveled corridors while also offering many of the same amenities as light rail but on rubber tires and at a lower cost. The Project would provide enhanced transit service and improve regional connectivity and mobility by implementing several key BRT elements. Primary components of the BRT are further addressed below and include:

- Dedicated bus lanes on city streets
- Transit signal priority (TSP)
- Enhanced stations with all-door boarding

Figure 1 – Proposed Project with Route Options



2.3 DEDICATED BUS LANES

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 as shown below:

- **Center-Running Bus Lanes:** Typically includes two lanes (one for each direction of travel) located in the center of the roadway. Stations are usually provided on islands at intersections and are accessible from the crosswalk.
- **Median-Running Bus Lanes:** Typically includes two lanes (one for each direction of travel) located in the inside lane adjacent to a raised median in the center of the roadway. Stations are usually provided on islands at intersections and are accessible from the crosswalk.
- **Side-Running Bus Lanes:** Buses operate in the right-most travel lane separated from the curb by bicycle lanes, parking lanes, or both. Stations are typically provided along curb extensions where the sidewalk is widened to meet the bus lane. At intersections, right-turn bays may be provided to allow buses to operate without interference from turning vehicles and pedestrians.
- **Curb-Running Operations:** Buses operate in the right-most travel lane immediately adjacent to the curb. Stations are located along the sidewalk which may be widened to accommodate pedestrian movement along the block. Right-turning traffic merges with the bus lane approaching intersections and buses may be delayed due to interaction with right-turning vehicles and pedestrians.
- **Mixed-Flow Operations:** Where provision of dedicated bus lanes is impractical, the BRT service operates in lanes shared with other roadway vehicles, although potentially with transit signal priority. For example, where the service transitions from a center-running to side-running configuration, buses would operate in mixed-flow. Buses would also operate in mixed-flow along freeway facilities.

Table 1 provides the bus lane configurations for each route segment of the Proposed Project.

Table 1 – Route Segments

Key	Segment	From	To	Bus Lane Configuration
A1 (Proposed Project)	**Lankershim Blvd.**	**N. Chandler Blvd.**	**Chandler Blvd.**	**Mixed-Flow**
	Chandler Blvd.	**Lankershim Blvd.**	**Vineland Ave.**	**Side-Running**
	Vineland Ave.	**Chandler Blvd.**	**Lankershim Blvd.**	**Center-Running**
	Lankershim Blvd.	**Vineland Ave.**	**SR-134 Interchange**	**Center-Running** **Mixed-Flow**[1]
A2 (Route Option)	Lankershim Blvd.	N. Chandler Blvd.	SR-134 Interchange	Side-Running Curb-Running[2]
B (Proposed Project)	**SR-134 Freeway**	**Lankershim Blvd.**	**Pass Ave. (EB)** **Hollywood Wy. (WB)**	**Mixed-Flow**
C (Proposed Project)	**Pass Ave. – Riverside Dr. (EB)** **Hollywood Wy. –** **Alameda Ave. (WB)**	**SR-134 Freeway**	**Olive Ave.**	**Mixed-Flow**[3]
	Olive Ave.	**Hollywood Wy. (EB)** **Riverside Dr. (WB)**	**Glenoaks Blvd.**	**Curb-Running**
D (Proposed Project)	**Glenoaks Blvd.**	**Olive Ave.**	**Central Ave.**	**Curb-Running** **Median-Running**[4]
E1 (Proposed Project)	**Central Ave.**	**Glenoaks Blvd.**	**Broadway**	**Mixed Flow** **Side-Running**[5]
	Broadway	**Central Ave.**	**Colorado Blvd.**	**Side-Running**
E2 (Route Option)	Central Ave.	Glenoaks Blvd.	Colorado St.	Side-Running
	Colorado St. – Colorado Blvd.	Central Ave.	Broadway	Side-Running
E3 (Route 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
	SR-134[6]	Brand Blvd.	Harvey Dr.	Mixed-Flow
F1 (Route Option)	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	**Side-Running**
				Side-Running Center Running[7]

Key	Segment	From	To	Bus Lane Configuration
F2 (Proposed Project)	**Colorado Blvd.**	**Broadway**	**Linda Rosa Ave. (SR-134 Interchange)**	**Side-Running**
F3 (Route Option)	SR-134	Harvey Dr.	Figueroa St.	Mixed-Flow
	Figueroa St.	SR-134	Colorado Blvd.	**Mixed-Flow**
	Colorado Blvd.	Figueroa St.	SR-134 via N. San Rafael Ave. Interchange	**Mixed-Flow**
G1 (Proposed 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**
G2 (Route Option)	SR-134	Colorado Blvd.	Colorado Blvd. Interchange	Mixed-Flow
	Colorado Blvd. or Union St./Green St.	Colorado Blvd. Interchange	Raymond Ave.	Mixed-Flow
H1 (Proposed Project)	**Colorado Blvd.**	**Raymond Ave.**	**Hill Ave.**	**Mixed-Flow**
H2 (Route Option)	Union St. (WB) Green St. (EB)	Raymond Ave.	Hill Ave.	Mixed-Flow

Notes:
[1]South of Kling St.
[2]South of Huston St.
[3]Eastbound curb-running bus lane on Riverside Dr. east of Kenwood Ave.
[4]East of Providencia Ave.
[5]South of Sanchez Dr.
[6]Route continues via Broadway to Colorado/Broadway intersection (Proposed Project F2 or Route Option F1) or via SR-134 (Route Option F3)
[7]Transition between Ellenwood Dr. and El Rio Ave.

2.4 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 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.

2.5 ENHANCED STATIONS

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

Metro is considering near-level boarding which may be achieved by a combination of a raised curb along the boarding zone and/or ramps to facilitate loading and unloading. It is anticipated that BRT buses would support all door boarding with on-board fare collection transponders in lieu of deployment of ticket vending machines at stations.

The Proposed Project includes 21 proposed stations and two “optional” stations, and additional optional stations have been identified along the Route Options, as indicated in **Table 2**. Of the 21 proposed stations, four would be in the center of the street or adjacent to the median, and the remaining 17 stations would be situated on curbs on the outside of the street.

Table 2 – Proposed/Optional Stations

Jurisdiction	Proposed Project	Route Option
North Hollywood (City of Los Angeles)	North Hollywood Transit Center (Metro B/G Lines (Red/Orange) Station)	
	Vineland Ave./Hesby St.	Lankershim Blvd./Hesby St.
City of Burbank	Olive Ave./Riverside Dr.	
	Olive Ave./Alameda Ave.	
	Olive Ave./Buena Vista St.	
	Olive Ave./Verdugo Ave. (optional station)	
	Olive Ave./Front St. (on bridge at Burbank-Downtown Metrolink Station)	
	Olive Ave./San Fernando Blvd.	
City of Glendale	Glenoaks Blvd./Alameda Ave.	
	Glenoaks Blvd./Western Ave.	
	Glenoaks Blvd./Grandview Ave. (optional station)	
	Central Ave./Lexington Dr.	Goode Ave. (WB) & Sanchez Dr. (EB) west of Brand Blvd.
		Central Ave./Americana Way
	Broadway/Brand Blvd.	Colorado St./Brand Blvd.
	Broadway/Glendale Ave.	Colorado St./Glendale Ave.
	Broadway/Verdugo Rd.	Colorado St./Verdugo Rd.
		SR 134 EB off-ramp/WB on-ramp west of Harvey Dr.
Eagle Rock (City of Los Angeles)	Colorado Blvd./Eagle Rock Plaza	
	Colorado Blvd./Eagle Rock Blvd.	
	Colorado Blvd./Townsend Ave.	Colorado Blvd./Figueroa St.
City of Pasadena	Raymond Ave./Holly St. [1] (near Metro L Line (Gold) Station)	
	Colorado Blvd./Arroyo Pkwy. [2]	Union St./Arroyo Pkwy. (WB)[2] Green St./Arroyo Pkwy. (EB)[2]
	Colorado Blvd./Los Robles Ave. [1]	Union St./Los Robles Ave. (WB)[1] Green St./Los Robles Ave. (EB)[1]
	Colorado Blvd./Lake Ave.	Union St./Lake Ave. (WB) Green St./Lake Ave. (EB)
	Pasadena City College (Colorado Blvd./Hill Ave.)	Pasadena City College (Hill Ave./Colorado Blvd.)

[1]With Fair Oaks Ave. interchange routing
[2]With Colorado Blvd. interchange routing

2.6 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, curb-and-gutter/sidewalk reconstruction, right-of-way (ROW) clearing, 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. 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 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. Most construction activities would occur during daytime hours. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Work Area Traffic Control Handbook. 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.

2.7 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 the evenings, and with 15-minute frequency during the day on weekends tapering to 30 minutes in the evenings. 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. The buses would be stored at an existing Metro facility.

3. Regulatory Framework

3.1 FEDERAL REGULATIONS

There are no existing federal regulations pertaining to mineral resources that are applicable to the Proposed Project.

3.2 STATE REGULATIONS

3.2.1 Surface Mining and Reclamation Act of 1975 (SMARA)

The SMARA provides a comprehensive surface mining and reclamation policy with the regulation of surface mining operations to ensure that adverse environmental impacts are minimized, and mined lands are reclaimed to a usable condition. SMARA directs the State Mining and Geology Board (SMGB) to adopt a State policy for the reclamation of mined lands and the conservation of mineral resources. SMARA also directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the State to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Regionally significant mineral resources are identified as Mineral Resources Zones (MRZs). Construction aggregate resources (i.e., sand and gravel) deposits were the first commodity selected for classification by the SMGB. Once mapped, the SMGB is required to designate those areas that contain aggregate deposits that are of prime importance in meeting the region's future need for construction-quality aggregates.

The primary objective of the SMARA is for each jurisdiction to develop policies that would conserve important mineral resources, where feasible, that might otherwise be unavailable when needed. The SMARA requires that once policies are adopted, local agency land use decisions must be in accordance with its mineral resource management policies. These decisions must also balance the mineral value of the resource to the market region as a whole, not just their importance to the local jurisdiction.

The Mineral Land Classification Maps for aggregate resources prepared by the SMGB designate four different types of resource sensitivities, according to the presence or absence of significant deposits. These maps indicate the potential for a specific area to contain significant mineral resources. The four sensitivity types are:

- **MRZ-1**: Areas where available geologic information indicates there is little or no likelihood for the presence of significant mineral resources.
- **MRZ-2**: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present, or where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.

- **MRZ-3**: Areas containing known mineral occurrences of undetermined mineral resource significance.
- **MRZ-4**: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

3.2.2 Division of Oil, Gas, and Geothermal Resources (DOGGR)

As part of the State Department of Conservation, DOGGR supervises the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells to protect the environment, and encourage good conservation practices. DOGGR collects data on the location of groundwater, oil, gas, and geothermal resources, and records the location of all drilled and abandoned wells. Existing law requires an operator of a well to obtain approval from the State Oil and Gas Supervisor or district deputy before beginning the work of drilling a well. DOGGR mandated responsibilities are found in PRC Section 3000 and Title, Chapter 4 of the California Code of Regulations (*California Statues and Regulations for the Division of Oil, Gas, & Geothermal Resources*).

3.2.3 Government Code Section 65302(d)

Government Code Section 65302(d) states that a conservation element of the general plan shall address minerals, water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, and other natural resources. The conservation element shall also consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands.

3.3 LOCAL REGULATIONS

3.3.1 City of Los Angeles

The City of Los Angeles' General Plan is a comprehensive, long-range declaration of purposes, policies and programs. The Conservation Element of the General Plan identifies existing mineral resources in the City of Los Angeles and contains resource management objectives and policies. Relevant Conservation Element objectives and policies related to mineral resources are shown in **Table 3**.

To comply with SMARA, the City adopted the 'G' Surface Mining supplemental use provisions of LAMC Section 13.03 in 1975. Subsequent amendments have brought the City of Los Angeles provisions into consistency with new State requirements. The 'G' (Surface Mining District) provisions are land use, not mineral conservation regulations. They regulate the establishment of sand and gravel districts, extraction operations, mitigation of potential noise, dust, traffic, and other potential impacts, as well as post-extraction site restoration.

Table 3 – City of Los Angeles Relevant General Plan Mineral Resources Objectives and Policies

Objective/Policy	Description
CONSERVATION ELEMENT – RESOURCE MANAGEMENT: MINERAL RESOURCES (SAND AND GRAVEL)	
Objective	Conserve sand and gravel resources and enable appropriate, environmentally sensitive extraction of sand and gravel deposits.
Policy 1	Continue to implement the provisions of the California Surface Mining and Reclamation Act (PRC Section 2710 *et seq*.) so as to establish extraction operations at appropriate sites; to minimize operation impacts on adjacent uses, ecologically important areas (e.g., the Tujunga Wash) and ground water; to protect the public health and safety; and to require appropriate restoration, reclamation and reuse of closed sites.
Policy 2	Continue to encourage the reuse of sand and gravel products, such as concrete, and of alternative materials use in order to reduce the demand for extraction of natural sand and gravel.
CONSERVATION ELEMENT – RESOURCE MANAGEMENT (FOSSIL FUELS): OIL	
Objective	Conserve petroleum resources and enable appropriate, environmentally sensitive extraction of petroleum deposits located within the City's jurisdiction so as to protect the petroleum resources for the use of future generations and to reduce the City's dependency on imported petroleum and petroleum products.

SOURCE: City of Los Angeles, *Conservation Element of the Los Angeles General Plan*, 2001.

3.3.2 City of Burbank

The Burbank 2035 General Plan does not include goals or polices related to the conservation of mineral resources. The General Plan states that City of Burbank is not considered to be a future potential source for mineral resources. No mineral resource policies have been identified that would be relevant to implementation of a transit project.

3.3.3 City of Glendale

The City of Glendale's General Plan is a comprehensive, long range declaration of purposes, policies and programs for the development of the City. The Open Space and Conservation Element of the General Plan identifies existing mineral resources in the City of Glendale and contains resource management objectives and policies. Relevant Open Space and Conservation Element goals and objectives related to mineral resources are shown in **Table 4**.

Table 4 – City of Glendale Relevant General Plan Mineral Resources Goals and Objectives

Goal/Objective	Description
OPEN SPACE AND CONSERVATION ELEMENT	
Goal	Preserve and protect valuable water and mineral resources.
Objective 6	Maintain current prohibition of rock, sand, gravel and mineral extraction in designated open space areas.

SOURCE: City of Glendale, *General Plan Open Space and Conservation Element*, 1993.

3.3.4 City of Pasadena

The City of Pasadena General Plan does not include goals or polices related to the conservation of mineral resources. No mineral resource policies have been identified that would be relevant to implementation of a transit project.

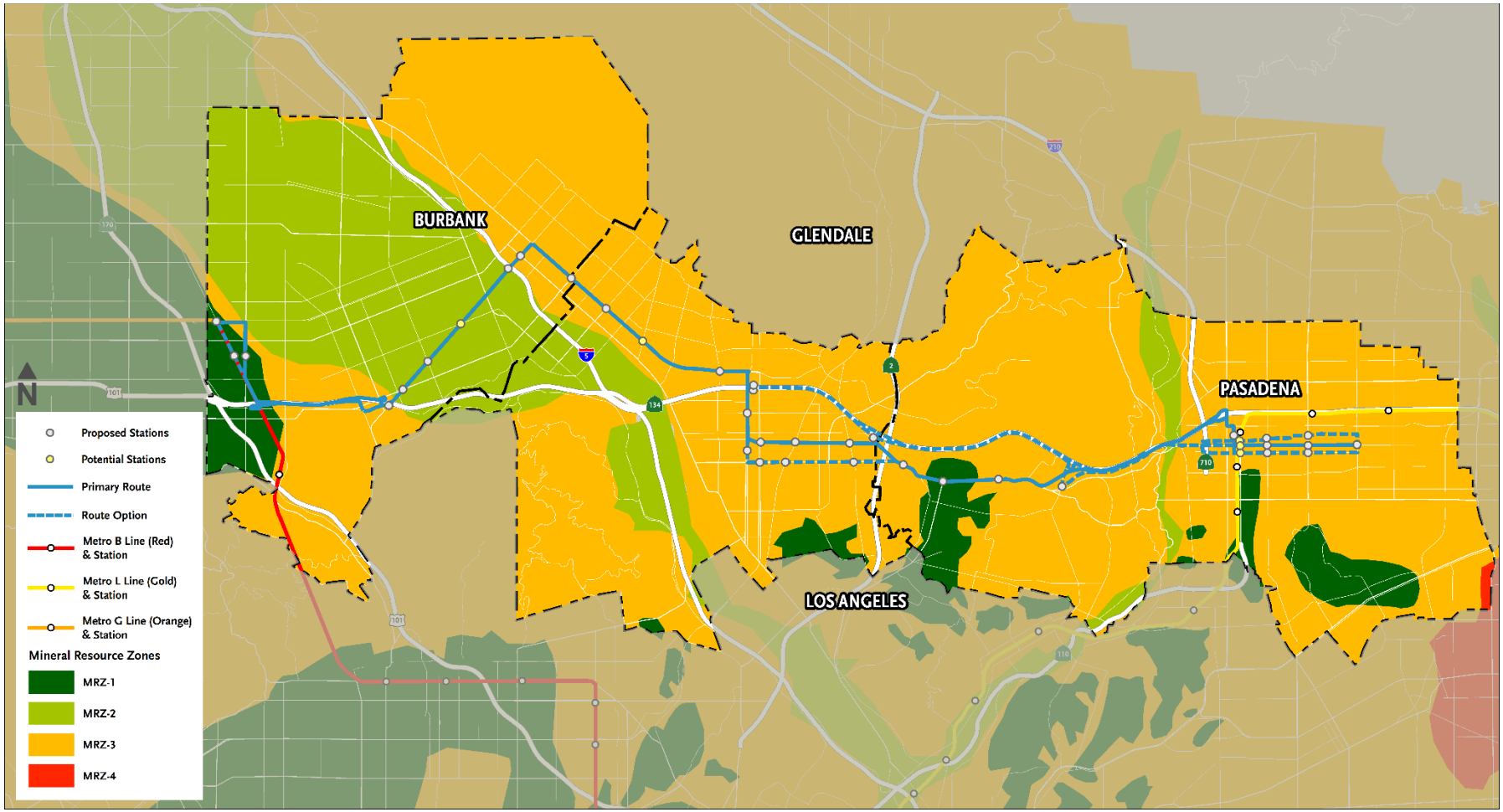
4. Existing Setting

A mineral resource is defined by the State Department of Conservation, SMGB, the United States Bureau of Mines, and United States Geological Survey as a concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible. In Los Angeles County, mineral resources serve various public, commercial, scientific, and recreational purposes. Local extraction sites are valuable assets used to help facilitate the continual growth of the region and economic market. Important local mineral resources include construction materials and minerals of historical significance including precious gemstones and metals. Aggregate resources include rock, sand, and gravel, which are important for the construction and manufacturing of concrete. Petroleum resources include oil and gas deposits, which are vital for various energy uses, including transportation, heat production and electricity generation.

The BRT Corridor consists of heavily developed urbanized areas where no sand and gravel mines have been identified. The majority of the alignment would be constructed above MRZ-3, which describes areas containing known mineral occurrences of undetermined mineral resource significance. A segment of the Proposed Project would operate along SR-134, traversing the Arroyo Seco canyon within the City of Pasadena. Large portions of the Arroyo Seco canyon are classified as MRZ-2, which describes areas where geologic data indicates the presence of significant mineral resources. A part of the Study Area in North Hollywood is also classified as MRZ-2. The BRT Corridor includes one small pocket of MRZ-1 located in the Eagle Rock community in the City of Los Angeles. MRZ-1 areas have little or no likelihood of the presence of significant mineral resources. Much of the identified MRZs in the Cities of Burbank, Glendale, Los Angeles and Pasadena were developed with structures prior to the MRZ classification and, therefore, extraction of mineral resources from much of these areas is unlikely and not anticipated to occur regardless of the Project implementation. **Figure 2** shows existing mineral resources.

There are no identified petroleum sources such as oil well sites or oil fields within the Project Area. Petroleum deposits within the City of Los Angeles primarily underlie portions of Downtown and West Los Angeles, the harbor area, and the Santa Monica and San Pedro Bays, all of which lie beyond the limits of the corridor. The City of Burbank does not have oil fields, but has several underground pipelines used to transport crude oil and natural gas. The Cities of Glendale and Pasadena do not contain petroleum sources.

Figure 2 – Existing Mineral Resources



SOURCE: California Department of Conservation, *Generalized Mineral Land Classification Map of Los Angeles County – South Half*, 1994.

5. Significance Thresholds and Methodology

5.1 SIGNIFICANCE THRESHOLDS

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to mineral resources if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State; and/or
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.2 METHODOLOGY

Development that includes placement of structures over mineral resource areas, or blocks access to a mineral resource area, is deemed to result in the loss of availability of resources. Impacts are determined based on whether the Proposed Project would result in a loss of, or loss of access to, identified mineral resources, and whether the loss of access would be permanent. The importance of the mineral resource on a State, regional and local level, in terms of economic value, remaining supply, and feasibility of recovering the resource is also taken into consideration. The following construction and operational impact conclusions are valid for the Proposed Project and route variations.

6. Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance of impacts after mitigation measures (if applicable). The potential for the Proposed Project to result in an impact to mineral resources is independent of the specific alignment and Project components. The following impact conclusions are valid for the Proposed Project and all route variations, treatments, and configurations.

Impact a) Would the Proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Construction

No Impact. Construction activities may result in ground disturbance related to roadway reconstruction and installation of Project components, including transit stations and First Mile/Last Mile improvements. Ground disturbing activities would be shallow and typically limited to within a few feet of the surface. Existing land uses and development do not allow for the extraction of mineral resources, and resource recovery does not occur within the Project corridor. Although there is a possibility that significant mineral resources could be located within MRZ- 2 areas, mining would not be feasible. The MRZ-2 area along the Arroyo Seco canyon is currently developed with the SR-134 Freeway, and the Proposed Project would not disturb land along this portion of the alignment. The MRZ-2 area in the North Hollywood community in the City of Los Angeles is heavily urbanized and the Proposed Project would not interfere with a mineral resource at this location. Therefore, the Proposed Project would not result in a significant impact related to construction activities.

Operations

No Impact. Operational activities would not result in the extraction of sand, gravel, or oil resources or further preclude the extraction of such resources and would not introduce new oil districts or oil producing uses. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

Impact b) Would the Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction

No Impact. No locally-important mineral resource recovery sites within the Cities of Los Angeles, Burbank, Glendale, or Pasadena have been identified in the Project corridor. Therefore, the Proposed Project would not result in a significant impact related to construction activities.

Operations

No Impact. Operational activities would not result in the extraction of sand, gravel, or oil resources or further preclude the extraction of such resources and would not introduce new oil districts or oil producing uses. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

7. Cumulative Analysis

CEQA Guidelines Section 15355 defines cumulative impacts as two or more individual actions that, when considered together, are considerable or would compound other environmental impacts. CEQA Guidelines Section 15130(a) requires that an Environmental Impact Report (EIR) discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." As set forth in CEQA Guidelines Section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Thus, the cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions to more accurately gauge the effects of multiple projects.

In accordance with CEQA Guidelines Section 15130(a)(3), a project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. In addition, the lead agency is required to identify facts and analysis supporting its conclusion that the contribution would be rendered less than cumulatively considerable.

CEQA Guidelines Section 15130(b) further provides that the discussion of cumulative impacts reflects "the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone." Rather, the discussion is to "be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute." CEQA Guidelines Sections 15130(b)(1)(A) and (B) include two methodologies for assessing cumulative impacts. One method is a list of past, present, and probable future projects producing related or cumulative impacts. The other method is a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for reducing greenhouse gas emissions. The cumulative effect on mineral resources in the Project Area is best addressed through consideration of Related Projects.

Related Projects that are considered in the cumulative impact analysis are those projects that may occur in the Project Site's vicinity within the same timeframe as the Proposed Project. In this context, "Related Projects" includes past, present, and reasonably probable future projects. Related Projects associated with this growth and located within half a mile of the Project Site are depicted graphically in **Figures 3a** through **3c** and listed in **Table 5**. The figures do not show Eagle Rock as no related projects have been identified in the Project Area. Related projects of particular relevance to the Proposed Project are discussed below.

Figure 3a – Cumulative Impact Study Area

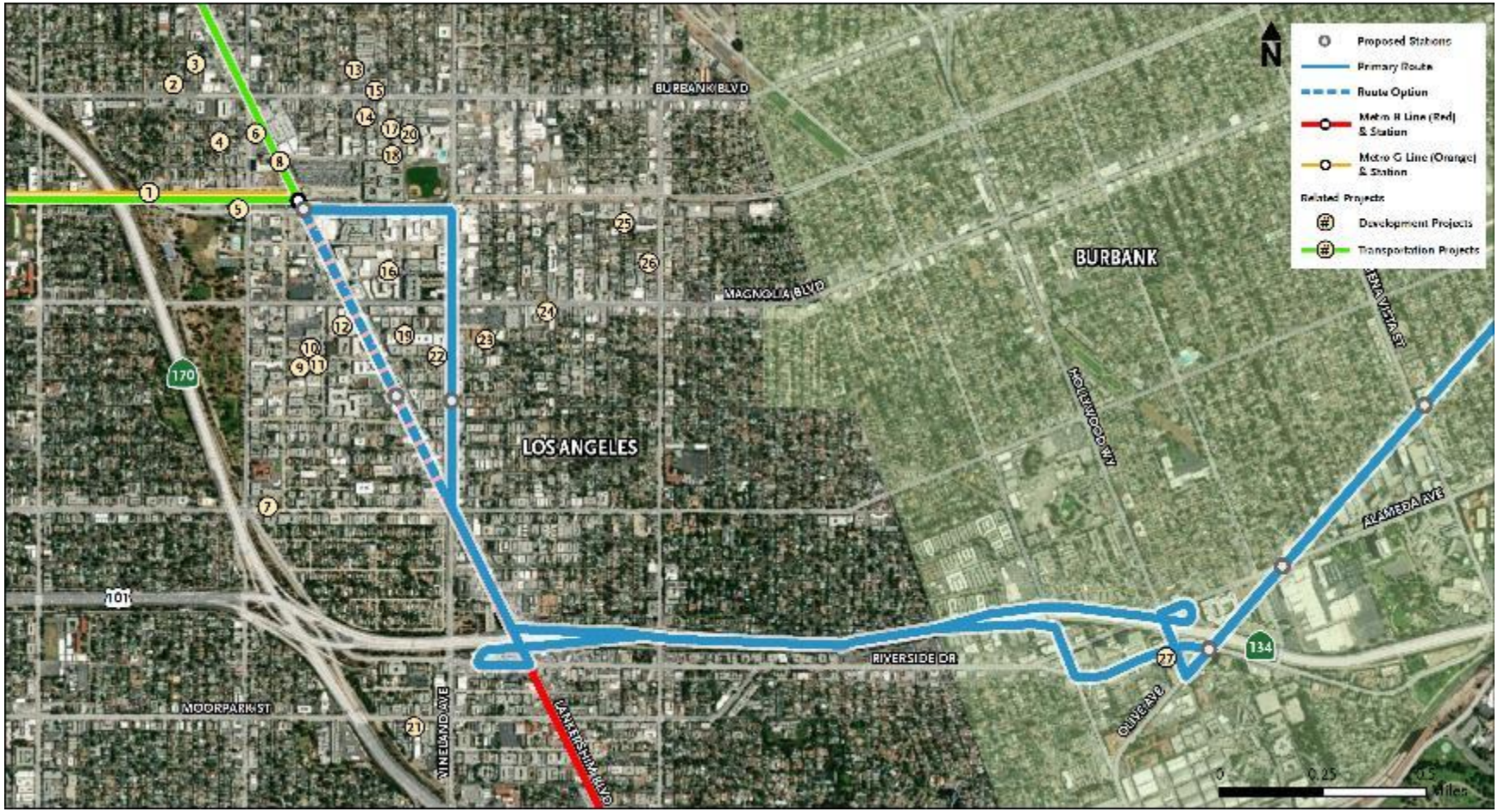


Figure 3b – Cumulative Impact Study Area

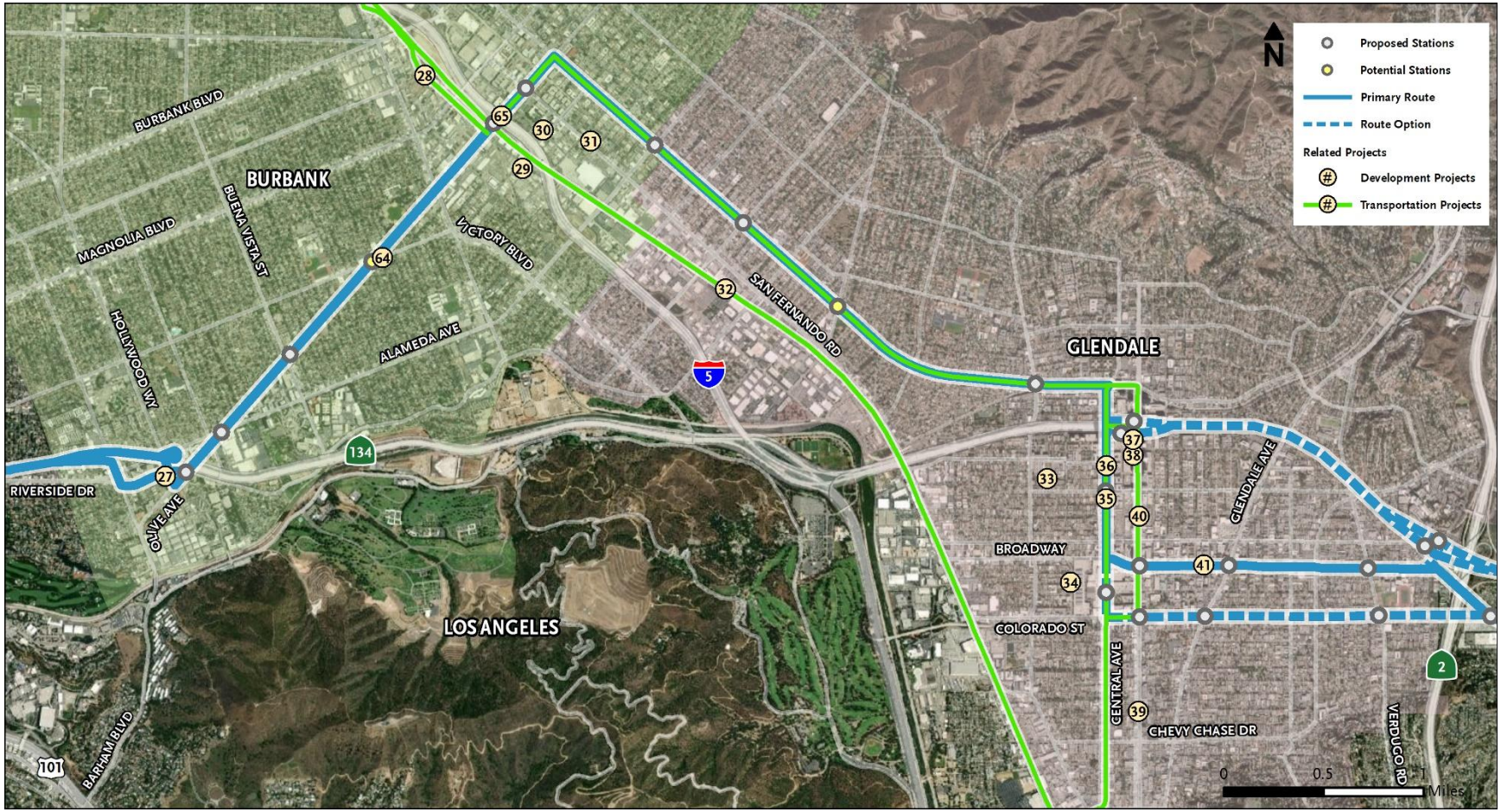


Figure 3c – Cumulative Impact Study Area

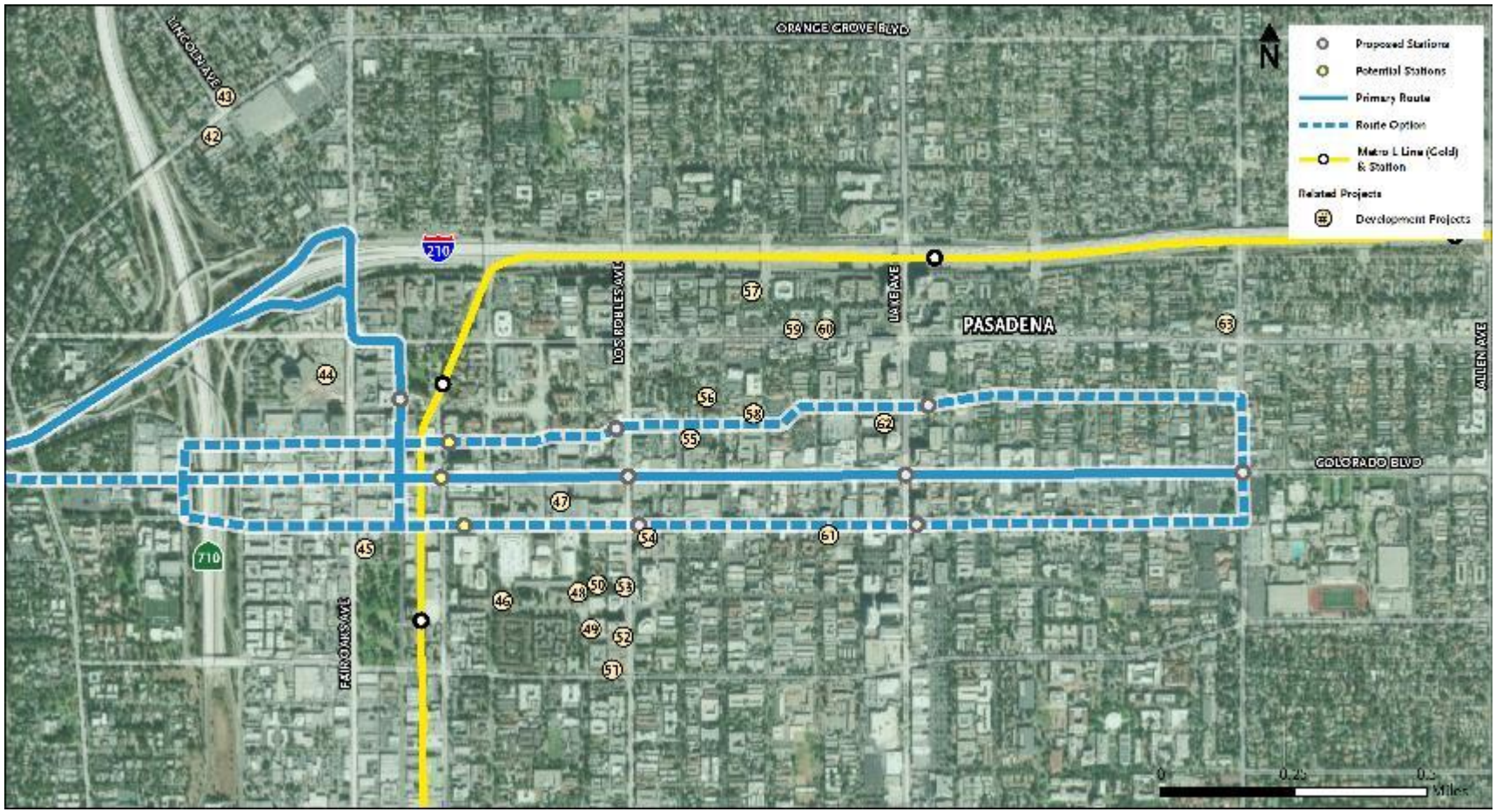


Table 5 – Related Projects

Map ID	Project Name	Location	Description	Status
REGIONAL				
N/A	NextGen Bus Plan	Los Angeles County	The NextGen Bus Plan will revise the existing Metro bus network to improve ridership and make bus use more attractive to current and future riders. The Plan will adjust bus routes and schedules based upon existing origin/destination ridership data with a phased approach to future infrastructure investments in transit convenience, safety, and rider experience.	Implementation early 2021
N/A	East San Fernando Valley LRT Project	San Fernando Valley	New 9-mile LRT line that will extend north from the Van Nuys Metro G Line (Orange) station to the Sylmar/San Fernando Metrolink Station.	Planning
8	North San Fernando Valley BRT Project	San Fernando Valley	New 18-mile BRT line from North Hollywood B/G Line (Red/Orange) Station to Chatsworth.	Planning
32	Los Angeles – Glendale-Burbank Feasibility Study	Amtrak corridor from Los Angeles Union Station to Bob-Hope Airport	Metro is studying a 13-mile transit corridor between Los Angeles Union Station and the Hollywood Burbank Airport. A range of options are under study including both light rail and enhanced commuter rail.	Planning and feasibility
BURBANK				
27	Mixed-Use Development	3700 Riverside Dr.	49-unit residential condominium and 2,000 sq. ft. of retail	Active Project Submission
28	San Fernando Bikeway	San Fernando Blvd. Corridor	Three-mile Class I bike path along San Fernando Blvd. near the Downtown Metrolink Station in the City of Burbank. This project will complete a 12-mile long regional bike path extending from Sylmar to the Downtown Burbank Metrolink Station along the San Fernando Blvd. rail corridor	Planning

Map ID	Project Name	Location	Description	Status
29	Commercial Development	411 Flower St.	Commercial building (size unknown)	Active Project Submission
30	Mixed-Use Development	103 Verdugo Ave.	Two mixed-use buildings (size unknown)	Active Project Submission
31	Mixed-Use Development	624 San Fernando Blvd.	42-unit, 4-story mixed-use building with 14,800 sq. ft. of ground-floor commercial	Active Project Submission
64	Olive Ave./Sparks St./Verdugo Ave. Intersection Improvements	Olive Ave./Sparks St./Verdugo Ave.	Various intersection improvements.	Planning
65	Olive Ave. Overpass Rehabilitation	Olive Ave. over Interstate 5	Improvements to operational efficiency, pedestrian safety, and bicycle connections.	Planning
GLENDALE				
33	Multi-Family Development	452 Milford St.	15-unit building	Active Project Submission
34	Multi-Family Development	401 Hawthorne St.	23-unit building	Active Project Submission
35	Commercial Development	340 Central Ave.	14,229 sq. ft. office	Active Project Submission
36	Multi-Family Development	520 Central Ave.	98-unit building	Active Project Submission
37	Commercial Development	611 Brand Blvd.	Hotel (857 hotel rooms and 7,500 sq. ft. of restaurant/retail)	Active Project Submission
38	Multi-Family Development	601 Brand Blvd.	604 units in 3 buildings	Active Project Submission
39	Commercial Development	901 Brand Blvd.	34,228 sq. ft. parking structure for car dealership	Active Project Submission
40	Glendale Streetcar	Downtown Glendale	Streetcar connecting the Larry Zarian Transportation Center with Downtown Glendale	Planning and feasibility
41	Commercial Development	517 Broadway	Medical/office/retail building (size unknown)	Active Project Submission
LOS ANGELES				
N/A	Orange Line Transit Neighborhood Plan	North Hollywood, Van Nuys, and Sepulveda BRT Stations	Develop regulatory tools and strategies for the areas around these three Orange Line stations to encourage transit ridership, enhance the urban built environment, and focus new growth and housing in proximity to transit and along corridors	Undergoing Environmental Review

Map ID	Project Name	Location	Description	Status
N/A	Take Back The Boulevard Initiative	Colorado Blvd.	The mission of the Take Back the Boulevard initiative is to serve as a catalyst for the community-drive revitalization of Colorado Boulevard in Eagle Rock. The Take Back the Boulevard initiative seeks to utilize broad community feedback and involvement to make this central corridor through Eagle Rock a safe, sustainable, and vibrant street in order to stimulate economic growth, increase public safety, and enhance community pride and wellness.	Active Initiative
1	Multi-Family Development	11525 Chandler Blvd.	60-unit building	Active Building Permit
2	Multi-Family Development	5610 Camellia Ave.	62-unit building	Active Building Permit
3	Multi-Family Development	5645 Farmdale Ave.	44-unit building	Active Building Permit
4	Multi-Family Development	11433 Albers St.	59-unit building	Active Building Permit
5	Mixed-Use Development	11405 Chandler Blvd.	Mixed-use building with residential and commercial components (size unknown).	Active Building Permit
6	Mixed-Use Development	5530 Lankershim Blvd.	15-acre joint development at the North Hollywood Metro Station. Includes 1,275-1,625 residential units (275-425 affordable units), 125,000-150,000 sq. ft. of retail, and 300,000-400,000 sq. ft. of office space	Active Project Submission
7	Mixed-Use Development	11311 Camarillo St.	Mixed-use building (size unknown)	Active Building Permit
9	Multi-Family Development	11262 Otsego St.	49-unit building	Active Building Permit
10	Multi-Family Development	11241 Otsego St.	42-unit building	Active Building Permit
11	Multi-Family Development	11246 Otsego St.	70-unit building	Active Building Permit
12	Mixed-Use Development	5101 Lankershim Blvd.	297 units in a mixed-use housing complex	Active Building Permit
13	Multi-Family Development	5630 Fair Ave.	15-unit building	Active Building Permit

Map ID	Project Name	Location	Description	Status
14	Multi-Family Development	5550 Bonner Ave.	48-unit building	Active Building Permit
15	Commercial Development	11135 Burbank Blvd.	4-story hotel with 70 guestrooms	Active Building Permit
16	Commercial Development	11115 McCormick St.	Apartment/Office building (size unknown)	Active Building Permit
17	Multi-Family Development	5536 Fulcher Ave.	36-unit building	Active Building Permit
18	Multi-Family Development	11111 Cumpston St.	41-unit building	Active Building Permit
19	Multi-Family Development	11050 Hartsook St.	48-unit building	Active Building Permit
20	Multi-Family Development	5525 Case Ave.	98-unit building	Active Building Permit
21	Multi-Family Development	11036 Moorpark St.	96-unit building	Active Building Permit
22	Multi-Family Development	11011 Otsego St.	144-unit building	Active Building Permit
23	Multi-Family Development	10925 Hartsook St.	42-unit building	Active Building Permit
24	Multi-Family Development	10812 Magnolia Blvd.	31-unit building	Active Building Permit
25	Multi-Family Development	5338 Cartwright Ave.	21-unit building	Active Building Permit
26	Multi-Family Development	5252 Willow Crest Ave.	25-unit building	Active Building Permit
PASADENA				
42	Mixed-Use Development	690 Orange Grove Blvd.	48-unit building with commercial space	Active Project Submission
43	Multi-Family Development	745 Orange Grove Blvd.	35-unit building	Active Project Submission
44	Mixed-Use Development	100 Walnut St.	Mixed-use planned development: office building, 93-unit apartment building, and a 139-unit building	Active Building Permit
45	Multi-Family Development	86 Fair Oaks Ave.	87-unit building with commercial space	Active Project Submission
46	Commercial Development	190 Marengo Ave.	7-story hotel with 200 guestrooms	Active Project Submission

Map ID	Project Name	Location	Description	Status
47	Multi-Family Development	39 Los Robles Ave.	Residential units above commercial space (size unknown)	Active Building Permit
48	Mixed-Use Development	178 Euclid Ave.	42-unit building with 940 sq. ft. of office space	Active Building Permit
49	Multi-Family Development	380 Cordova St.	48-unit building	Active Building Permit
50	Mixed-Use Development	170 Euclid Ave.	42-unit building with 10,000 sq. ft. of commercial space	Active Project Submission
51	Multi-Family Development	399 Del Mar Blvd.	55-unit building	Active Building Permit
52	Multi-Family Development	253 Los Robles Ave.	92-unit building	Active Project Submission
53	Mixed-Use Development	171 Los Robles Ave.	8-unit building	Active Project Submission
54	Commercial Development	98 Los Robles Ave.	school of medicine building	Active Building Permit
55	Multi-Family Development	530 Union St.	55-unit building with retail space	Active Building Permit
56	Multi-Family Development	119 Madison Ave.	81-unit building	Active Building Permit
57	Multi-Family Development	289 El Molino Ave.	105-unit building	Active Building Permit
58	Multi-Family Development	99 El Molino Ave.	40-unit building	Active Building Permit
59	Commercial Development	711 Walnut St.	Mixed-use building with condominiums, commercial space, food facility, parking structure (size unknown)	Active Building Permit
60	Commercial Development	737 Walnut St.	42-unit building with commercial space	Active Project Submission
61	Mixed-Use Development	740 Green St.	273-unit building	Active Project Submission
62	Mixed-Use Development	83 Lake Ave.	54-unit building with office space	Active Project Submission
63	Multi-Family Development	231 Hill Ave.	59-unit building	Active Project Submission

SOURCE: Terry A. Hayes Associates Inc., 2020.

North San Fernando Valley (SFV) Bus Rapid Transit (BRT) Project. The North SFV BRT Project is a proposed new 18-mile BRT line that is intended to serve the portions of the San Fernando Valley that are north of the Metro G Line (Orange) service area. The project would provide a new, high-quality bus service between the communities of Chatsworth to the west and North Hollywood to the east. The project would enhance existing bus service and increase transit system connectivity.

Joint Development - North Hollywood Station Project. The Joint Development - North Hollywood Station project would construct facilities at the North Hollywood B/G Line (Red/Orange) Station that would be shared by the Proposed Project. The project has been identified in the Measure M Expenditure Plan, with a projected opening date between Fiscal Year 2023-25 and $180 million of funding.

NextGen Bus Plan. In January 2018, Metro began the NextGen Bus Plan aimed at reimagining the bus network to be more relevant, reflective of, and attractive to the diverse customer needs within Los Angeles County. The NextGen Bus Plan will realign Metro's bus network based upon data of existing ridership and adjust bus service routes and schedules to improve the overall network. The Proposed Project would be included in the Plan and replace some select bus services in the region. The NextGen Bus Plan is anticipated to begin implementation in the beginning of 2021.

East SFV Light Rail Transit (LRT) Project. The East SFV LRT Project will be a 9-mile LRT line that will extend north from the Van Nuys Metro G Line (Orange) station to the Sylmar/San Fernando Metrolink Station. Light rail trains will operate in the median of Van Nuys Boulevard for 6.7 miles to San Fernando Road. From San Fernando Road, the trains will transition onto the existing railroad right-of-way that's adjacent to San Fernando Road, which it will share with Metrolink for 2.5 miles to the Sylmar/San Fernando Metrolink Station. The project includes 14 at-grade stations. The Draft EIR/Environmental Impact Statement (EIR/EIS) was published in August 2017 and the Final EIR/EIS is currently being prepared by Metro.

There is no existing cumulative impact related to mineral resources. The Proposed Project would not result in impacts to mineral resources. There is no potential for the Proposed Project to contribute to a cumulative impact.

8. References

California Department of Conservation, *Generalized Mineral Land Classification Map of Los Angeles County – South Half*, 1994,ftp://ftp.conservation.ca.gov/pub/dmg/pubs/sr/SR_143/PartIII/SR_143_partIII_Text.pdf, accessed June 12, 2019.

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City of Burbank, *Burbank 2035 General Plan*, February 19, 2013, https://www.burbankca.gov/home/showdocument?id=23448, accessed June 12, 2019.

9. List of Preparers

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