3.2 Transportation

3.2.1 Introduction

Section 3.2, Transportation, of the *Burbank to Los Angeles Project Section Draft Environmental Impact Report/Environmental Impact Statement* analyzes the potential impacts of the No Project Alternative and the High-Speed Rail (HSR) Build Alternative. The discussion of California Environmental Quality Act (CEQA) impacts reflects California's shift in transportation impact analysis away from a focus on automobile delay (most commonly analyzed in terms of level-of-service [LOS]), to a focus on vehicle miles traveled (VMT). This shift is intended to promote reduction in greenhouse gas emissions from transportation, development of multimodal transportation networks, and diversity of land uses. The discussion of National Environmental Policy Act (NEPA) impacts focuses on LOS.

Transportation

Because the implementation of a high-speed rail project is a major capital investment, it is important to identify how the High-Speed Rail Build Alternative would improve mobility in the resource study area compared to the No Project Alternative. This section presents an impacts analysis of the traffic conditions in the resource study area.

This section also describes and analyzes impact avoidance and minimization features (IAMF) relevant to transportation that the Authority and the Federal Railroad Administration (FRA) have incorporated into the HSR Build Alternative to avoid, minimize, or reduce these impacts. Where applicable, mitigation measures (MM) are proposed to further reduce, compensate for, or offset impacts of the HSR Build Alternative. This section also defines the transportation systems within the region and describes the affected environment in the resource study area (RSA).

The *Burbank to Los Angeles Project Section Transportation Technical Report* (California High-Speed Rail Authority [Authority] 2019) provides technical details on transportation impacts. Additional details on transportation are provided in the following appendices in Volume 2 of this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS):

- Appendix 2-A, Roadway Crossings
- Appendix 2-B, Impact Avoidance and Minimization Features
- Appendix 3.1-B, Regional and Local Policy Inventory
- Appendix 3.2-A, Vehicle Miles Traveled Methodology
- Appendix 3.2-B Traffic Mitigation Locations

Six other resource sections in this Draft EIR/EIS provide additional information related to transportation:

- **Section 3.3, Air Quality**—Analyzes construction impacts of the HSR Build Alternative on air quality as well as long-term regional benefits from operation of the HSR Build Alternative.
- **Section 3.4, Noise and Vibration**—Analyzes construction and operations impacts of the HSR Build Alternative on community facilities related to noise and vibration.
- **Section 3.6, Public Utilities and Energy**—Examines operations impacts related to energy consumption as a result of VMT during operation of the HSR Build Alternative.
- **Section 3.11, Safety and Security**—Analyzes construction and operations impacts of the HSR Build Alternative related to safety and security potentially associated with traffic and circulation.
- **Section 3.13, Station Planning, Land Use, and Development**—Evaluates construction and operations impacts of the HSR Build Alternative on local growth, station planning, and land use.
- **Section 3.19, Cumulative Impacts**—Identifies construction and operations impacts of the HSR Build Alternative in combination with other past, present, and reasonably foreseeable projects.

This section and its supporting technical report include discussion and analysis based on automobile delay/congestion based on LOS and its related volume-to-capacity (V/C) ratio metric.

California has adopted a policy through Senate Bill (SB) 743 and associated regulations (CEQA Guidelines 15064.3) that delay and congestion increases, by themselves, are not significant impacts on the environment under CEQA. However, delay/congestion increases caused by a project can lead to significant secondary impacts on the environment, such as air quality and noise impacts. Accordingly, this document retains discussion and analysis of LOS and V/C changes the project might cause as an analytical input into evaluating the potential for significant environmental impacts in these other areas. In contrast, this analysis considers traffic congestion to be an environmental effect under NEPA as described in Section 3.2.4.3, Methods for Evaluating Impacts.

3.2.1.1 Definition of Resources

The following definitions are relevant to the transportation facilities analyzed in this Draft EIR/EIS:

- **Major roadways** and corridor traffic volumes refer to the network of roads, roadway intersections, and corridor traffic in the transportation RSA. All roadways are classified according to their primary functions:
  - Freeway: A major roadway with controlled access, devoted exclusively to traffic movement, mainly of a through or regional nature
  - Expressway: A major roadway with a mix of controlled and uncontrolled access, linking freeways with arterials and providing access to major destinations
  - Arterial: A major roadway mainly taking traffic to and from expressways and freeways and providing access to major destinations as well as adjacent properties
  - Collector: A roadway that collects and distributes traffic to and from arterials and provides access primarily to and from adjacent properties
  - Local: The lowest category of roadway, providing access to and from individual properties and distributing local traffic to and from the higher roadway classifications, particularly collector streets
- **Pedestrian and Bicycle Access** refers to pedestrian access routes and bicycle access routes in the transportation RSA.
- **Aviation** refers to the air transportation network in California.
- **Emergency Access and Property Access** refer to emergency facilities and properties and their associated road networks in the transportation RSA.
- **Transit Conditions** refer to the regional network of passenger rail and bus transportation.
- **Freight Rail Conditions** refer to the regional network of freight railways.

3.2.2 Laws, Regulations, and Orders

This section describes the federal, state, and local laws, regulations, orders, and plans that are relevant to transportation.

3.2.2.1 Federal

The California Department of Transportation (Caltrans) and the California Transportation Commission are responsible for producing a long-range transportation plan for the planning of statewide facilities. Caltrans and the California Transportation Commission are also responsible for assembling a statewide short-term improvement plan called the Federal Statewide Transportation Improvement Program (STIP). Federal law requires the State of California to update the STIP at least once every 4 years. The federal STIP compiles all Federal Highway Administration and Federal Transit Administration projects that have been programmed in the state using federal funds.

In accordance with the Federal Passenger Rail Investment and Improvement Act of 2008, the State of California adopted the *2018 California State Rail Plan* in September 2018. Federal law requires the State of California to update its California State Rail Plan every 5 years as a condition of eligibility for federal funding for HSR and intercity passenger rail programs.

Federal law does not directly provide criteria for the analysis of federal-aid eligible roadways and highways. However, certain conditions must be met in order to maintain the funding eligibility of facilities. Federal agencies such as Federal Highway Administration, Federal Transit Administration, and FRA are also responsible for implementing certain federal environmental protection laws, including NEPA.

Federal Railroad Administration, Procedures for Considering Environmental Impacts (64 Federal Register 28545)

On May 26, 1999, the FRA released *Procedures for Considering Environmental Impacts* (FRA 1999). These FRA procedures supplement the Council on Environmental Quality Regulations (40 Code of Federal Regulations Part 1500 et seq.) and describe the FRA's process for assessing the environmental impacts of actions and legislation proposed by the agency and for the preparation of associated documents (42 U.S. Code 4321 et seq.). The FRA *Procedures for Considering Environmental Impacts* states that "the EIS should identify any significant changes likely to occur in the natural environment and in the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by U.S. Department of Transportation Order 5610.4." These FRA procedures state that an EIS should consider possible impacts on transportation.

3.2.2.2 State

Designated State Route (SR) and Interstate (I) highway facilities are operated and maintained under the jurisdiction of Caltrans, except where management of the facility has been delegated to the county transportation authority. Caltrans and the California Transportation Commission are responsible for producing a long-range transportation plan for the planning of statewide facilities. Caltrans and the California Transportation Commission are also responsible under California law for assembling a statewide short-term improvement plan called the STIP. California law requires the State of California to update and adopt this document every 2 years. The STIP Program (which is often prepared prior to the federal STIP document) compiles all capacity-increasing and operations-improving projects related to rail, mass transportation, local highways, and the state highway system programmed through the state using state or federal funds, thus including the HSR project.

California Government Code Section 65080

The State of California requires each transportation planning agency to prepare and adopt a regional transportation plan (RTP) directed at achieving a coordinated and balanced regional transportation system.

California Streets and Highways Code (Section 1 et seq.)

The code provides standards for administration of the statewide streets and highways system. Designated state route and interstate highway facilities are under the jurisdiction of Caltrans, except where management of the facility has been delegated the county transportation authority.

Senate Bill 743 and CEQA Guidelines Section 15064.3

SB 743, codified in Public Resources Code Section 21099, created a shift in transportation impact analysis under CEQA from a focus on automobile delay, as measured by LOS and similar metrics, toward a focus on reducing VMT and greenhouse gas emissions. The Legislature required the Governor's Office of Planning and Research (OPR) to propose new criteria for determining the significance of transportation. The statute states that upon certification of the new criteria, automobile delay (as described solely by LOS or similar measures of vehicular capacity or traffic congestion) shall not be considered a significant impact on the environment under CEQA except in any locations specifically identified in the new criteria. Lead agencies are still required to

analyze a project's potentially significant transportation impacts related to air quality, noise, safety, and other resource areas that may be associated with transportation. The statute states that the adequacy of parking for a project shall not support a finding of significance.

The new criteria, contained in CEQA Guidelines Section 15064.3, were certified and adopted in December 2018. Section 15064.3 provides that VMT is the most appropriate metric to assess transportation impacts; with limited exceptions (applicable to roadway capacity projects, which this project is not), a project's effect on automobile delay does not constitute a significant environmental impact. Other relevant considerations may include the project's effects on transit and nonmotorized travel. Section 15064.3 further provides that transportation projects that reduce VMT should be presumed to cause a less than significant impact. A lead agency can elect to be governed by Section 15064.3 immediately (which this Authority has done) and is required to shift to a VMT metric by July 1, 2020.

OPR has provided a technical advisory on evaluating transportation impacts in CEQA (OPR 2018a) and further information related to the change in the Guidelines in its 2018 Statement of Reasons supporting the guideline change (OPR 2018b), and related to LOS and VMT on its CEQA Update website (OPR 2018c).

California Streets and Highways Code Section 890

California law defines bicycle facilities, as presented in Table 3.2-1.

Table 3.2-1 California Statutory Bicycle Facility Definitions

Facility	Statutory Definition
Class I (Bike Path or Shared Use Path)	Provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.
Class II (Bike Lane)	Provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.
Class III (Bike Route)	Provide a right-of-way on-street or off-street, designated by signs or permanent markings and shared with pedestrians and motorists.
Class IV (Cycle Track or Separated Bikeways)	Promote active transportation and provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which is separated from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, and on-street parking.

Source: California Streets and Highways Code, Section 890

California Transportation Plan 2040

This plan is a core document that ties together several internal and external interrelated plans and programs to help define and plan transportation in California. It exists within the larger context of long-range transportation planning that considers other relevant local, regional, and statewide plans and programs that may affect the transportation system. The plan integrates findings and recommendations from key documents from various statewide programs. The plan identifies a sustainable transportation system by pulling together the following statewide long-range modal plans to envision the future system:

- Interregional Transportation Strategic Plan
- California Freight Mobility Plan
- California State Rail Plan
- California High-Speed Rail Business Plan
- Statewide Transit Strategic Plan
- California Aviation System Plan
- Bicycle and Pedestrian Plan

California State Rail Plan

The California State Rail Plan provides the State's vision of an integrated rail system providing more comprehensive and coordinated service for both passenger rail and freight rail services. In accordance with the Federal Rail Investment and Improvement Act of 2008, the State of California adopted the *California State Rail Plan* in 2013 (Caltrans 2013) and released a draft *2018 California State Rail Plan* in 2017, which emphasizes HSR as a foundational component of the statewide integrated rail transportation network. The *Final State Rail Plan* was adopted in September 2018 (Caltrans 2018).

3.2.2.3 Regional and Local

Table 3.2-2 lists county and city general plan goals, policies, and ordinances relevant to the HSR Build Alternative and transportation issues.

Table 3.2-2 Regional and Local Plans and Policies

Policy Title	Summary
Southern California	
SCAG RTP/SCS (2016)	The SCAG RTP/SCS is a long-range metropolitan transportation plan that is developed and updated by SCAG every 4 years. The RTP/SCS provides a vision for transportation investments throughout the region. Using growth forecasts and economic trends that project over a 20- to 25-year period, the RTP/SCS considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address the region's mobility needs. Goals include: • Developing long-range regional plans and strategies that provide for efficient movement of people, goods, and information; enhance economic growth and international trade; and improve the environment and quality of life • Providing quality information service and analysis for the region • Using an inclusive decision-making process that resolves conflicts and encourages trust • Creating an educational and work environment that cultivates creativity, initiative, and opportunity • Strategies include: • Expanding the region's high-speed and commuter rail systems • Establishing rail connections to the region's airports to improve accessibility and connectivity • Reducing the impact of air passenger trips on ground transportation congestion, including continuing to support regional and inter-regional projects that facilitate airport ground access (e.g., HSR) • Investing financially in passenger rail and maintaining the commitments in the 2012 RTP/SCS, including Phase 1 of the California HSR System and the Southern California HSR Memorandum of Understanding, which identifies a candidate project list to improve the Metrolink system and the LOSSAN rail corridor • Reducing the impact of air passenger trips on ground transportation congestion, including continuing to support regional and inter-regional projects that facilitate airport ground access (e.g., HSR) • Support the development of an HSR station on Hollywood Way and provide convenient access between the station and the airport

Policy Title	Summary
SCAG FTIP (2019)	The SCAG FTIP is a capital listing of all transportation projects proposed over a 6-year period for the SCAG region. The projects include highway improvements; transit, rail, and bus facilities; high-occupancy vehicle lanes; signal synchronization; intersection improvements; and freeway ramps. In the SCAG region, a biennial FTIP update is produced on an even-year cycle. The FTIP is prepared to implement projects and programs listed in the RTP and is developed in compliance with state and federal requirements. County transportation commissions have the responsibility under state law of proposing county projects—using the current RTP's policies, programs, and projects as a guide—from among submittals by cities and local agencies. The locally prioritized lists of projects are forwarded to SCAG for review. From this list, SCAG develops the FTIP based on consistency with the current RTP, intercounty connectivity, financial constraint, and conformity satisfaction. The goals of the FTIP are to: • Document all projects for the following 6 years that will receive federal funds or are subject to a federally required action • Document all projects for the following 6 years that are defined by SCAG as regionally significant and indicate whether or not they require federal funding
SCAG Sustainability Planning Grant Program/Compass Blueprint Plan (2005)	SCAG's *Sustainability Planning Grant Program/Compass Blueprint Plan* was established as an innovative vehicle for promoting local jurisdictional efforts to test local planning tools. Since the plan started in 2005, 202 projects have been completed through the program. The Sustainability Planning Grants Program provides direct technical assistance to SCAG member jurisdictions to complete planning and policy efforts that enable implementation of the regional SCS. Goals include: • Highlighting the value that effective growth planning can bring to regional partners and regions as a whole • Supporting projects that promote integrated land use, active transportation, and green region planning
SCAG Final 2008 Regional Comprehensive Plan (2008)	The *Regional Comprehensive Plan* is a problem-solving guidance document that directly responds to Southern California's challenges according to the annual State of the Region report card. It responds to SCAG's Regional Council directive in the 2002 Strategic Plan to develop a holistic, strategic plan for defining and solving California's interrelated housing, traffic, water, air quality, and other regional challenges. The Regional Comprehensive Plan sets a path forward in two key ways. First, it ties together SCAG's role in transportation, land use, and air quality planning and demonstrates the need to do more than is being done today. Second, it recommends key roles and responsibilities for public- and private-sector stakeholders and invites them to implement reasonable policies that are within their control. The result is a proactive, unconstrained, big-picture advisory plan that envisions what a livable, sustainable, successful region could look like and challenges stakeholders to tackle difficult issues. Goals include: • Improving mobility for all residents • Fostering livability in all communities • Enabling prosperity for all people • Promoting sustainability for future generations

Policy Title	Summary
Regional Transportation Planning Agency (State)	
Metro RTIP (2013)	The RTIP is a federally and state-mandated program document that includes information concerning local highway, state highway, and transit projects and services for the following 6 years. It is revised in its entirety every 2 years and is open for amendment submissions once per month. All transportation projects must be listed in the RTIP to be eligible for federal and state funding, federal and state permits, and review of EIRs and EISs. For federal funds to be released to listed project sponsors, the RTIP must be reviewed for air quality conformity with federal and state laws, as well as SCAG, Caltrans, and USDOT regulations. Upon approval, the RTIP is incorporated into the Transportation Improvement Program by SCAG, the Federal Statewide Transportation Improvement Program prepared by Caltrans, and the FTIP approved by the USDOT. The goals of the RTIP are to: • Document all projects for the following 6 years that will receive federal funds or are subject to a federally required action • Document all projects for the following 6 years that are defined by SCAG as regionally significant and indicate whether or not they require federal funding
Metro LRTP (2009)	Metro is currently updating the LRTP adopted in 2009. The LRTP provides a visionary blueprint for transportation improvements for Los Angeles County and input into the development of the RTP. The LRTP provides both a financially constrained plan, which takes into account funding limitations, and an unconstrained plan, which contains a vast array of potential improvements should additional funding sources become available. General goals of the LRTP are to: • Assess the performance of the transportation system over a 20+ year horizon • Identify the projects that best address the needs of the system based on expected population, housing, and employment growth, while taking forecast financial assumptions into account at the same time
Metro SRTP (2014a)	The SRTP is a focused 10-year plan that guides actions through 2024. The plan advances the long-term goals outlined in the 2009 LRTP, a 30-year vision for addressing growth in Los Angeles County. The goal of the plan is to monitor progress of projects and programs to ensure the system moves people and goods safely
Metro Los Angeles County CMP (2010)	Metro's Los Angeles County CMP is intended to address the effect of local growth on the regional transportation system and to comply with the statutory requirements of the CMP, including monitoring LOS on the CMP highway and roadway network, measuring frequency and routing of public transit, and implementing the Transportation Demand Management and Land Use Analysis. Goals include: • Providing program ordinances • Helping local jurisdictions meet their responsibilities under the CMP • Establishing conditions for significant impact analysis of CMP monitoring for arterial intersections (where projects add 50 or more trips during either the a.m. or p.m. weekday peak hours of adjacent street traffic) • Establishing conditions for significant impact analysis of CMP monitoring for freeway mainlines (where projects add 150 or more trips during either the a.m. or p.m. weekday peak hours)

Policy Title	Summary
Metro First-Last Mile Strategic Plan (2014)	The *First-Last Mile Strategic Plan* provides a guideline that outlines specific infrastructure improvement strategies designed to facilitate easy, safe, and efficient access to the Metro system. The strategic plan coincides with Metro's plans to develop a world-class rail system with stations that will be a short distance (3 miles or less) from the homes of 7.8 million Los Angeles County residents. Goals include: • Expanding the reach of transit through infrastructure improvements • Maximizing multimodal benefits and efficiencies • Building upon the RTP/SCS and Countywide Sustainable Planning Policy (multimodal, green, equitable, and smart)
Metro Complete Streets Policy (2014)	The *Complete Streets Policy* was developed to establish a standard of excellence for multimodal design. The term "Complete Streets" describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, users and operators of public transit, bicyclists, persons with disabilities, seniors, children, motorists, users of green modes, and movers of commercial goods. Goals include: • Maximizing the benefit of transit service and improving access to public transit by making it convenient, safe, and attractive for users • Maximizing multimodal benefits and efficiencies • Improving safety for all users on the transportation network • Facilitating multijurisdictional coordination and leveraging partnerships and incentive programs to achieve a "complete" and integrated transportation system that serves all users • Establishing active transportation improvements as integral elements of the countywide transportation system • Fostering healthy, equitable, and economically vibrant communities where all residents have greater mobility choices
Metro Bicycle Transportation Strategic Plan (2006)	The *Bicycle Transportation Strategic Plan* was prepared to improve mobility in the region through the use of bicycles. The plan is designed for the use of cities, Los Angeles County, and transit agencies in planning bicycle facilities around transit and setting priorities that contribute to regional improvements. The plan includes: • A listing of 167 identified "bike-transit hubs" in the county • Audit procedures for evaluating obstacles to bicycle access • Nonmotorized "best practices" in a toolbox of design measures • Gaps in the interjurisdictional bikeway network • Two prototype Bike-Transit Hub Access Plans in different geographical and demographic regions in the county
Los Angeles County	
Los Angeles County General Plan 2035 (2015)	Los Angeles County's jurisdiction for planning purposes is generally the unincorporated areas of the county. The general plan has no established criteria of significance for traffic operations. The general plan establishes policies and goals to: • Ensure the efficient movement of people and goods • Promote compatibility between transportation modes and land use • Reduce the adverse air quality impacts of transportation

Policy Title	Summary
Los Angeles County Traffic Impact Analysis Guidelines (1997)	The *Los Angeles County Traffic Impact Analysis Guidelines* provides detailed guidance on acceptable traffic- and transportation-related operations. Goals include: • Establishing procedures to ensure consistency of analysis, adequacy of information presented, and timely review by county staff • Defining significant transportation impacts as a difference in intersection capacity utilization LOS of ≥ 0.04 for LOS C, ≥ 0.02 for LOS D, and ≥ 0.01 for LOS E and F • Establishing that all CMP intersections where at least 50 trips during either peak hour will be added must be studied (150 trips per peak hour for freeway mainlines)
Los Angeles County Bicycle Master Plan (2012)	The *Los Angeles County Bicycle Master Plan*, a component of the County's General Plan Mobility Element, proposes a bicycle system that would make bicycling more accessible to the public by providing approximately 695 miles of new bikeways throughout Los Angeles County.
City of Burbank	
City of Burbank 2035 General Plan (2014)	The General Plan establishes policies and goals to ensure the efficient movement of people and goods, promote compatibility between transportation modes and land uses, and reduce the adverse air quality effects of transportation. Significant transportation effects are defined by the City of Burbank traffic study guidelines as a difference in intersection volume-to-capacity ratio and LOS of ≥ 0.02 for LOS D, ≥ 0.01 for LOS E, and ≥ 0.005 for LOS F. Unsignalized intersection impacts are defined as 2 percent, 1 percent, and five or more project trips under the same LOS values. General policies in the plan include: • Improve Burbank's alternative transportation access to local and regional destinations through land use decisions that support multimodal transportation • Require new projects to contribute to the city's transit or nonmotorized transportation network in proportion to its expected traffic generation • Design street improvements so they preserve opportunities to maintain or expand bicycle, pedestrian, and transit systems • Improve transit connections with nearby communities and connections to downtown Los Angeles, West San Fernando Valley, Hollywood, and the Westside • Implement the *Burbank Bicycle Master Plan* by maintaining and expanding the bicycle network, providing end-of-trip facilities, improving bicycle-transit integration, encouraging bicycle use, and making bicycling safer • Provide bicycle connections to major employment centers, shopping districts, residential areas, and transit connections
City of Burbank Bicycle Master Plan (2009)	The *Burbank Bicycle Master Plan* serves to guide both the development and maintenance of a bicycle network and support facilities for a 25-year planning horizon. The policies and programs defined in the plan address bikeway facility planning, community involvement, use of existing resources, facility design, multimodal integration, safety, education, related programs, implementation, maintenance, and funding.
City of Glendale	
City of Glendale General Plan (1998)	• The *City of Glendale General Plan* establishes policies and goals to ensure the efficient movement of people and goods, promote compatibility between transportation modes and land use, and reduce the adverse air quality effects of transportation. Significant transportation effects are defined by the City of Glendale traffic study guidelines as a difference in intersection volume-to-capacity ratio and LOS of ≥ 0.02 at LOS D, E, or F. General goals of the plan include balancing land use/zoning with roadway capacity by establishing congestion thresholds and avoiding unacceptable levels of congestion from future development.

Policy Title	Summary
City of Glendale Bicycle Transportation Plan (2012)	• The *Glendale Bicycle Transportation Plan* contains programs and policies to better accommodate and encourage bicycling in Glendale. The planned improvements include new bikeways, bicycle parking, and links to transit.
Glendale Transit Plan Downtown Mobility Study (2007)	• The *Downtown Mobility Study* was adopted by the Glendale City Council in March 2007 and complements the *Downtown Specific Plan* approved by the City Council in November 2006. The Mobility Study strives to accommodate new growth and enhance mobility. For transit connections, the study recommended new seamless connections between regional and local services, including the incorporation of a downtown circulator route that would connect the Glendale Transportation Center (now the Larry Zarian Transportation Center) to proposed new east-west transit services in north Glendale.
City of Los Angeles	
City of Los Angeles General Plan/Mobility Plan 2035 (2016)	The *City of Los Angeles General Plan* is a dynamic document consisting of several elements, including the Land Use Element. This part of the General Plan consists of the plans for each of the city's 35 community plan areas. Recently adopted elements are the *Mobility Plan 2035*, the transportation element of the General Plan, and the *Plan for a Healthy Los Angeles*, a new Health and Wellness Element of the General Plan. Mobility Plan 2035 provides the policy foundation for achieving a transportation system that balances the needs of all road users. The plan has no established criteria of significance for traffic operations. While LOS D is the desired minimum, significance is determined on a case-by-case basis. *Mobility Plan 2035* includes goals that are equal in weight and define the City's high-level mobility priorities: • Safety first • Access for all Angelenos • World-class infrastructure • Collaboration, communication, and informed choices • Clean environments and healthy communities
City of Los Angeles 2010 Bicycle Plan (2011)	The *2010 Bicycle Plan* is part of the City of Los Angeles' General Plan Transportation Element. The City of Los Angeles' *Mobility Plan 2035* proposed a potential Tier 2 bike lane along Riverside Drive.

Caltrans = California Department of Transportation
CAP = Climate Action Plan
CMP = Congestion Management Plan
EIR = environmental impact report
EIS = environmental impact study
FTIP = Federal Transportation Improvement Program
LOS = level-of-service
LOSSAN = Los Angeles-San Diego-San Luis Obispo
LRTP = Long-Range Transportation Plan
Metro = Los Angeles County Metropolitan Transportation Authority
RTP = Regional Transportation Plan
RTIP = Regional Transportation Improvement Program
SCAG = Southern California Association of Governments
SCS = Sustainable Communities Strategy
SRTP = Short-Range Transportation Plan
TOD = transit-oriented development
USDOT = U.S. Department of Transportation

Regional Transportation Plans

Region-scale planning for transportation infrastructure and programs, management of transport-related air quality impacts, and guidance for local land use decisions related to transportation are governed by a designated congestion management agency. The regional entity that is responsible for congestion management agency actions may be a council of governments, a county association of governments, a county or local transportation commission, a transportation or transit authority or agency or district, or a joint powers agency, depending on local agency preferences, population density (e.g., urban or rural counties or municipalities), and transportation purpose. Congestion management agencies are responsible for preparing metropolitan transportation plans, RTPs, and local transportation plans.

Applicable RTPs are discussed in Table 3.2-2.

County or Municipal General Plans or Community Plans

Counties and cities must prepare general plans with transportation policies and ordinances. The transportation (or circulation) element of the local comprehensive plan articulates the policies and priorities that govern the establishment of local transportation performance standards (such as LOS) and capital investment programs to achieve local transportation objectives. The transportation element also contains an inventory of primary facilities, presented in descriptive text, and a circulation diagram. General plans provide important context information for impact assessment.

Applicable county and city plans are discussed in Table 3.2-2.

Public Transportation Plans

Public transportation agencies must adopt plans that guide future service and facilities development.

Applicable transportation agency plans are discussed in Table 3.2-2.

Transportation Plans, Policies, and Programs for Nonmotorized Transportation

Both regional and local governments adopt plans for nonmotorized transportation to guide public investment in capital infrastructure and operational programs.

Applicable plans related to nonmotorized transportation are discussed in Table 3.2-2.

3.2.3 Consistency with Plans and Laws

As indicated in Section 3.1, Introduction, CEQA and NEPA regulations[1] require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws.

Federal and state laws, listed in Section 3.2.2.1 and Section 3.2.2.2, pertain to transportation. The Authority, as the federal lead agency and state lead agency proposing to construct and operate the HSR system, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction of the project. Therefore, there would be no inconsistencies between the HSR Build Alternative and these federal and state laws and regulations. The HSR system as a whole, including the Burbank to Los Angeles Project Section, is consistent with the *California Transportation Plan 2040* and the 2018 *California State Rail Plan*.

As a state agency, the Authority is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is consistent with land use and zoning regulations. A total of 13 plans and 35 policies were reviewed (see Appendix 3.1-B, Regional and Local Policy Consistency Analysis, which identifies all the plans and policies that were reviewed as part of this analysis). The HSR Build Alternative would be consistent with 31 policies and would be inconsistent with 4 policies.

The HSR Build Alternative would be inconsistent with provisions of the following regional and local policies and plans:

- **Los Angeles County Bicycle Master Plan—Goal 1, Policy 1.1:** The HSR Build Alternative would result in the conversion of land planned for the San Fernando Railroad Bike Path in the city of Glendale to rail right-of-way. As a result, this bicycle facility may not be built, which would change the benefits of the adopted bicycle plans.
- **Glendale Bicycle Master Plan—Policy 1:** The HSR Build Alternative would result in the conversion of land planned for the San Fernando Railroad Bike Path in the city of Glendale to rail right-of-way. As a result, this bicycle facility may not be built, which would change the

[1] NEPA regulations refer to the regulations issued by the Council for Environmental Quality located at 40 Code of Federal Regulations Title 40, Part 1500.

benefits of the adopted bicycle plan. Therefore, the HSR system may interfere with the completion of a bike network in Glendale.

- **Southern California Association of Governments, 2012–2035 RTP/SCS Active Transportation Chapter (2012)—Objective 2.1, Policies 2.1.1 and 2.1.2:** The HSR system would result in the conversion of land planned for the San Fernando Railroad Bike Path in the city of Glendale to rail right-of-way. As a result, this bicycle facility may not be built, which would change the benefits of the adopted bicycle plans. By converting land planned for this bike path to rail right-of-way, the HSR system may impede the goals of Policies 2.1.1 and 2.1.2, which aim to connect all cities in the Southern California Association of Governments (SCAG) region via bicycle facilities.

Although the HSR Build Alternative would be inconsistent with these specific provisions, it would expand the transportation options of the county and provide connections to existing transit services, which would expand the system to serve more of the county. The HSR system would also allow more people to travel by train and reduce automobile dependence. The HSR Build Alternative would ensure that areas around HSR stations provide effective street connections for all users of the transportation network. The HSR Build Alternative would also include grade separations, which would improve the safety of streets for pedestrians, bicyclists, and motor vehicle users.

Although implementation of the project would result in an increase in congestion on certain roadway segments and intersections, it would reduce regional VMT. The project would also support a shift to transit-oriented development in station areas to reduce reliance on the private automobile. The project would not address congestion through capacity improvements. It should also be noted that the county and each of the cities will become fully compliant with SB 743 by July 1, 2020, entailing a shift from LOS to VMT in their policies. Refer to Appendix 3.1-B for a complete consistency analysis of local plans and policies.

3.2.4 Methods for Evaluating Impacts

The following sections summarize the RSA and the methods used to analyze impacts on transportation. As summarized in Section 3.2.1, Introduction, six other sections provide additional information related to transportation: Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; Section 3.6, Public Utilities and Energy; Section 3.11, Safety and Security; Section 3.13, Station Planning, Land Use, and Development; and Section 3.19, Cumulative Impacts.

3.2.4.1 Definition of Resource Study Area

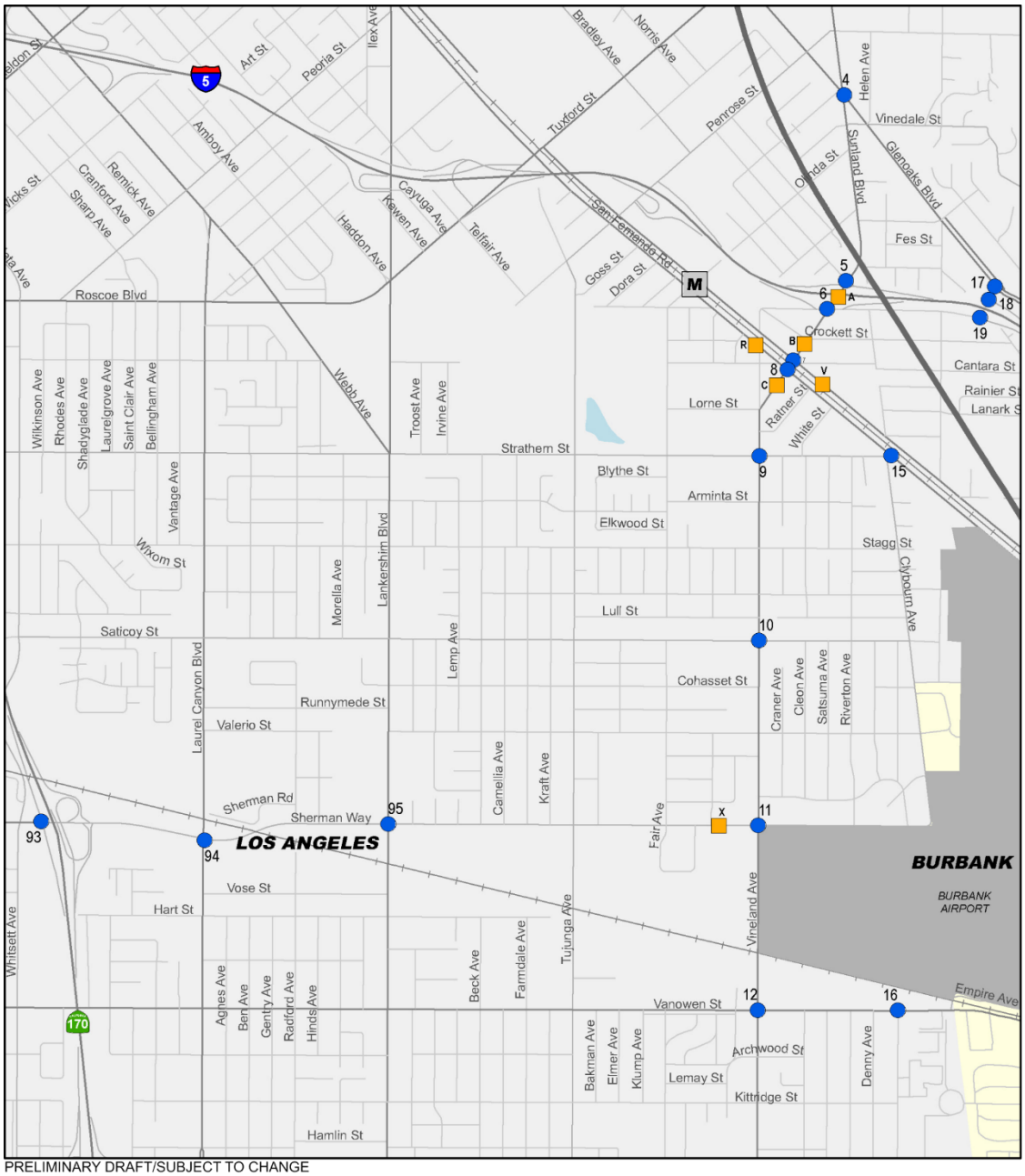
As defined in Section 3.1, Introduction, RSAs are the geographic boundary in which the Authority conducted environmental investigations specific to each resource topic. The RSA for impacts on transportation generally follows the alignment within the existing railroad corridor and includes the Burbank Airport Station area at the northern project footprint extent and the Los Angeles Union Station (LAUS) area at the southern extent. However, because the area of potential effects for transportation typically extend beyond the physical HSR Build Alternative improvements, the RSA is defined based on anticipated increased or decreased measures of effectiveness (e.g., delay or traffic density). The Authority selected intersections for its initial transportation analysis based on these guidelines and used the most recent available ridership and trip projections available when the research began. The final RSA was refined as the design, project footprint, and ridership and vehicle trip projections were updated.

Table 3.2-3 provides a general definition and boundary description for the RSA within the Burbank to Los Angeles Project Section, as shown on Figure 3.2-1 (Sheets 1 through 3). The RSA includes 243 study intersections and 37 study roadway segments. Figure 3.2-1 (Sheets 1 through 10) depicts the RSA and displays the study intersection numbers corresponding with Table 3.2-4.

Table 3.2-3 Definition of Resource Study Areas

General Definition	Resource Study Area Boundary and Definition
Direct Resource Study Area	Project footprint plus roadway segments, intersections, and freeway ramps that meet the following criteria: • Roadway segments that would be closed or grade-separated as a result of the HSR Build Alternative • If roadway closures are proposed, the most likely alternate routes that would be taken if the alternate routes are expected to have an increase of 50 or more vehicles in the peak hour • All major existing intersections that the HSR Build Alternative would expand, signalize, or physically reconfigure • All major new intersections that the HSR Build Alternative would create • Critical intersections of collector (or higher) facility types that would have an increase of 50 or more vehicles in the peak hour as a result of the HSR Build Alternative • Freeway ramps where the HSR Build Alternative would contribute 100 or more new trips

HSR = high-speed rail



PRELIMINARY DRAFT/SUBJECT TO CHANGE
SOURCE: Esri (2018); CHSRA (2/2020)

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

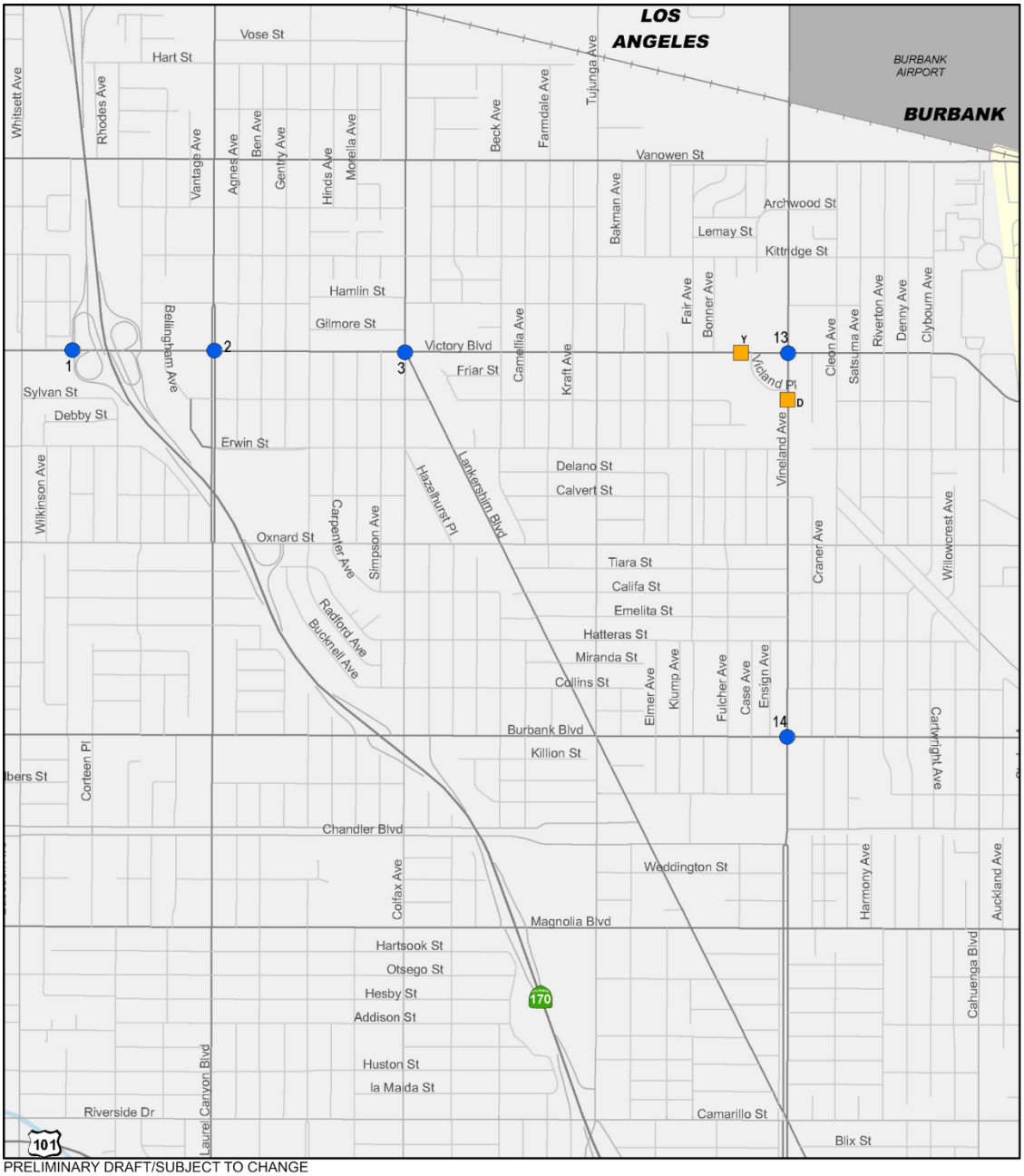
Figure 3.2-1 Transportation Resource Study Area

(Sheet 1 of 10)

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

(Sheet 2 of 10)



Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

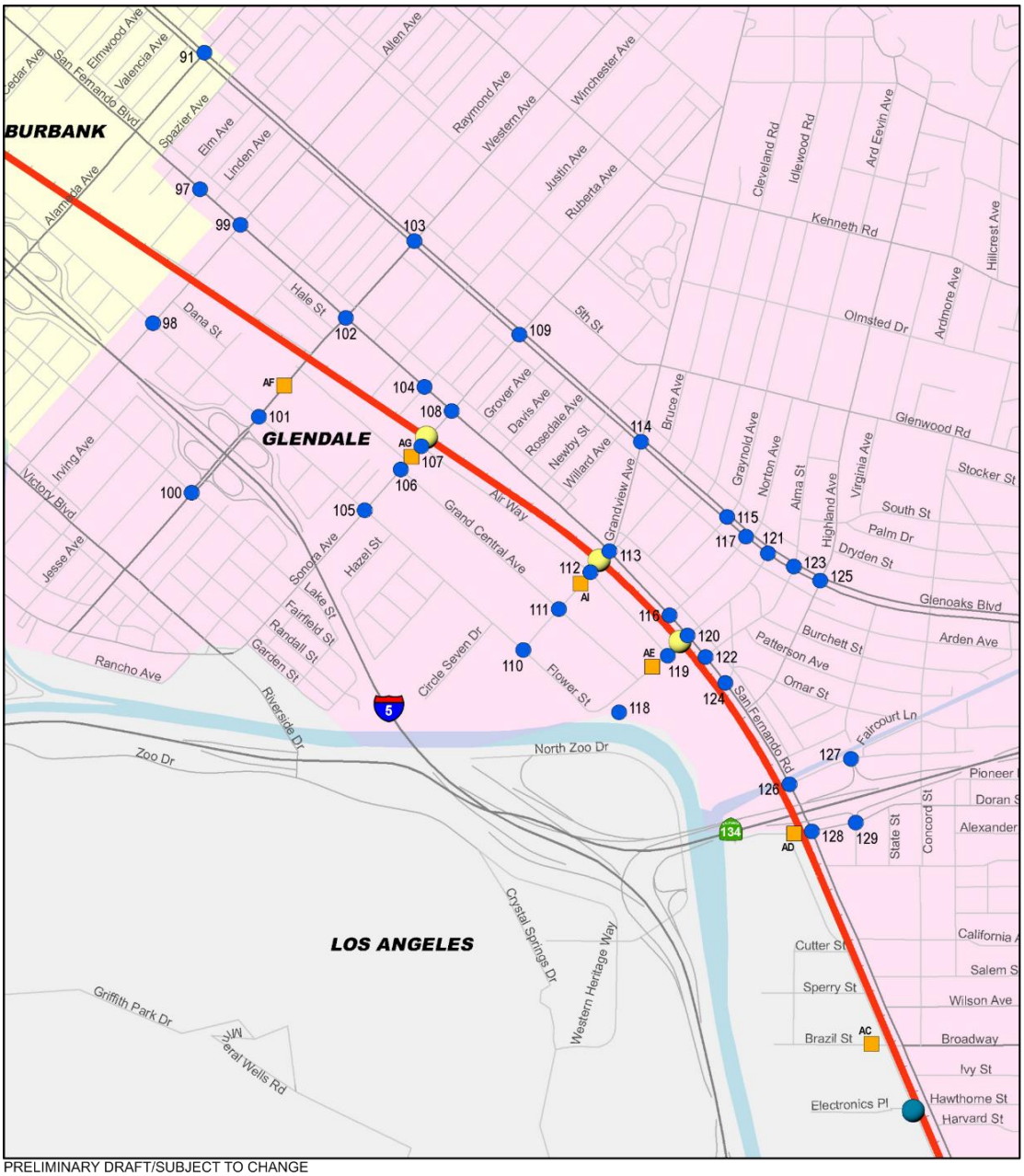
Figure 3.2-1 Transportation Resource Study Area

(Sheet 3 of 10)

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

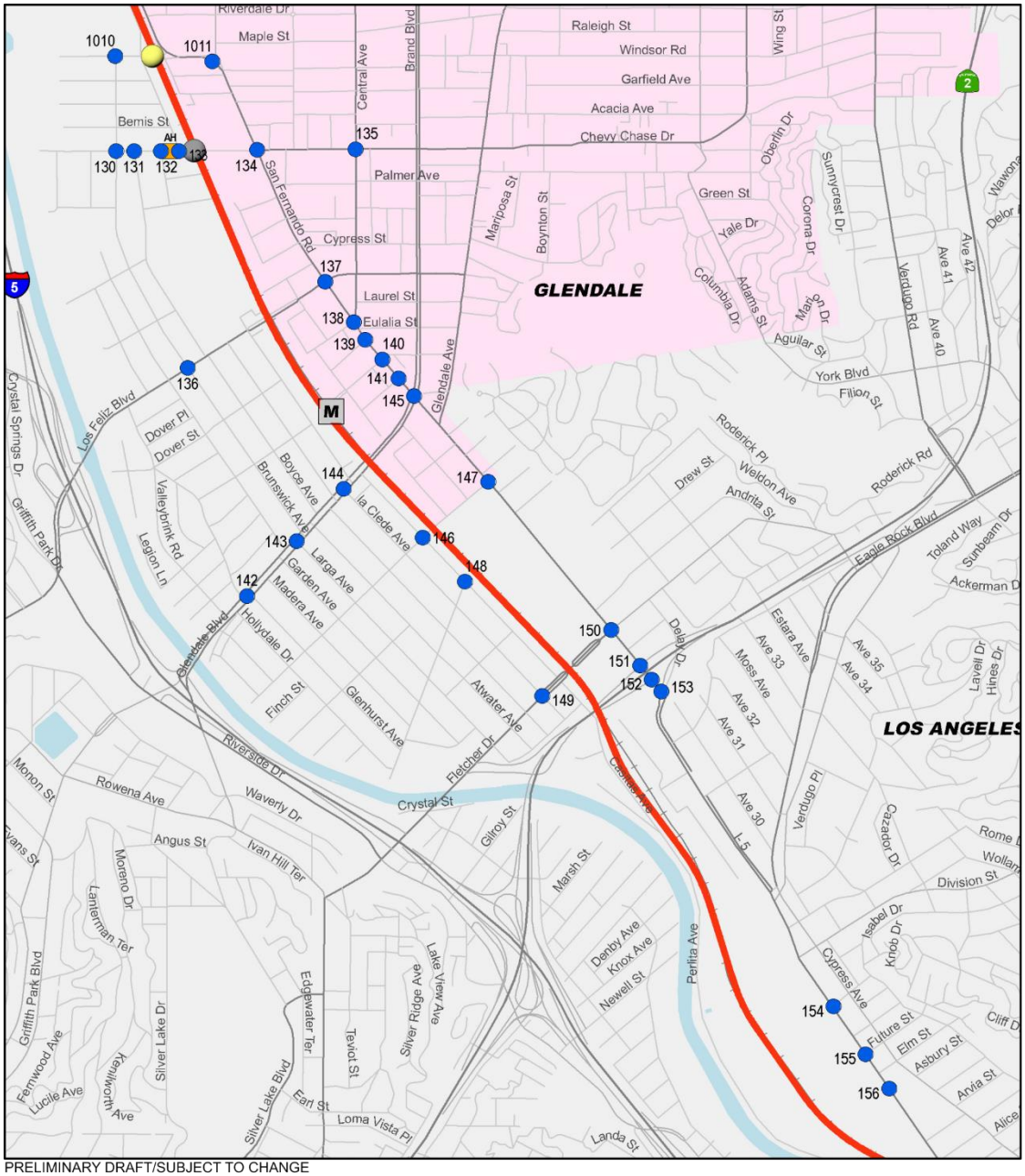
(Sheet 4 of 10)



Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

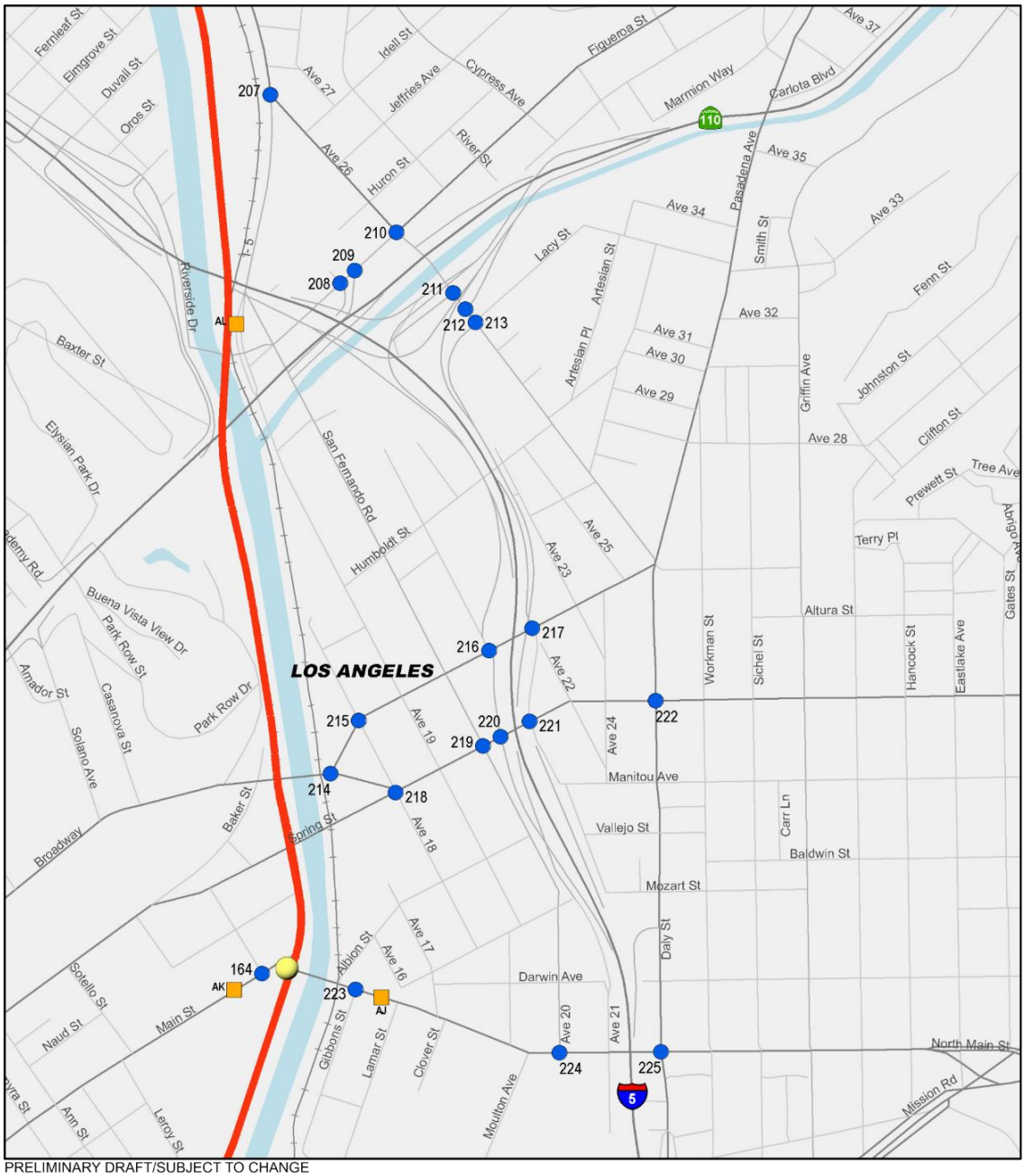
(Sheet 5 of 10)



Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

(Sheet 6 of 10)



PRELIMINARY DRAFT/SUBJECT TO CHANGE
SOURCE: Esri (2018); CHSRA (2/2020)

HSR Alignment
Study Intersection
Roadway Segment
Metrolink

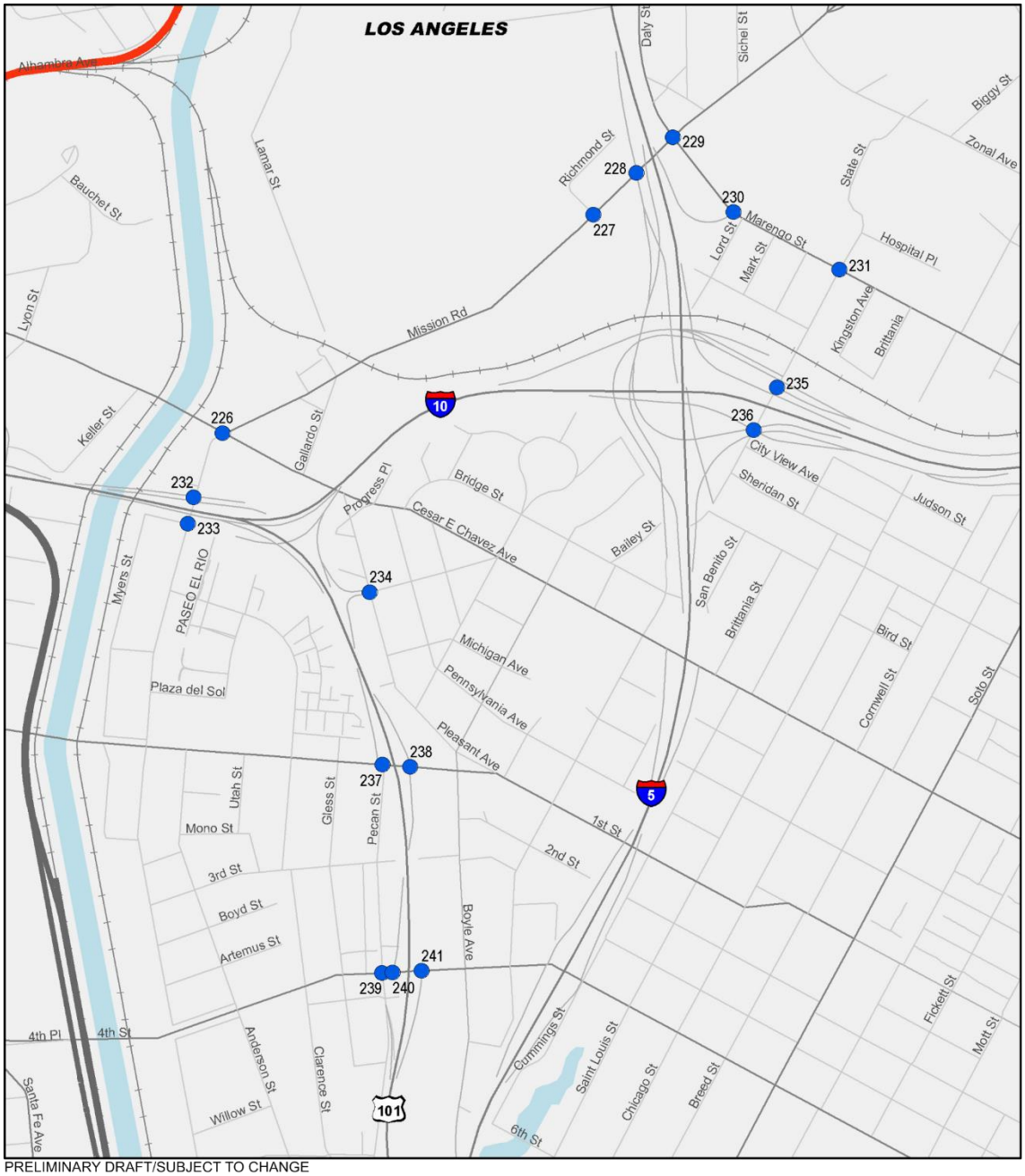
Rail Crossing Status
Proposed Grade Separation Improvements
Metro Grade Separation
HSR Closure

N
0 0.125 0.25
Miles
0 0.201 0.40
Kilometers

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

(Sheet 7 of 10)

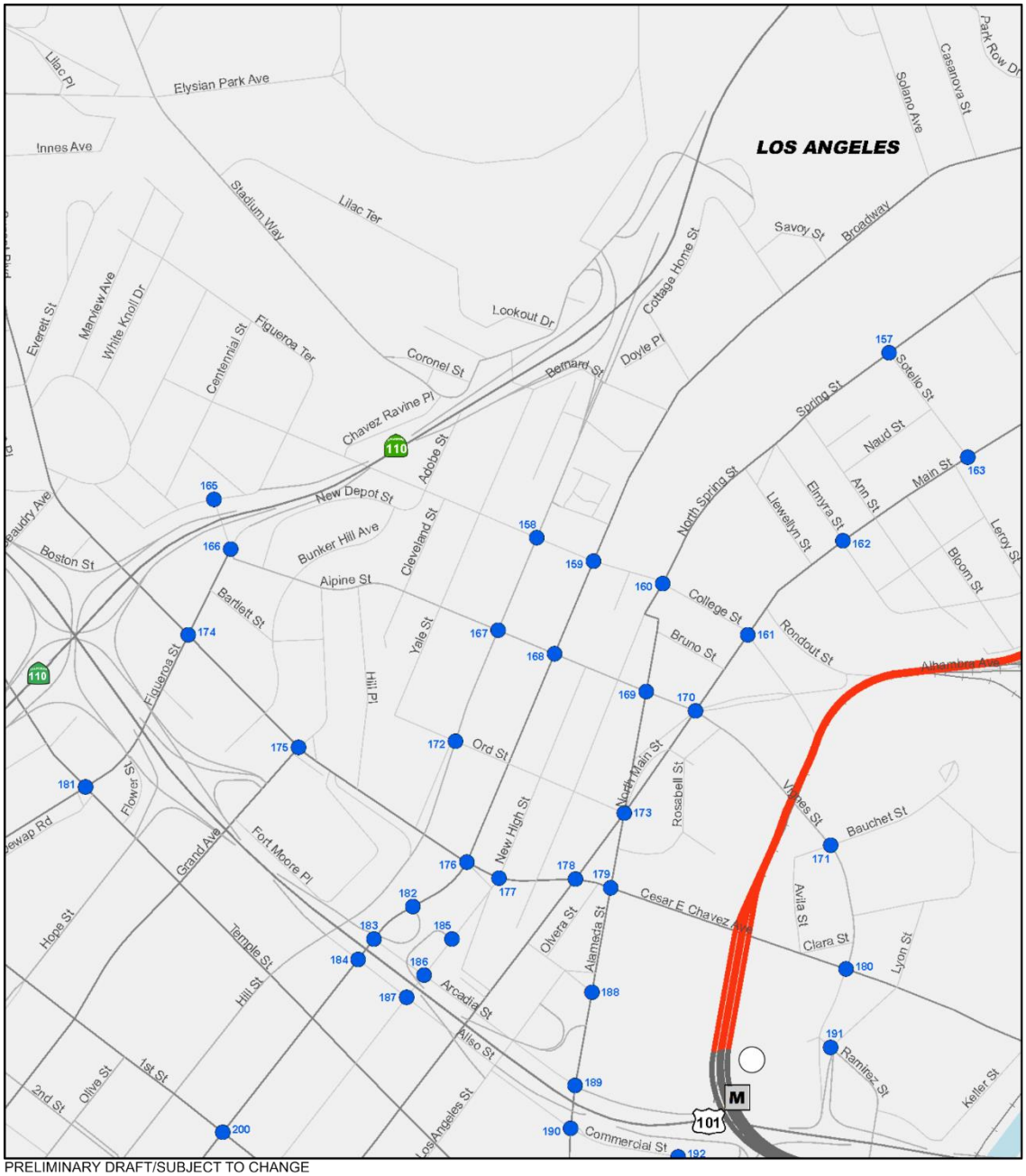


PRELIMINARY DRAFT/SUBJECT TO CHANGE
SOURCE: Esri (2018); CHSRA (2/2020)

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study

(Sheet 8 of 10)

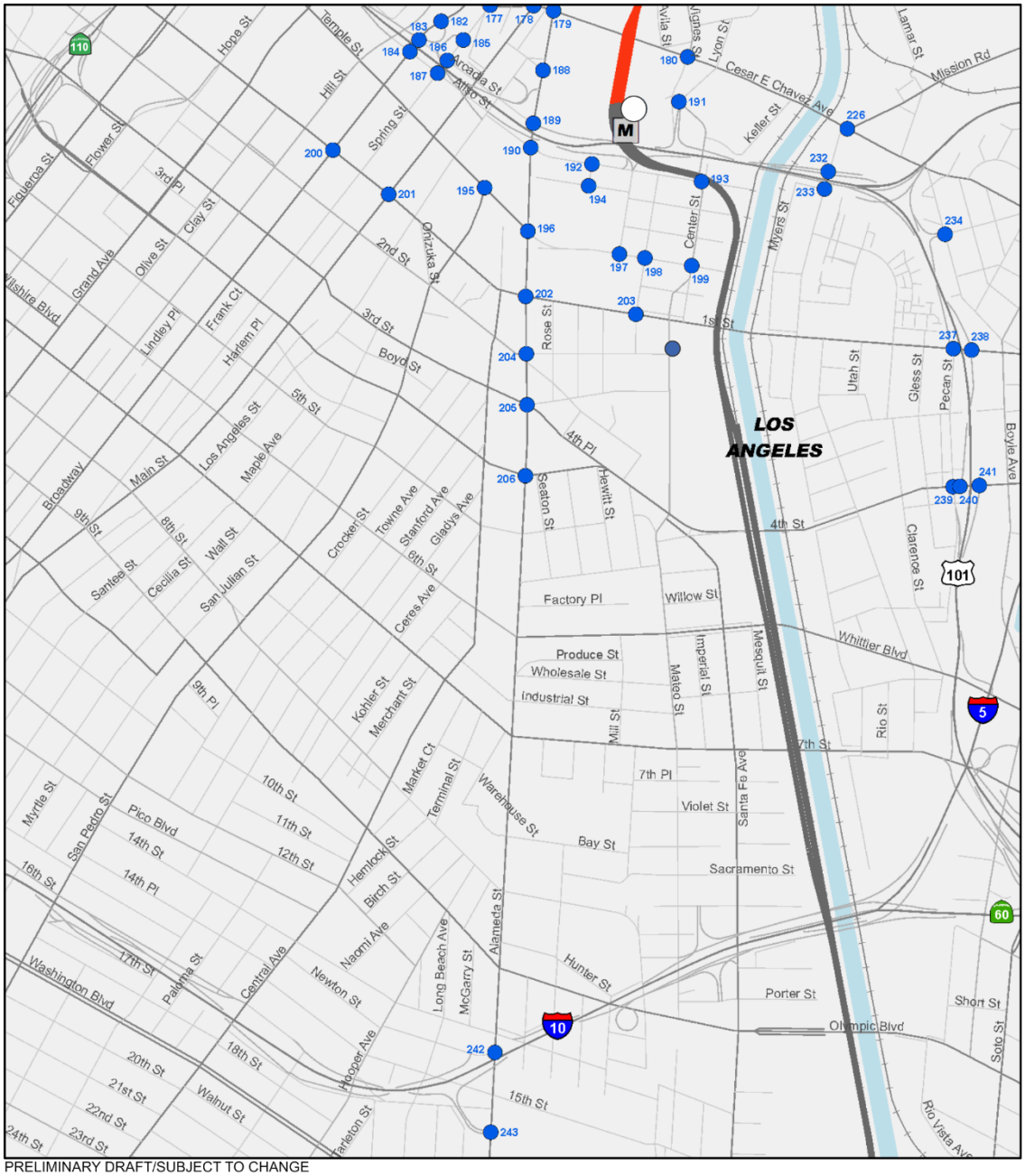


PRELIMINARY DRAFT/SUBJECT TO CHANGE
SOURCE: Esri (2018); CHSRA (2/2020)

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

(Sheet 9 of 10)



PRELIMINARY DRAFT/SUBJECT TO CHANGE
SOURCE: Esri (2018); CHSRA (2/2020)

HSR Alignment
Other HSR Project Section
HSR LAUS Station
Study Intersection
Metrolink Station
Metrolink

Rail Crossing Status
Proposed Grade Separation Improvements
Metro Grade Separation
HSR Closure

N
0 0.175 0.35
Miles
0 0.28 0.56
Kilometers

Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-1 Transportation Resource Study Area

(Sheet 10 of 10)

Table 3.2-4 Resource Study Area Intersection Number Designations

No.	Intersection Name	No.	Intersection Name
1	SR 170 SB Ramps at Victory Boulevard	39	Hollywood Way at Empire Avenue
2	Laurel Canyon at Victory Boulevard	40	Hollywood Way at Vanowen Street
3	Lankershim Boulevard at Victory Boulevard	41	Hollywood Way at Victory Boulevard
4	Sunland Boulevard at Glenoaks Boulevard	42	Hollywood Way at Burbank Boulevard
5	Sunland Boulevard at I-5 NB Ramps	43	Hollywood Way at Magnolia Boulevard
6	Sunland Boulevard at I-5 SB Ramps	44	Hollywood Way at Verdugo Avenue
7	Sunland Boulevard at San Fernando Road Minor	45	Pass Avenue at SR 134 EB Ramps
8	Sunland Boulevard at San Fernando Road	46	Pass Avenue at Alameda Avenue
9	Vineland Avenue at Strathern Street	47	Pass Avenue at Olive Avenue
10	Vineland Avenue at Saticoy Street	48	SR 134 EB On Ramp at Riverside Drive
11	Vineland Avenue at Sherman Way	49	Hollywood Way at Alameda Avenue
12	Vineland Avenue at Vanowen Street	50	Hollywood Way at Riverside Drive
13	Vineland Avenue at Victory Boulevard	51	Hollywood Way at Olive Avenue
14	Vineland Avenue at Burbank Boulevard	52	SR 134 WB Ramps at Alameda Avenue
15	Clybourn Avenue at San Fernando Road	53	Ontario Street at San Fernando Road
16	Clybourn Avenue at Vanowen Street	54	Ontario Street at Winona Avenue
17	Roscoe Boulevard at Glenoaks Boulevard	55	Ontario Street at Thornton Avenue
18	Roscoe Boulevard at I-5 NB Ramps	56	Ontario Street at Empire Avenue
19	Roscoe Boulevard at I-5 SB Ramps	57	Cohasset Street at Glenoaks Boulevard
20	Arvilla Avenue at San Fernando Road Minor	58	San Fernando Road Minor at I-5 SB Ramps
21	Arvilla Avenue at San Fernando Road	59	Winona/Naomi Street at San Fernando Road
22	Arcola Avenue at San Fernando Road Minor	60	Buena Vista Street at Glenoaks Boulevard
23	Lockhead Drive at San Fernando Road	61	Buena Vista Street at I-5 NB Ramps
24	Cohasset Street at San Fernando Road	62	Buena Vista Street at Winona Avenue
25	Cohasset Street at San Fernando Road Minor	63	Buena Vista Street at San Fernando Boulevard
26	Hollywood Way at Glenoaks Boulevard	64	Buena Vista Street at Thornton Avenue
27	Hollywood Way at I-5 NB Ramps	65	Buena Vista Street at Empire Avenue
28	Hollywood Way at I-5 SB Ramps	66	Buena Vista Street at Vanowen Street
29	Hollywood Way at Keswick Street	67	Buena Vista Street at Victory Boulevard
30	Avon Street at Cohasset Street	68	Buena Vista Street at Burbank Boulevard
31	Avon Street at San Fernando Road Minor	69	Buena Vista Street at Magnolia Boulevard
32	Hollywood Way SB at San Fernando Road	70	Buena Vista Street at Olive Avenue
33	Hollywood Way NB at San Fernando Road	71	Buena Vista Street at Alameda Avenue
34	Hollywood Way at Tulare Avenue	72	Lincoln Street at San Fernando Road
35	Hollywood Way at Winona Avenue	73	Lincoln Street at Empire Avenue
36	Hollywood Way at Thornton Avenue	74	Valpreda Street at Empire Avenue
37	Hollywood Way at Avon Street	75	Empire Avenue at San Fernando Boulevard
38	Avon Street at Empire Avenue	76	I-5 SB Ramps at San Fernando Road

No.	Intersection Name	No.	Intersection Name
77	I-5 NB Ramps at San Fernando Road	118	Flower Street at Fairmont Avenue
78	Burbank Boulevard at 3rd Street	119	Air Way at Flower Street
79	Burbank Boulevard at San Fernando Boulevard	120	San Fernando Road at Flower Street/Pelanconi Avenue
80	Burbank Boulevard at I-5 NB Ramps	121	Glenoaks Boulevard at Pelanconi Avenue
81	Burbank Boulevard at I-5 SB Ramps	122	San Fernando Road at Alma Street
82	Burbank Boulevard at Victory Boulevard	123	Glenoaks Boulevard at Alma Street
83	Magnolia Boulevard at Glenoaks Boulevard	124	San Fernando Road at Kellogg Avenue
84	Magnolia Boulevard at 3rd Street	125	Glenoaks Boulevard at Highland Avenue
85	Magnolia Boulevard at 1st Street	126	San Fernando Road at Fairmont Avenue
86	Magnolia Boulevard at Victory Boulevard	127	SR 134 WB On-/Off-Ramp at Fairmont Avenue
87	Olive Avenue at Glenoaks Boulevard	128	San Fernando Road at Doran Street
88	Olive Avenue at 3rd Street	129	SR 134 EB On-/Off-Ramp-Commercial Street at Doran Street
89	Olive Avenue at 1st Street	130	Brunswick Avenue at Chevy Chase Drive
90	Olive Avenue at Victory Boulevard	131	Perlita Avenue at Chevy Chase Drive
91	Alameda Avenue at Glenoaks Boulevard	132	La Clede Avenue at Chevy Chase Drive
92	Alameda Avenue at Victory Boulevard	133	Alger Street at Chevy Chase Drive
93	SR 170 SB Ramps at Sherman Way	134	San Fernando Road at Chevy Chase Drive
94	Laurel Canyon at Sherman Way	135	Central Avenue at Chevy Chase Drive
95	Lankershim Boulevard at Sherman Way	136	Brunswick Avenue at Los Feliz Boulevard
96	Hollywood Way at Cohasset Street	137	San Fernando Road at Los Feliz Boulevard
97	San Fernando Road at Linden Avenue	138	San Fernando Road at Central Avenue
98	Flower Street at Allen Avenue	139	San Fernando Road at El Bonito Avenue
99	San Fernando Road at Allen Avenue	140	San Fernando Road at Cerritos Avenue
100	Lake Street at Western Avenue	141	San Fernando Road at Mira Loma Avenue
101	Flower Street at Western Avenue	142	Glendale Boulevard at Glenfeliz Boulevard - Glenhurst Avenue
102	San Fernando Road at Western Avenue	143	Glendale Boulevard at Larga Avenue
103	Glenoaks Boulevard at Western Avenue	144	Glendale Boulevard at La Clede Avenue
104	San Fernando Road at Ruberta Avenue	145	San Fernando Road at Brand Boulevard
105	Flower Street at Sonora Avenue	146	Casitas Avenue at Tyburn Street
106	Grand Central Avenue at Sonora Avenue	147	San Fernando Road at Tyburn Street
107	Airway at Sonora Avenue	148	Silver Lake Boulevard at Casitas Avenue
108	San Fernando Road at Sonora Avenue	149	La Clede Avenue at Fletcher Drive
109	Glenoaks Boulevard at Sonora Avenue	150	San Fernando Road at Fletcher Drive
110	Flower Street at Grandview Avenue	151	San Fernando Road at SR 2 SB On-/Off-Ramps
111	Grand Central Avenue at Grandview Avenue	152	San Fernando Road at SR 2 NB Off-Ramp
112	Air Way at Grandview Avenue	153	San Fernando Road at SR 2 NB On-Ramp
113	San Fernando Road at Grandview Avenue	154	San Fernando Road at Macon Street
114	Glenoaks Boulevard at Grandview Avenue	155	San Fernando Road at Future Street
115	Glenoaks Boulevard at Graynold Avenue	156	San Fernando Road at Private Road
116	San Fernando Road at Norton Avenue	157	Sotello Street at Spring Street
117	Glenoaks Boulevard at Norton Avenue	158	Hill Street at College Street

No.	Intersection Name	No.	Intersection Name
159	Broadway at College Street	196	Alameda Street at Temple Street
160	Spring Street-Alameda Street at College Street	197	Garey Street at Temple Street
161	Main Street at College Street	198	Vignes Street at Temple Street
162	Elmyra Street at Main Street	199	Center Street at Temple Street
163	Sotello Street at Main Street	200	Broadway at 1st Street
164	Wilhardt Street at Main Street	201	Main Street at 1st Street
165	Figueroa Street at Figueroa Terrace	202	Alameda Street at 1st Street
166	Figueroa Street at Alpine Street	203	Vignes Street at 1st Street
167	Hill Street at Alpine Street	204	Alameda Street at 2nd Street
168	Broadway at Alpine Street	205	Alameda Street at 3rd Street - 4th Place
169	Alameda Street at Alpine Street	206	Alameda Street at 4th Street
170	Main Street at Alpine Street	207	San Fernando Road at Avenue 26
171	Vignes Street at Bauchet Street	208	SR 110 SB On-Ramp at Figueroa Street
172	Hill Street at Ord Street	209	SR 110 NB Off-Ramp at Figueroa Street
173	Alameda Street at Main Street - Ord Street	210	Avenue 26 at Figueroa Street
174	Figueroa Street at Sunset Boulevard - Cesar E Chavez Avenue	211	Avenue 26 at I-5 SB On-Ramp
175	Grand Avenue at Cesar E Chavez Avenue	212	Avenue 26 at SR 110 NB On-Ramp
176	Broadway at Cesar E Chavez Avenue	213	Avenue 26 at I-5 NB Off-Ramp
177	New High Street - Spring Street at Cesar E Chavez Avenue	214	Pasadena Avenue at Broadway
178	Main Street at Cesar E Chavez Avenue	215	Avenue 18 at Pasadena Avenue
179	Alameda Street at Cesar E Chavez Avenue	216	I-5 SB On-/Off-Ramps – Avenue 21 at Pasadena Avenue
180	Vignes Street at Cesar E Chavez Avenue	217	I-5 NB On-/Off-Ramps at Pasadena Avenue
181	Figueroa Street at Temple Street	218	Avenue 18 at Spring Street at Broadway
182	Broadway at US-101 NB On-Ramp	219	Avenue 20 at Broadway
183	Broadway at Arcadia Street	220	Avenue 21 at I-5 SB On-/Off-Ramps at Broadway
184	Broadway at Aliso Street	221	I-5 NB On-/Off-Ramps – Avenue 21 at Broadway
185	Spring Street at US-101 NB Off-Ramp	222	Daly Street at Broadway
186	Spring Street at Arcadia Street	223	Gibbons Street at Main Street
187	Spring Street at Aliso Street	224	Avenue 20 at Main Street
188	Alameda Street at Paseo de la Place	225	Daly Street at Main Street
189	Alameda Street at Arcadia Street – US-101 NB Off-Ramp	226	Mission Road at Cesar E Chavez Avenue
190	Alameda Street at Aliso Street – Commercial Street	227	Richmond Street at Mission Road
191	Vignes Street at Gateway Plaza – Ramirez Street	228	I-5 SB On-/Off-Ramps at Mission Road
192	Garey Street – US-101 SB On-/Off-Ramps at Commercial Street	229	Marengo Street at Mission Road
193	Center Street at Commercial Street	230	I-5 NB On-Ramp at Marengo Street
194	Garey Street at Ducommun Street	231	State Street at Marengo Street
195	Judge John Aliso Street at Temple Street	232	Mission Road at US-101 NB On-/Off-Ramps

No.	Intersection Name	No.	Intersection Name
233	Mission Road at Aliso Street – US-101 SB On-/Off-Ramps	239	US-101 SB On-Ramp – Pecan Street at 4th Street
234	Pleasant Avenue at I-10 EB On-/Off-Ramps - Kearney Street	240	US-101 SB Off-Ramp at 4th Street
235	State Street at I-10 WB Off-Ramp	241	US-101 NB Off-Ramp at 4th Street
236	State Street at I-10 EB On-/Off-Ramps	242	Alameda Street at Newton Street (I-10 WB On-Ramp)
237	US-101 SB On-Ramp – Pecan Street at 1st Street	243	Alameda Street at I-10 EB On-/Off-Ramps
238	US-101 NB On-/Off-Ramps at 1st Street		

Not all intersections in the vicinity of Hollywood Burbank Airport (intersections 1 through 96) were analyzed for both construction and operations impacts. Intersections were only analyzed in the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) where a potential impact could occur. For example, an intersection may be affected during construction due to detours and closures, but there would be no potential for impacts during operations where the HSR alignment is below grade.

EB = eastbound SB = southbound US = U.S. Route
HSR = high-speed rail SR = State Route WB = westbound
NB = northbound

3.2.4.2 Impact Avoidance and Minimization Features

The HSR Build Alternative incorporates standardized HSR features to avoid and minimize impacts. These features are referred to as IAMFs. The Authority would implement IAMFs during project design and construction; therefore, the analysis of impacts of the HSR Build Alternative in this section factors in all applicable IAMFs. Appendix 2-B, Impact Avoidance and Minimization Features, provides a detailed description of IAMFs that are included as part of the HSR Build Alternative design. IAMFs applicable to transportation include:

- TR-IAMF#1, Protection of Public Roadways during Construction—The contractor would provide a photographic survey documenting the condition of the public roadways along truck routes providing access to the construction site and would be responsible for the repair of any structural damage caused by HSR Build Alternative construction.
- TR-IAMF#2, Construction Transportation Plan—The contractor would prepare a detailed Construction Transportation Plan (CTP) for minimizing the impact of construction and construction traffic on adjoining and nearby roadways while maintaining traffic flow during peak travel periods.
- TR-IAMF#3, Off-Street Parking for Construction-Related Vehicles—The contractor would identify adequate off-street parking for all construction-related vehicles throughout the construction period to minimize impacts on public on-street parking areas.
- TR-IAMF#4, Maintenance of Pedestrian Access—The contractor would prepare and implement specific construction management plans to address maintenance of pedestrian access during the construction period.
- TR-IAMF#5, Maintenance of Bicycle Access—The contractor would prepare and implement specific construction management plans to address maintenance of bicycle access during the construction period.
- TR-IAMF#6, Restriction on Construction Hours—The contractor would limit construction materials deliveries and the number of construction employees arriving or departing the site during peak-period travel to minimize impacts on traffic on roadways.
- TR-IAMF#7, Construction Truck Routes—The contractor would deliver all construction-related equipment and materials on the appropriate truck routes and would prohibit heavy construction vehicles from using alternative routes to get to the site.

- TR-IAMF#8: Construction during Special Events—The contractor would provide a mechanism to prevent roadway construction activities from reducing roadway capacity during major athletic events or other special events that substantially (10 percent or more) increase traffic on roadways affected by project construction.
- TR-IAMF#9, Protection of Freight and Passenger Rail during Construction—The contractor would repair any structural damage to freight or public railways that may occur during the construction period and would return any damaged sections to their original structural condition.
- TR-IAMF#11, Maintenance of Transit Access—The contractor would prepare and implement specific construction management plans to address maintenance of public transit access during the construction period.
- TR-IAMF#12, Pedestrian and Bicycle Safety—The contractor would provide a technical memorandum describing how pedestrian and bicycle accessibility during construction would be provided and supported across the HSR corridor, to and from stations and on station property.
- SS-IAMF#1: Construction Safety Transportation Management Plan—The contractor would prepare a Construction Safety Transportation Management Plan (CSTMP) that describes the contractor's coordination efforts with local jurisdictions for maintaining emergency vehicle access during construction of the HSR Build Alternative. The plan would include emergency vehicle access during temporary road closures.
- SS-IAMF#5: Aviation Safety— The Authority and/or the contractor would ensure all Federal Aviation Administration (FAA) requirements are met.
- PK-IAMF#1: Parks, Recreation, and Open Space—Prior to construction, the contractor would prepare and submit to the Authority a technical memorandum that identifies project design features to be implemented to minimize impacts on parks, recreation, and open space.

3.2.4.3 Methods for Evaluating Impacts

This section describes the sources and methods the Authority used to analyze potential impacts from implementing the HSR Build Alternative on transportation. Refer to Section 3.2.4.4 for an explanation of the methods for determining significance under CEQA. Refer to Section 3.1.3.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA. Refer to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) for information regarding the methods and data sources used in this analysis. Laws, regulations, and orders (see Section 3.2.2) that regulate transportation were also considered in the evaluation of impacts on transportation.

Analysts used the following methods to evaluate potential direct and indirect impacts from construction and operation on transportation.

Study Approach

The approach for evaluating project roadway impacts involved (1) identifying roadway facilities that could be affected by the project, (2) establishing baselines and future years for evaluation of impacts, (3) applying operational standards to affected facilities, and (4) identifying improvements required to meet specified operational standards.

From north to south along the Burbank to Los Angeles Project Section alignment, all roadway segments (paved and unpaved) that cross the project alignment were identified. Roadway segments were identified using existing aerial imagery and field observations.

The methods for evaluating impacts on other modes of transportation (i.e., aviation, freight rail, transit, pedestrian, and bicycle) involved (1) identifying direct or indirect project impacts on these facilities and (2) determining consistency with adopted plans for these facilities, including future implementation of plans for other transportation modes.

Baseline Year and Analysis Scenarios

The SCAG RTP/SCS baseline year of 2008 and buildout year of 2035 was used for the growth projections in the traffic analysis. This was the best available data source when the study was initiated. The analysis of the HSR project required forecasts for a 2040 horizon year for HSR operations. This required data extrapolation for the year 2040 from the 2008 and 2035 SCAG model years' output, and then calculating the annual and compounded growth.

Due to the potential for the HSR Build Alternative to affect roadway facilities, the transportation analysis focused on the roadway facilities the HSR Build Alternative would cross, roadway facilities that would be modified by the HSR Build Alternative as part of construction, and new roadway facilities that would be built as part of the HSR Build Alternative. These issues were analyzed for existing and horizon year traffic conditions leading to analysis of the following scenarios:

- Existing Conditions (Year 2015)
- Existing (2015) Plus Project Construction
- Horizon Year (2040) No Project
- Horizon Year (2040) Plus Project

This analysis also addresses impacts of the HSR Build Alternative during the opening year of operations, which has a lower level of forecasted ridership than in the 2040 horizon year. Please refer to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) for a detailed discussion of these scenarios, as well as an opening year scenario. This analysis also includes the supporting growth forecasts and trip generation calculations at the Burbank Airport Station and LAUS station areas.

Traffic Operational Standards

The traffic operations analysis uses LOS as the primary unit of measure to describe the operating quality of a highway or roadway. LOS is calculated by comparing the actual number of vehicles using a roadway to its carrying capacity. In general, LOS is measured by the ratio of traffic volume to capacity (V/C)[2] or by the average delay experienced by vehicles on the roadway. The *Highway Capacity Manual* (Transportation Research Board 2010) is a recognized source for the techniques used to measure transportation facility performance.

Using the *Highway Capacity Manual* procedures, the quality of traffic operations is graded into one of six LOS designations: A, B, C, D, E, or F. LOS A represents the best range of operating conditions (least delay to motorists) and LOS F represents the worst (greatest delay). The following sections describe LOS standards more specifically for intersections and roadway segments.

Intersection Level-of-Service

At intersections, LOS is defined based on the delay experienced per vehicle. The LOS methodology for signalized intersections accounts for the effects of signal type, timing, phasing, and progression on average delay. The average delay per vehicle and LOS for signalized intersections, based on the *Highway Capacity Manual* methodology, is defined quantitatively in Table 3.2-5.

Unsignalized intersections include two-way stop-controlled and all-way stop-controlled intersections. The LOS for an all-way stop-controlled intersection is defined by delay for the intersection as a whole, whereas for a two-way stop-controlled intersection, LOS is based on the delay for the worst-case operations by movement. The average delays per vehicle and LOS for unsignalized intersections are defined in Table 3.2-6.

[2] Volume to capacity is the ratio of the volume of traffic using a facility to the capacity of the facility (volume-to-capacity ratio, or V/C).

Table 3.2-5 Level-of-Service Values and Average Vehicular Delay Definitions for Signalized Intersections

LOS	Definition	Average Stop Delay per Vehicle (seconds)
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.	≤10
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted, and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.	>10 and < 20
C	LOS C describes stable operation. The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.	>20 and < 35
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.	>35 and < 55
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.	>55 and < 80
F	LOS F is characterized by flow at extremely low speed. Congestion likely occurs at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity ratio greater than 1.0.	>80

Source: California High-Speed Rail Authority, 2019
For approach-based and intersection-wide assessments, LOS is defined solely by control delay.
Control delay is the portion of total delay that is attributed to the control device (e.g. traffic signal or stop sign) at an intersection.
LOS = level-of-service

Table 3.2-6 Level-of-Service and Average Vehicular Delay Definitions for Unsignalized Intersections

Level-of-Service	Delay per Vehicle (seconds)
A	< 10
B	>10 and < 15
C	>15 and < 25
D	>25 and < 35
E	>35 and < 50
F	>50

Source: California High-Speed Rail Authority, 2019

Roadway Level-of-Service

The LOS indicators for the roadway system are based on the volume of traffic along designated sections of roadway during a typical peak hour and the attainable vehicular capacity of that segment. These two measures for each monitored segment of the roadway system are expressed as a ratio. The V/C ratio is then identified as an LOS, from LOS A through LOS F. LOS A identifies the best operating conditions along a section of roadway and is characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability. LOS F characterizes forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions.

The peak-hour capacity of a roadway is determined by the number of lanes and the roadway category (facility type). The peak-hour capacities by roadway type used in this analysis also vary by area type (e.g., urban, urban business). The operations analysis of roadway segments was conducted using roadway capacity values defined by the SCAG Regional Model (SCAG 2012). Table 3.2-7 defines and describes the LOS criteria for the roadway segment analysis.

Table 3.2-7 Level-of-Service and Volume-to-Capacity Definitions for Roadway Segments

Level-of-Service	Volume-to-Capacity Ratio	Definition
A	0.00–0.60	Free-flow speeds prevail. Vehicles are almost unimpeded in their ability to maneuver within the traffic stream.
B	0.61–0.70	Reasonably free-flow speeds are maintained. The ability to maneuver within traffic is only slightly restricted.
C	0.71–0.80	Flow with speeds at or near the free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more care and vigilance on the part of the driver.
D	0.80–0.90	Speeds begin to decline slightly with increasing flows. In this range, density begins to increase somewhat more quickly with increasing flow. Freedom to maneuver within the traffic stream is noticeably limited.
E	0.91–1.00	Operation at capacity with no usable gaps in the traffic stream. Any disruption to the traffic stream has little or no room to dissipate.
F	>1.00	Breakdown in the traffic flow with long queues of traffic.

Source: California High-Speed Rail Authority, 2019

Freeway Ramp Queuing

For the purposes of analysis, peak-hour queue lengths were calculated at all freeway on-ramps and off-ramps where project trips were expected to add 100 or more trips in the peak hour. For on-ramps, capacity was estimated by the existing geometry using maximum throughput capacities in the *Caltrans Ramp Metering Design Manual* (Caltrans 2016b). Peak-hour queue length was determined in a similar method to the procedure for calculating minimum queue length storage for new or reconstructed ramps. For off-ramps, ramp capacity, volume approaching the intersection, and queue length were determined from the resulting Synchro 9 software signal timing and synchronization intersection analysis and 95th percentile queue length (the engineering standard for determining typical vehicle backup length) output. The HSR Build Alternative would have an effect on ramp queuing if the 95th percentile queue length is not exceeded in the No Project condition but would be exceeded with the HSR Build Alternative.

During preliminary analysis, the Authority determined that no off-ramps or on-ramps would exceed 95th percentile queue length due to project conditions. Therefore, no additional analysis was conducted at these locations.

Level-of-Service for Construction and Operational Phases

The traffic impact criteria used to evaluate traffic LOS for roadway segments and signalized and unsignalized intersections during the project construction and operation phases are presented below:

- For roadway segments, a significant impact would occur if the addition of project traffic results in an LOS of E or F and the V/C ratio increases 0.04 or more over the baseline condition.
- For signalized intersections, a significant impact would occur if the addition of project traffic results in an LOS of E or F and an increase in average traffic delay of 4 seconds or more.
- For unsignalized intersections, a significant impact would occur if the addition of project traffic results in an LOS of E or F and an increase in traffic delay of 5 seconds or more (measured as average delay for all-way stop or worst-movement delay for a side-street-stop intersection), and if the intersection satisfies one or more traffic signal warrants (national engineering standards for the justification of traffic signals, defined by the Manual for Uniform Traffic Control Devices, adopted for use in California by Caltrans) for at least 1 hour of the day.

Vehicle Miles Traveled Calculations

VMT is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. Total VMT was derived from the statewide travel demand model estimate of daily VMT using medium and high ridership forecasts, as defined within the Authority's Business Plan (Authority 2016b). The methodology used to estimate VMT is summarized below. Please refer to the *Further Background on Cambridge Systematics Explanation of Ridership Forecasts* memorandum (Authority 2020) and *California High-Speed Rail Environmental Analysis: Method for Forecasting Vehicle-Miles of Travel Reduction* (Cambridge Systematics, Inc. 2020) in Appendix 3.2-A for further details on the methodology for calculating VMT.

Analysts developed ridership forecasts for the HSR system using the latest version of the statewide California High-Speed Rail Ridership and Revenue Model in California High-Speed Rail Ridership and Revenue Model, Business Plan Model-Version 3 (BPM-V3). The model incorporates socioeconomic growth assumptions (population, housing, and employment forecasts) consistent with the California Statewide Travel Demand Model and adjusts them for the 2029 and 2040 forecast years. The statewide conventional passenger rail and urban transit networks are consistent with current and planned routes in the 2013 California State Rail Plan and plans for individual regional rail operators. The Authority provided station mode of access forecasts. Estimates were made for vehicle trip forecasts through the analysis of comparable systems, the local context at each HSR station, existing conditions and constraints, planned land uses, transportation facilities and services, vehicle parking availability, and the mode of access forecasts.

VMT on roadway networks is a performance measure highly correlated with transportation greenhouse gas emissions. VMT is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. The Ridership and Revenue Model was used to forecast annual VMT for Southern California future conditions. Forecasts were developed for vehicles that would travel on the freeways and roads in the RSA using a version of the SCAG regional travel demand model. This forecasting tool was identified as the most appropriate for the project because it encompasses all of the RSA intersections and freeway segments, as well as all local counties.

Modeling adjustments in the SCAG model were made to include the HSR LAUS and Burbank stations in order to develop vehicle forecasts for this analysis. The traffic analysis applied intersection and freeway LOS analytical methods to evaluate the vehicular traffic impacts from the HSR stations. Analysis volumes were defined by existing counts and 2040 No Project traffic volumes for the RSA station areas and alignment by using growth factors by roadway link defined by the SCAG model. The growth factors were applied to the existing volumes to arrive at the future No Project volumes for the RSA intersections. Vehicle trips were manually added to the

HSR station sites to the 2040 No Project traffic volumes based on distribution data derived from the SCAG model to estimate the project-related traffic volumes.

3.2.4.4 Method for Determining Significance under CEQA

CEQA requires that an EIR identify the significant environmental impacts of a project (State CEQA Guidelines Section 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a significance determination for each impact using a threshold-based analysis (see 3.2.4, Methods for Evaluating Impacts, for further information). By contrast, under NEPA, significance is used to determine whether an EIS is required; NEPA requires an EIS to be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." Accordingly, Section 3.2.9, CEQA Significance Conclusions, summarizes the significance of the environmental impacts on transportation for the HSR Build Alternative. The Authority is using the following thresholds to determine whether a significant impact on transportation would occur as a result.

Construction Phase

The HSR Build Alternative would have a significant impact on the environment during construction if it would:

- Result in inadequate emergency access
- Substantially increase hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (such as farm equipment).
- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.

Operational Phase

Under CEQA Guidelines Section 15064.3, automobile delay no longer constitutes a significant environmental impact. Accordingly, this analysis does not characterize a particular level of automobile delay on roadways, freeways, and intersections as a significant environmental impact.

Operations-caused effects on the roadway network would be significant if they:

- Result in a net increase in VMT over baseline conditions, or otherwise conflict or are inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b).

The HSR Build Alternative also could have a significant impact on the environment during operation if it would:

- Result in inadequate emergency access
- Substantially increase hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (such as farm equipment)
- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.

3.2.5 Affected Environment

This section describes existing transportation conditions in the RSA, including the highway and street network, transit services, aviation, railroads, and pedestrian and bicycle facilities. The affected environment discussion considers the characteristics of roadways within the RSA, average daily traffic, a.m. and p.m. peak-hour traffic volumes, and potential future plans that may affect the development of the transportation network. This information provides the context for the environmental analysis and evaluation of impacts.

A summary of stakeholder concerns about transportation issues identified during public outreach activities can be found in Chapter 9, Public and Agency Involvement.

3.2.5.1 Regional Transportation System

The network of interstate highways, state route highways, arterials, and local roads in the RSA provides mobility within the larger urbanized Los Angeles County region; among the cities of Los Angeles, Burbank, and Glendale; and between neighborhoods within the RSA. Streets and highways provide travel for most modes of transportation, including walking, biking, personal vehicles, public transit buses, and heavy-duty freight trucks. The sections that follow describe the existing major roadways, traffic conditions along the HSR Build Alternative alignment and around the HSR stations, transit and bicycle services and facilities, and aviation and rail services.

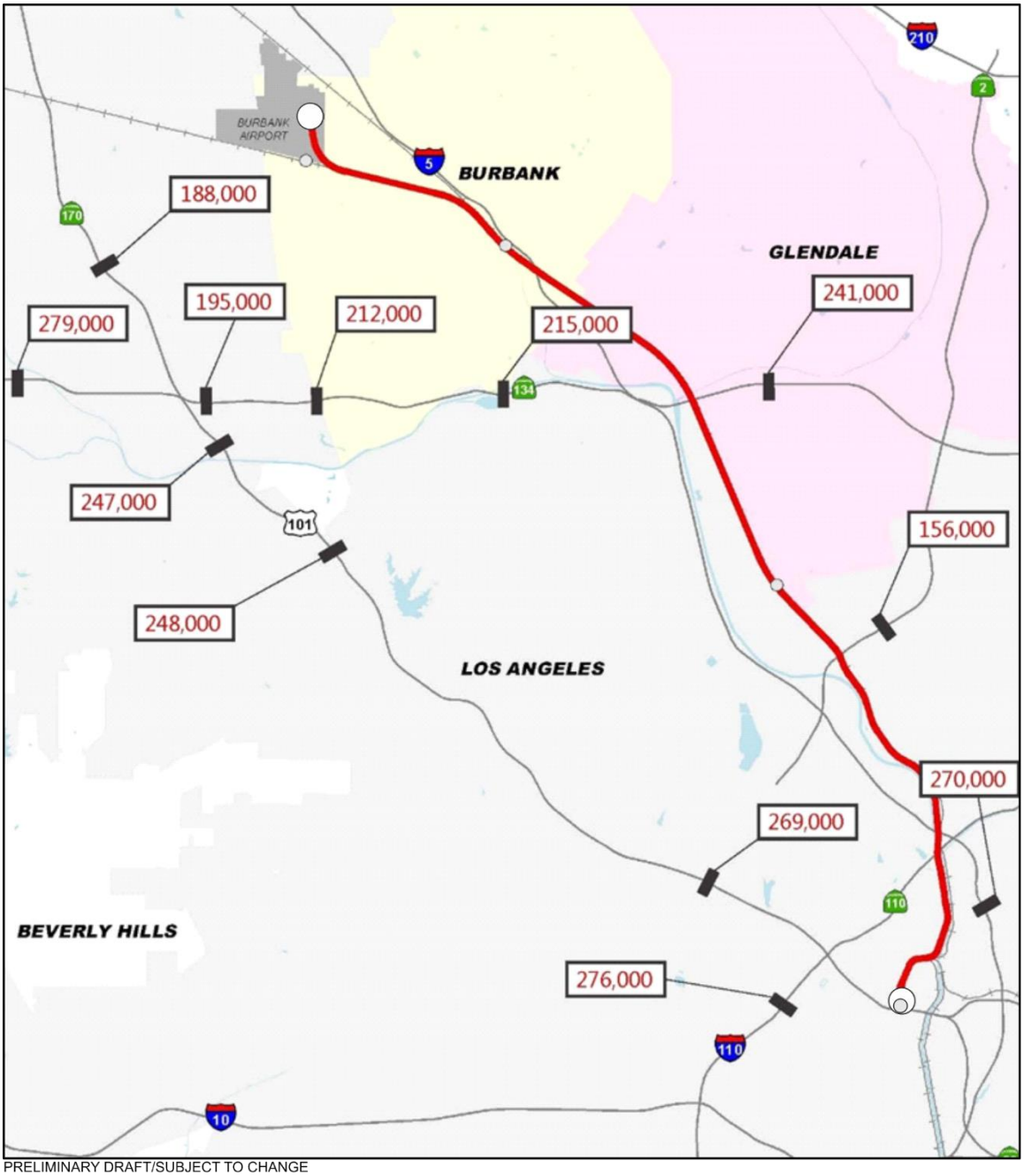
3.2.5.2 Existing Major Roadways

Streets and highways are the most-used infrastructure in the transportation network and can most easily be adapted to changing needs. Existing roadways within the RSA, which are major components of the roadway network, are discussed below.

Major Freeways and State Routes

The following interstate and state route highways provide regional access into and out of the transportation RSA:

- I-5/Golden State Freeway—This facility provides general north-south access in the RSA between Burbank, Glendale, and Los Angeles. This facility provides access to the east side of downtown Los Angeles and also provides access to other freeways that serve the downtown area, including SR 110 and I-10. I-5 provides access to the entire State of California, terminating on the south at the border with Mexico and terminating on the north at the border with Canada. This facility is the major link between San Diego County, Orange County, Los Angeles County, the Central Valley, and areas farther north, including Sacramento. The average annual daily traffic (AADT) on I-5 in the vicinity of the RSA is as high as 270,000 vehicles (Authority 2019).
- SR 2/Glendale Freeway—SR 2 provides access between the Silver Lake neighborhood of Los Angeles in the south and I-210 in the north. At the southern terminus of the freeway portion, SR 2 transitions into Glendale Boulevard and does not have any freeway interchanges. The southernmost interchange of the freeway is at I-5, north of its terminus in Silver Lake. SR 2 continues south and west via arterial links to the City of Santa Monica, and continues north from I-210 via the Angeles Crest Highway in the San Gabriel Mountains. The AADT on SR 2 in the vicinity of the RSA is as high as 156,000 vehicles (Authority 2019).
- US-101/Hollywood Freeway/Santa Ana Freeway—This highway, which was built before the Interstate era, provides access to East Los Angeles, the north side of downtown Los Angeles, Hollywood, and the San Fernando Valley. The northern terminus of US-101 is in the State of Washington. In the San Fernando Valley, US-101 becomes the Ventura Freeway (with SR 134 serving as the east link of that freeway to Pasadena). The AADT on US-101 in the vicinity of the RSA is as high as 269,000 vehicles (Authority 2019).
- SR 134/Ventura Freeway—This freeway provides access between the east side of the San Fernando Valley, Glendale, the Eagle Rock neighborhood of Los Angeles, and Pasadena. The AADT on SR 134 in the vicinity of the RSA is as high as 241,000 vehicles (Authority 2019).
- I-110/SR 110/Harbor Freeway/Arroyo Seco Parkway—This freeway provides access between the Port of Los Angeles in the south and Pasadena in the north. This freeway also provides access to the west side of downtown Los Angeles. North of its interchange with I-10, this freeway is designated as SR 110, and north of US-101 it is also designated with the name Arroyo Seco Parkway because of its historic status in the freeway network. The AADT on SR 110 in the vicinity of the RSA is as high as 276,000 vehicles (Authority 2019).



Source: California High-Speed Rail Authority and Federal Railroad Administration, 2019

Figure 3.2-2 Major Freeways/Highways and Traffic Volumes

Regionally Significant Roadways

Metro designates regionally significant arterial highways within Los Angeles County to prioritize the funding of surface transportation improvement projects. The characteristics and classifications of regionally significant roadways that traverse the study intersections within the RSA are provided in Table 3.2-8. This information includes roadways for the cities of Burbank, Glendale, and Los Angeles.

Table 3.2-8 Regionally Significant Roadway Segments with Capacities

ID	Roadway Segment	Area Type	No. of Lanes	Hourly Capacity	Daily Capacity
A	Sunland Boulevard south of I-5 northbound ramps	Urban	4	2,900	65,400
B	Sunland Boulevard north of San Fernando Road Minor	Urban	4	3,200	65,400
C	Vineland Avenue south of San Fernando Road	Urban	4	2,900	65,400
D	Vineland Avenue south of Victory Boulevard	Urban	4	2,900	69,000
E	Hollywood Way south of I-5 northbound ramp	Urban	4	2,900	69,000
F	Hollywood Way south of San Fernando Road Ramp	Urban	5	3,625	93,600
G	Hollywood Way south of Winona Avenue	Urban	5	3,625	93,600
H	Hollywood Way south of Thornton Avenue	Urban	4	3,200	69,000
I	Hollywood Way north of Avon Street	Urban	4	3,200	69,000
J	Hollywood Way north of Victory Boulevard	Urban	4	2,900	69,000
K	Hollywood Way south of Victory Boulevard	Urban	4	2,900	69,000
L	Buena Vista Street north of San Fernando Boulevard	Urban	4	2,900	69,000
M	Buena Vista Street south of San Fernando Boulevard	Urban	4	2,900	69,000
N	Buena Vista Street south of Empire Avenue	Urban	5	3,625	93,600
O	Lincoln Boulevard south of San Fernando Boulevard	Urban	4	2,900	69,000
P	Empire Avenue east of Buena Vista Street	Urban	4	2,900	69,000
Q	Burbank Boulevard south of I-5 northbound ramps	Urban	6	4,950	118,200
R	San Fernando Road west of Vineland Avenue	Urban	4	2,900	69,000
S	San Fernando Road west of Hollywood Way	Urban	4	2,900	69,000
T	San Fernando Boulevard west of Buena Vista Street	Urban	4	2,900	69,000
U	Victory Place west of Empire Street	Urban	2	1,100	27,600
V	San Fernando Road Minor east of Vineland Avenue	Urban	2	1,100	26,400
W	San Fernando Road Minor west of I-5 southbound ramps	Urban	2	1,100	26,400
X	Sherman Way west of Vineland Avenue	Urban	4	2,900	69,000
Y	Victory Boulevard west of Vineland Avenue	Urban	6	4,950	118,200
Z	Victory Boulevard west of Hollywood Way	Urban	4	2,900	69,000
AA	Victory Boulevard east of Hollywood Way	Urban	4	2,900	69,000
AB	San Fernando Road west of Arvilla Avenue	Urban	4	2,900	69,600
AC	Brazil Street west of Railroad Track	Urban Business	2	1,200	28,800
AD	Doran Street west of Railroad Track	Urban Business	2	1,200	28,800
AE	Flower Street west of Air Way	Urban Business	4	3,000	72,000

ID	Roadway Segment	Area Type	No. of Lanes	Hourly Capacity	Daily Capacity
AF	Western Avenue east of Flower Street	Urban Business	4	2,700	64,800
AG	Sonora Avenue west of Air Way	Urban Business	4	2,700	64,800
AH	Chevy Chase Drive west of Railroad Track	Urban Business	2	1,200	28,800
AI	Grandview Avenue west of Air Way	Urban Business	4	3,000	72,000
AJ	Main Street east of Los Angeles River	Urban Business	4	3,000	72,000
AK	Main Street west of Los Angeles River	Urban Business	4	3,000	72,000
AL	Avenue 19 north of Figueroa Street (Bridge)	Urban	2	1,250	30,000

Source: California High-Speed Rail Authority, 2019
Roadways identified in the ID column are depicted on Figure 3.2-1.
I = Interstate

Regional Truck Routes

The highway and the regionally significant roadways comprise the primary freight infrastructure in the RSA. This is particularly important for local and regional freight movements, which are essentially all carried by truck. Regional truck routes are intended to be used for long-distance truck movement. Truck movements for local deliveries within a community may use the most direct route to the particular delivery location, including local streets.

The Federal Surface Transportation Assistance Act of 1982 authorized the establishment of a national network of highways designated for use by large trucks. The Federal Surface Transportation Assistance Act truck routes within the study area include national network and terminal access routes, including I-5, US-101, and SR 134.

Road Network in the Vicinity of High-Speed Rail Stations

Burbank Airport Station Area

The following roadways provide general access in the vicinity of the proposed Burbank Airport Station:

- San Fernando Boulevard—This northwest-to-southeast-trending roadway would provide access on the north side of the station site. The road currently connects to N Hollywood Way and allows access to the existing airport area and I-5.
- Hollywood Way—This north-south roadway would provide access near the east side of the station site. This roadway provides direct access to Hollywood Burbank Airport and a remote parking lot and private parking facilities on the west. A full-access interchange with I-5 is provided to the north.
- Vanowen Street—This east-west roadway would provide connecting access to Hollywood Burbank Airport on the south side. Vanowen Street currently provides access to the existing Bob Hope Airport Train Station and intersects Hollywood Way and Buena Vista Street.
- Buena Vista Street—This is a north-south roadway located east of the proposed Burbank Airport Station. There is a full-access interchange with I-5. The southbound I-5 ramps are located on San Fernando Boulevard to the west of Buena Vista Street, while the northbound ramps are located on Buena Vista Street.
- Empire Avenue—This east-west roadway is located south of the proposed station. This roadway provides direct access to Hollywood Burbank Airport and airport parking facilities. This roadway also provides access to the Burbank-Bob Hope Airport Metrolink Station.

Los Angeles Union Station Area

The following roadways are in vicinity of LAUS and provide access to and from the station:

- Alameda Street—This north-south roadway borders and provides primary access to the west side of LAUS. Access to existing station short-term vehicle parking areas and the main passenger loading area is provided via this roadway at the Alameda Street/Los Angeles Street intersection.
- Cesar E. Chavez Avenue—This east-west roadway borders the north side of LAUS and provides secondary access to the west side of the site and access to the subterranean parking structure at the Metro headquarters building.
- Vignes Street, South of Cesar E. Chavez Avenue—This north-south roadway segment borders and provides primary access to the east side of LAUS. Direct access is provided at the west leg of the Vignes Street/Ramirez Street intersection, where vehicles can enter and exit the main accessway for the Metro headquarters parking structure, and buses and shuttles can access the Patsaouras Transit Plaza.

The area roadway network will be used to access remote parking sites in the following nearby areas:

- Chinatown Parking Area—This parking area is roughly bounded by College Street, Grand Avenue, Alameda Street, and Cesar E. Chavez Avenue.
- Pueblo Parking Area—This parking area is roughly bounded by Cesar E. Chavez Avenue, Grand Avenue, Alameda Street, and US-101.
- South of US-101 Parking Area—This parking area is roughly bounded by US-101, Grand Avenue, Second Street, and the Los Angeles River.

3.2.5.3 Traffic Conditions

Street and highway intersections and segments within the RSA were analyzed to determine LOS. This section provides a summary of the existing traffic conditions for the major roadways within the RSA and the HSR Build Alternative station areas.

Roadway Traffic Volumes

Existing roadway configurations and conditions were analyzed as part of the overall RSA traffic analysis and are summarized below. Table 3.2-9 provides a summary of existing daily vehicle volumes for the analyzed roadway segments within the RSA.

Table 3.2-9 Existing Roadway Segment Volumes

ID	Roadway Segment	Lanes	Daily Capacity	Existing Volumes
AC	Brazil Street west of Railroad Track	2	28,800	1,832
AD	Doran Street west of Railroad Track	2	28,800	5,812
AE	Flower Street west of Air Way	4	72,000	2,006
AF	Western Avenue east of Flower Street	4	64,800	25,242
AG	Sonora Avenue west of Air Way	4	64,800	13,949
AH	Chevy Chase Drive west of Railroad Track	2	28,800	6,451
AI	Grandview Avenue west of Air Way	4	72,000	2,210
AJ	Main Street east of Los Angeles River	4	72,000	15,398
AK	Main Street west of Los Angeles River	4	72,000	16,356
AL	Avenue 19 north of Figueroa Street (bridge)	2	30,000	12,430

Source: California High-Speed Rail Authority, 2019
Roadways identified in the ID column are depicted on Figure 3.2-1.

The roadway segment volume and LOS analysis was conducted using the traffic counts and roadway segment capacity values defined by SCAG Regional Model documentation (Authority 2019).

Roadway Operations

Table 3.2-10 provides a summary of existing peak-hour vehicle volumes for the analyzed roadway segments within the RSA. All of the study roadway segments currently operate at LOS A, which designates good operating conditions, with the exception of Flower Street west of Air Way in the p.m. peak hour and Avenue 19 north of Figueroa Street (bridge) in the a.m. and p.m. peak hours. Avenue 19, north of Figueroa Street, is currently operating at LOS F during both the a.m. and p.m. peak hours.

Table 3.2-10 Existing Alignment Roadway Segment Operations

ID	Roadway Segment	Capacity (veh/hr)	AM Peak (veh/hr)	AM Peak V/C	AM Peak LOS	PM Peak (veh/hr)	PM Peak V/C	PM Peak LOS
AC	Brazil Street west of Railroad Track	1,200	115	0.096	A	122	0.102	A
AD	Doran Street west of Railroad Track	1,200	438	0.365	A	452	0.377	A
AE	Flower Street west of Air Way	3,000	169	0.056	A	316	0.105	A
AF	Western Avenue east of Flower Street	2,700	1,557	0.577	A	1,902	0.704	C
AG	Sonora Avenue west of Air Way	2,700	985	0.365	A	1,208	0.447	A
AH	Chevy Chase Drive west of Railroad Track	1,200	403	0.336	A	555	0.463	A
AI	Grandview Avenue west of Air Way	3,000	159	0.053	A	263	0.088	A
AJ	Main Street east of Los Angeles River	3,000	1,736	0.579	A	1,485	0.495	A
AK	Main Street west of Los Angeles River	3,000	1,735	0.578	A	1,415	0.472	A
AL	Avenue 19 north of Figueroa Street (Bridge)	1,250	1,837	1.470	F[1]	1,368	1.094	F[1]

Source: California High-Speed Rail Authority, 2019
Roadways identified in the ID column are depicted On Figure 3.2-1.
[1] Intersection operates at a poor LOS (LOS E/F)
ADT = average daily traffic V/C = volume-to-capacity ratio
LOS = level-of-service veh/hr = vehicles per hour

Intersection LOS analyses were conducted using the traffic counts, analyzed and processed volumes, and fieldwork and other data within the Synchro analysis program. The detailed results of the existing conditions analysis for the RSA intersections are provided in Table 5-3 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019).

While most of the transportation RSA's signalized intersections currently operate at LOS D or better, the following intersections currently operate at unacceptable (E or F) LOS[3]:

- San Fernando Road at Ruberta Avenue (p.m. peak hour)
- Grand Central Avenue at Sonora Avenue (p.m. peak hour)
- San Fernando Road at Norton Avenue (p.m. peak hour)
- Flower Street at Fairmont Avenue (p.m. peak hour)
- San Fernando Road at Alma Street (p.m. peak hour)
- SR 134 Eastbound On-/Off-Ramp – Commercial Street at Doran Street (a.m. and p.m. peak hours)

[3] Refer to Section 3.2.4.3 for an expanded discussion of LOS, Tables 3.2-5 and 3.2-6 for the vehicle delay associated with LOS at intersections, and Table 3.2-7 for the volume to capacity associated with LOS along roadways.

- Glendale Boulevard at Glenfeliz Boulevard – Glenhurst Avenue (a.m. peak hour)
- San Fernando Road at Brand Boulevard (a.m. peak hour)
- San Fernando Road at Private Road (a.m. peak hour)
- Avenue 18 at Spring Street at Broadway (a.m. peak hour)
- Mission Road at Cesar E. Chavez Avenue (a.m. peak hour)

Burbank Airport Station Area Traffic Volumes

The Burbank Airport Station is proposed between N Hollywood Way, N San Fernando Boulevard, and Hollywood Burbank Airport. The Burbank Airport Station area includes light industrial and residential development within the city of Burbank, Hollywood Burbank Airport, the I-5 corridor to the northeast and north of the airport, and SR 134 to the south.

Table 5-5 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) provides existing daily vehicle volumes at the analyzed roadway segments in the Burbank Airport Station area. The roadway segment volume and LOS analysis was conducted using the traffic counts and roadway segment capacity values defined by SCAG Regional Model documentation.

The remaining study roadway segments currently operate at operating conditions LOS D or better. As seen in Table 5-6 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019), none of the roadway segments currently operates at LOS F. However, four of the study roadway segments on Hollywood Way currently operate at LOS E, which designates poor operating conditions:

- Hollywood Way south of I-5 northbound ramp (a.m. and p.m. peak hours)
- Hollywood Way south of Thornton Avenue (a.m. and p.m. peak hours)
- Hollywood Way north of Avon Street (a.m. and p.m. peak hours)
- Hollywood Way north of Victory Boulevard (p.m. peak hour)

Intersection LOS analyses were conducted using the traffic counts, analyzed and processed volumes, and fieldwork and other data within the Synchro analysis program. The detailed results of the existing conditions analysis for the RSA study intersections are provided in Table 5-7 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Most of the study intersections currently operate at LOS D or better within the Burbank Airport Station area. The following seven intersections currently operate at LOS E or F:

- SR 170 southbound ramps at Victory Boulevard (a.m. and p.m. peak hours)
- Hollywood Way at I-5 southbound ramps (a.m. and p.m. peak hours)
- San Fernando Road Minor at I-5 southbound ramps (a.m. and p.m. peak hours)
- Buena Vista Street at Winona Avenue (a.m. peak hour)
- I-5 northbound ramps at San Fernando Road (p.m. peak hour)
- Laurel Canyon at Sherman Way (a.m. and p.m. peak hours)
- Hollywood Way at Cohasset Street (a.m. and p.m. peak hours)

Freeway ramps near the Burbank Airport Station area were analyzed for queue length exceedance. The results of these studies are included in Table 6-8 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Of the seven ramps, the only existing SR 170 southbound ramp at Victory Boulevard in the a.m. peak hour has a queue length exceeding ramp length.

Los Angeles Union Station Area Traffic Volumes

The LAUS area includes the neighboring areas of the historic Los Angeles Pueblo on the west side of Alameda Street, Chinatown farther to the west and north, institutional uses to the north and northeast, a segment of US-101 to the south, and a portion of the core of downtown Los Angeles to the south.

Existing volumes in the vicinity of the LAUS station site were analyzed at study intersections.

Intersection LOS analyses were conducted using the traffic counts, analyzed and processed volumes, and fieldwork and other data within the Synchro analysis program. The detailed results of the existing conditions analysis for the RSA study intersections are provided in Table 5-9 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). The following 11 analyzed RSA intersections in the vicinity of the LAUS site operate at LOS E or F under existing conditions:

- Main Street at College Street (a.m. and p.m. peak hours)
- Elmyra Street at Main Street (p.m. peak hour)
- Hill Street at Ord Street (a.m. peak hour)
- Figueroa Street at Temple Street (a.m. and p.m. peak hours)
- Spring Street at Arcadia Street (p.m. peak hour)
- Vignes Street at Gateway Plaza-Ramirez Street (a.m. and p.m. peak hours)
- Center Street at Commercial Street (p.m. peak hour)
- Pleasant Avenue at I-10 eastbound on-/off-ramps/Kearney Street (a.m. and p.m. peak hours)
- US-101 southbound on-ramp/Pecan Street at Fourth Street (a.m. peak hour)
- US-101 southbound off-ramp at Fourth Street (a.m. peak hour)
- US-101 northbound off-ramp at Fourth Street (a.m. peak hour)

Freeway ramps near the area of the proposed LAUS HSR station were analyzed for queue length exceedance. The detailed results of these studies are included in Table 6-7 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). None of the existing 16 ramp queues exceeded ramp length for either the a.m. or p.m. peak hours.

Vehicle Miles Traveled

The Authority used the statewide travel demand model (BPM-V3) to estimate VMT (2016) in the RSA for the medium and high scenarios. In 2015, Los Angeles County estimated total VMT ranged between 73.24 and 73.39 billion miles (Business Plan Model – Version 3 (BPM-V3). For further details on the methodology for calculating VMT, please refer to the *Further Background on Cambridge Systematics Explanation of Ridership Forecasts* memorandum (Authority 2020) and *California High-Speed Rail Environmental Analysis: Method for Forecasting Vehicle-Miles of Travel Reduction* (Cambridge Systematics, Inc. 2020) in Appendix 3.2-A.

Transit and Bicycle/Pedestrian Conditions

Several providers operate transit services throughout the RSA. These include regional and local bus services, as well as local and regional rail. These providers and their routes are described below. Descriptions of existing bicycle and pedestrian facilities follow.

Regional Transit Service

The City of Los Angeles Department of Transportation (LADOT) provides commuter express bus service between downtown Los Angeles and the San Fernando Valley. City of Santa Clarita Transit provides commuter express bus service between LAUS and Santa Clarita. These transit services travel on the freeway during the express portions of trips and do not use the surface roadway network within the RSA.

Foothill Transit and other municipal bus operators provide commuter express bus service to the San Gabriel Valley and other areas and serve LAUS as part of express service or long-haul local service to and from downtown Los Angeles.

Greyhound, Megabus, and BoltBus operate regional bus service throughout California and the western U.S. from LAUS. Some of these services also have stops at the existing Burbank Downtown Metrolink Station.

Local Transit (within and between Cities)

Bus transit lines operated by Metro, the City of Glendale, and the City of Burbank serve the Burbank to Los Angeles Project Section. The core bus transit lines, however, are Metro Rapid Bus Lines:

- Metro Rapid Line 794—Serves the San Fernando Road corridor from downtown Los Angeles to Hollywood Burbank Airport and the Sylmar/San Fernando Metrolink Station.
- Metro Rapid Line 780—Serves the Los Feliz corridor, connecting Hollywood on the west and Pasadena on the east.
- Metro Rapid Line 751—Serves the south end of the San Fernando Road corridor, with connections to the Los Angeles County/University of Southern California Medical Center and Boyle Heights.

Transit Services near the High-Speed Rail Station Areas

Burbank Airport Station Area

Metro and the City of Burbank provide bus service in the vicinity of the proposed Burbank Airport Station. Multiple lines serve Hollywood Way on the east side of the airport. These lines run adjacent to the proposed station site, which would be located on the east side of Hollywood Way near the airport. The City of Burbank's transit system, BurbankBus, operates four local routes that connect employment hubs, local amenities, and regional transportation. The system connects the Media District, Hollywood Burbank Airport, the North Hollywood Red Line and Orange Line, and the Downtown Burbank Metrolink Station. Table 3.2-11 summarizes the two existing transit agency services within the Burbank Airport Station area.

Table 3.2-11 Summary of Transit Service near the Proposed Burbank Airport Station

Agency	Name / Line #	M–F Peak Frequency (minutes)	M–F All-Day Service / Weekend Service
Metro	94	15 to 20	Y / Y
	169	60	Y / Y
	222	26 to 45	Y / Y
	Rapid 794	15 to 20	Y / N
BurbankBus	Empire / Downtown	18	N / N
	Noho / Airport	15 to 20	Y / N

Source: Los Angeles County Metropolitan Transportation Authority, 2019; City of Burbank, 2019
M–F = Monday through Friday
Metro = Los Angeles County Metropolitan Transportation Authority
N = no
Y = yes

Los Angeles Union Station Area

Regional bus service at LAUS is provided by Metro and other municipal operators, including Foothill Transit, LADOT Commuter Express and LADOT Dash shuttle services, Montebello Bus Lines, Torrance Transit, the Santa Monica Big Blue Bus, the Antelope Valley Transit Authority, and Santa Clarita Transit. These bus services primarily serve LAUS via the Patsaouras Transit Plaza at the east side of the site or via the direct I-10 busway stops on Arcadia Street at the south side of the site and adjacent to US-101. In addition, Metro provides urban rail services with the Red, Purple, and Gold Lines. Table 3.2-12 lists the transit services around LAUS.

Table 3.2-12 Summary of Transit Service at Los Angeles Union Station

Agency	Name / Line #	M–F Peak Frequency (minutes)	M–F All-Day Service/Weekend Service	Average Weekday Ridership
Rail Lines On-Site[1]				
Metrolink	Antelope Valley Line	60	N / Y	5,883
	Ventura County Line	25	N / Y	3,800
	San Bernardino Line	26	N / Y	9,523
	Riverside Line	45 to 60	N / Y	4,282
	91/Perris Valley Line	30	N / Y	2,891
	Orange County Line	10	N / Y	8,562
Amtrak	Coast Starlight	N/A	N/A	N/A
	Southwest Chief	N/A	Y / -	N/A
	Pacific Surfliner	N/A	Y / -	N/A
	Sunset Limited	N/A	N/A	N/A
Metro Rail	Red Line	5 to 10	Y / Y	144,528
	Purple Line	6 to 10	Y / Y	
	Gold Line	7 to 14	Y / Y	51,814
Bus Service Off-Site[2]				
AVTA	785	30	N / N	N/A
Big Blue Bus Rapid	Freeway Express 10	15 to 30	Y / N	N/A
Bolt Bus	Bay	N/A	N / Y	N/A
	Los Angeles	N/A	N / Y	N/A
CA Shuttle	California Shuttle Bus	N/A	N / Y	N/A
City of Commerce	Transit Citadel Express	45	Y / Y	N/A
Foothill Transit	699	7 to 15	N / N	358
LADOT	DASH Downtown B	8	Y /N	N/A
	DASH Downtown D	5 to 15	Y /N	N/A
	DASH Lincoln Heights/Chinatown	30	Y / Y (Sat. only)	N/A
	Commuter Express Union Station/Bunker Hill Shuttle	Buses wait for each Metrolink train	N / N	N/A
	Commuter Express 431	25	N / N	N/A
	Commuter Express 534	25 to 30	N / N	N/A
Orange County Transportation Authority	701	20 to 30	N / N	N/A
Santa Clarita	794	25 to 60	N / N	N/A
Torrance Transit	Express 4	30 to 35	N / N	N/A
Megabus	Bay	N/A	N/A	N/A
	Los Angeles	N/A	N/A	N/A

Agency	Name / Line #	M–F Peak Frequency (minutes)	M–F All-Day Service/Weekend Service	Average Weekday Ridership
Metro	Dodger Stadium Express	10	- / game days only	N/A
	33 Overnight	10 to 20	Y / Y	10,073
	40	15 to 20	Y / Y	15,320
	68	18 to 20	Y / Y	4,965
	70	11 to 15	Y / Y	9,819
	71	15 to 20	N / Y	1,525
	76	14 to 27	Y / Y	8,762
	78/378	10 to 15	Y / Y	8,801
	79	10 to 15	Y / Y	N/A
	Express 442	40 to 50	N / N	215
	Express 485	20 to 50	N / N	1,409
	Rapid 704	10 to 15	Y / Y	10,171
	Rapid 728	13 to 20	Y / N	5,369
	Rapid 733	9 to 20	Y / Y	8,538
	Rapid 745	10 to 14	Y / Y	5,646
	Rapid 770	15 to 20	Y / Y (Sat. only)	6,918
Bus Service On-Site[1]				
FlyAway	Union Station	30	Y / Y	N/A
USC	Intercampus Route	N/A	N/A	N/A
Foothill Transit	Silver Streak	8 to 60	Y / Y	4,785
	481	10 to 20	N / N	277
	493	10 to 15	N / N	714
	495	20	N / N	369
	497	15	N / N	439
	498	10 to 20	N / N	793
	499	10 to 15	N / N	581
Metro	94	15 to 20	Y / Y	4,441
	169	60	Y / N	2,156
	222	26 to 45	Y / Y	1,359
	Express 487	20 to 30	Y / N	3,445
	Express 489	30 to 35	Y / Y	N/A
	Rapid 794	15 to 20	Y / N	4,228
	Silver Line 910/950	5 to 11	Y / Y	14,509

Source: California High-Speed Rail Authority, 2019

[1] "On-site" refers to the Patsaouras Transit Plaza at the east end of Los Angeles Union Station.

[2] "Off-site" refers to generally outside Patsaouras Plaza.

AVTA = Antelope Valley Transit Authority
CA = California
LADOT = City of Los Angeles Department of Transportation
M–F = Monday through Friday
Metro = Los Angeles County Metropolitan Transportation Authority
N = no
N/A = not available
Sat. = Saturday
USC = University of Southern California
Y = yes

Pedestrian and Bicycle Access near the High-Speed Rail Station Areas

Burbank Airport Station Area

For pedestrian access to the proposed Burbank Airport Station, there are existing sidewalks along roadways in the vicinity of the site, including Hollywood Way, San Fernando Way, and Winona Avenue, Buena Vista Street, Thornton Avenue, and Ontario Street.

For bicycle access to the proposed Burbank Airport Station, a limited network of bike lanes on nearby roadways exists. There is a Class 2 bike lane on Hollywood Way from San Fernando Boulevard to Pacific Avenue that connects to bicycle routes to the south and to a bicycle path parallel to San Fernando Road to the north.

There is an off-street bicycle path along San Fernando Boulevard and portions of the stormwater channel on the east side of I-5. Finally, there is a Class III (on-street shared bicycle route) on Pacific Avenue.

Los Angeles Union Station Area

The area around LAUS consists of a built-out pedestrian network that provides access to the many destinations and transit facilities surrounding the station. Below is an inventory of crosswalks and signalized intersections that provide safe pedestrian connections:

- Alameda Street/I-10 Westbound Off-Ramps-Arcadia Street
- Alameda Street/Los Angeles Street
- Alameda Street/Cesar E. Chavez Avenue
- Vignes Street/Cesar E. Chavez Avenue
- Vignes Street/Gateway Plaza-Ramirez Street

Bridges with sidewalks over US-101 provide pedestrian access to and from the Los Angeles Civic Center and the remainder of the Los Angeles downtown core area. The closest of these bridges to LAUS are provided at:

- Alameda Street via on-site pedestrian connections within the LAUS site, linking with the southwest corner of the site near the Alameda Street/Aliso Avenue intersection
- Los Angeles Street via access routes either through the Pueblo area or on roadways that front US-101, Arcadia Street on the north, and Aliso Street on the south.

Three roadways in the LAUS area currently include buffered bike lanes, which are listed below. These facilities all provide connections between the south and north sides of US-101. The Los Angeles Street segment provides a direct link to the LAUS site.

- Spring Street between Cesar E. Chavez Avenue and Ninth Street
- Main Street between Cesar E. Chavez Avenue and Ninth Street
- Los Angeles Street between Alameda Street and First Street

Two roadways in the vicinity of LAUS provide bicycle lanes:

- First Street between Beaudry Avenue and Aliso Street
- Third Street between San Pedro Street and Santa Fe Avenue

Two roadways in the vicinity of LAUS are classified as Class III bike routes:

- First Street between Aliso Street and Boyle Avenue
- Second Street between Spring Street and Santa Fe Avenue

Alameda Street, Vignes Street, and other roadways surrounding LAUS do not currently have dedicated bicycle facilities.

As discussed in Section 3.15, Parks, Recreation, and Open Space, off-street bike paths in the RSA include:

- Burbank Channel Bike Path North 1 between Cohasset Street and Tulare Avenue
- Burbank Channel Bike Path North 2 between Buena Vista Street/Winona Avenue and Jackson Street
- San Fernando Bike Path-Burbank (planned) between the Burbank-Los Angeles city limit and Downtown Burbank Metrolink Station
- San Fernando Railroad Bike Path (planned) along San Fernando Road between northern and southern city limits
- Chandler Bikeway (planned) between on W Chandler Boulevard between N Clybourn Avenue and North Mariposa
- Burbank Western Channel Bike Path along the Burbank-Western Flood Control Channel between Alameda Avenue and the Downtown Burbank Metrolink Station
- Burbank Western Channel Bike Path (planned) along the Burbank-Western Flood Control Channel from Alameda Avenue and the Glendale city limit
- Golden State Connector Bike Path (Caltrans) adjacent to the Golden State Freeway in the vicinity of Providencia Avenue
- Glendale Narrows Bikeway, which traverses the entire Glendale Narrows Riverwalk East
- Verdugo Wash Bike Path (planned) along Verdugo Wash Channel between north Glendale and the Los Angeles River
- Los Angeles River Bike Path along the west bank of the Los Angeles River connecting approximately 7 miles from the north side of Griffith Park at Riverside Drive (at Zoo Drive) along the Los Angeles River to Barclay Street in Elysian Valley

The Metro Bike Share bike rental program, which provides internet-based tracking of available bicycles and return bays, currently has a station at LAUS on the Alameda Street side with 23 docks available to users. Additionally, Metro provides a Bike Hub at LAUS that provides 192 bicycle parking spaces, bicycle rentals, and bicycle repairs.

3.2.5.4 Aviation

Hollywood Burbank Airport

Hollywood Burbank Airport, at the northern end of the Burbank to Los Angeles Project Section, is owned and managed by the Burbank-Glendale-Pasadena Airport Authority. As of November 2019, the airport served 132,000 flight operations per year (Hollywood Burbank Airport 2019). The facility serves commercial flights as well as general aviation.

Travelers can access to Hollywood Burbank Airport via the Metrolink Station on the Ventura County line, with an adjacent transit center served by Burbank City Bus. Parking for Hollywood Burbank Airport is provided in on-site structures to the south of the main terminal building, in remote lots at the northeast side of the airport, and to the east of the airport across Hollywood Way. The on-site parking structures currently provide paid short- and long-term parking for airport travelers. Other privately operated lots exist as well, including at the Burbank Marriott.

The Burbank-Glendale-Pasadena Airport Authority is planning to relocate its passenger terminal to a new location on the airport site. The Burbank-Glendale-Pasadena Airport Authority completed a ground access study and a transit-oriented development study for the airport area in 2014 to help develop improvements to the accessibility of the airport and its adjacent land uses (Authority 2019). The Hollywood Burbank Airport Terminal Replacement project was approved by City of Burbank voters under Measure B in November 2016. The B-6 Parcel, a portion of the Lockheed Martin Corporation's Skunk Works property, is the preferred site for the replacement passenger terminal.

Other Regional Airports

Whiteman Airport is a general aviation airport in Pacoima, approximately 5.5 miles north of Hollywood Burbank Airport. More than 80,000 general aviation takeoffs and landings occur each year at Whiteman Airport. Los Angeles County owns and operates this airport, which is publicly available to general aviation aircraft (Los Angeles County Department of Public Works, Aviation Division 2017). Roadways on the northeast side of the airport provide access. The Whiteman Airport runway is adjacent to and directly northeast of the proposed HSR alignment.

Other regional airports in the area that may be used by residents and employees within the RSA include Los Angeles International Airport to the southwest and Ontario International Airport to the east.

3.2.5.5 Rail Service

The following sections describe passenger and freight rail service in the RSA, as well as rail accident history.

Passenger Rail Service

The HSR Build Alternative would travel through the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Corridor. Under existing conditions, 73 passenger trains travel through the Burbank to Los Angeles Project Section each day.

Metrolink operates the Ventura County Line and the Antelope Valley Line within the RSA. The two services share the Union Pacific Railroad (UPRR) Valley Sub rail corridor north of LAUS and split into their respective corridors at the rail junction south of the proposed Burbank Airport Station. Both of these Metrolink lines serve the Downtown Burbank Metrolink Station.

The Antelope Valley Metrolink Line will serve the Burbank Airport Station area in the future as part of the new Hollywood Burbank Airport Station that is planned to be constructed by 2029. The Ventura County Metrolink line will also continue to serve the Burbank Airport Station area. Long-distance Amtrak service includes the Coast Starlight, Southwest Chief, and Sunset Limited lines. The Coast Starlight provides daily service connecting Seattle, Portland, Sacramento, and Los Angeles. The Southwest Chief serves Chicago, Kansas City, Albuquerque, Flagstaff, and Los Angeles with daily service. The Sunset Limited serves New Orleans, San Antonio, Tucson, Phoenix, and Los Angeles 3 days per week (Amtrak 2019).

Passenger rail traffic in this corridor is projected to increase in the future. According to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019), the LOSSAN Rail Corridor Agency, which operates the Amtrak Pacific Surfliner service between San Luis Obispo/Santa Barbara, LAUS, and San Diego, plans a service expansion that would increase intercity rail traffic from 12 daily trips to 18 daily trips in the corridor by 2040. The Amtrak Pacific Surfliner trains serve both LAUS and the Burbank-Bob Hope Airport Metrolink Station.

Freight Rail Service

UPRR operates a rail network of more than 3,283 miles throughout California. Major destinations include the San Joaquin Valley, the Port of Oakland, the metropolitan San Francisco Bay Area, and the metropolitan Los Angeles area.

The UPRR Los Angeles Service Unit operates trains with commodities moving in and out of the ports of Los Angeles and Long Beach, linking to other major gateways, including St. Louis, Chicago, Memphis, and New Orleans. There is a major system classification/transfer yard in West Colton and a regional yard in the city of Commerce.

Under existing conditions (2015), 11 freight trains travel through the Burbank to Los Angeles Project Section each day (LOSSAN Rail Corridor Agency 2012).

The SCAG 2012–2035 RTP/SCS contains a fiscally constrained project list of railroad freight projects. According to the Caltrans California State Rail Plan, the freight corridor will grow by up to 30 trains per day.

Railroad Accident History

The FRA Office of Safety Analysis (2016) provided data on rail accidents/incidents at-grade crossings. Review of the historical data for years 1975 to 2016 for the existing at-grade rail crossings within the RSA provided the following findings:

- Buena Vista Street—One incident involving a Metrolink train and three incidents involving Amtrak trains.
- Sonora Avenue—One incident involving a Metrolink train
- Grandview Street—Three incidents involving Metrolink trains and one incident involving a Southern Pacific Railroad (now UPRR) train
- Main Street—One incident involving a Metrolink train and two incidents involving an Atchison, Topeka & Santa Fe (now BNSF Railway) train.

FRA reported no other rail accidents for the existing at-grade rail crossings in the RSA.

3.2.6 Environmental Consequences

3.2.6.1 Overview

This section evaluates how the No Project Alternative and the HSR Build Alternative could affect transportation. As previously discussed, the analysis of CEQA impacts reflects California's shift in transportation impact analysis away from a focus on automobile delay (most commonly analyzed in terms of LOS) to a focus on VMT. The analysis of NEPA impacts includes LOS. The impacts of the HSR Build Alternative are described and organized as follows:

- **Construction Impacts**
  - Impact TR #1: Signalized Intersection Delay Increases during Construction
  - Impact TR #2: Unsignalized Intersection Delay Increases during Construction
  - Impact TR #3: Roadway Segment Volume-to-Capacity Ratio Changes during Construction
  - Impact TR #4: Circulation and Emergency Access Inadequacies during Construction
  - Impact TR #5: Design Feature Hazards, Incompatible Uses, or Conflict with Transit, Airport, Pedestrian, and Bicycle Plans during Construction
- **Operations Impacts**
  - Impact TR #6: Vehicle Miles Traveled during Operation
  - Impact TR #7: Signalized Intersection Delay Increases during Operation
  - Impact TR #8: Unsignalized Intersection Delay Increases during Operation
  - Impact TR #9: Roadway Segment Volume-to-Capacity Ratio Changes during Operation
  - Impact TR #10: Circulation and Emergency Access Inadequacies during Operation
  - Impact TR #11: Design Feature Hazards and/or Incompatible Uses during Operation
  - Impact TR #12: Conflicts with Transit, Bicycle, Pedestrian, or Aviation Facility Plans during Operation

3.2.6.2 No Project Alternative

Under the No Project Alternative, recent development trends within the Burbank to Los Angeles Project Section would continue, leading to increased congestion on regional roadways. In addition, there would be changes to transportation conditions because planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems would be built to accommodate planned growth in the RSA through the 2040 horizon year. Therefore, to assess future conditions under the No Project Alternative, it was assumed that all currently known programmed and funded improvements to the intercity transportation system (highway, rail, and transit) and reasonably foreseeable local development projects (with funding sources identified) from the SCAG RTP list would be developed by 2040. The following sections describe anticipated transportation impacts in the RSA under the No Project Alternative, including the two HSR station areas.

Highways and Major Roadways

The RTP identifies freeway and surface roadway improvement projects within the RSA to accommodate anticipated traffic volumes. These projects were incorporated into analysis for the No Project Alternative:

- I-5—From SR 134 to the SR 170 high-occupancy vehicle lanes (increasing from 8 to 10 lanes), build a modified interchange at Empire Avenue, auxiliary lanes northbound and southbound between Burbank Boulevard and Empire Avenue, and modify existing structures. Add an auxiliary lane between N Alameda Street and N Olive Street (Completion Year: 2019).
- Doran Street Grade Separation—Develop a grade separation at Doran Street on the Metrolink Valley Subdivision to improve safety (Completion Year: 2020).

Future highway and major roadway improvements that were assumed to be in place by 2029 included the following:

- Burbank Boulevard widening from Lankershim Boulevard to Cleon Avenue (from two to four lanes)
- San Fernando Boulevard closure north of Victory Place and south of Grismer Avenue
- Closure of I-5 slip ramps along San Fernando Boulevard
- Extension of Empire Avenue north of Victory Place to connect with San Fernando Boulevard south of Grismer Avenue
- New I-5 full-access diamond interchange along new Empire Avenue extension
- All-way stop control installation at San Fernando Boulevard Minor at I-5 southbound ramps

Alignment Roadway Level-of-Service

Traffic operations for conditions under the No Project Alternative in 2040 are shown in Tables 6-5 and 6-6 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-13 provides a summary of intersections and roadway segments that would exceed LOS thresholds. Nineteen intersections and two roadway segments would exceed the LOS thresholds.

Table 3.2-13 Alignment Roadway and Intersection Level-of-Service, Horizon Year (2040) No Project

Intersection or Roadway Segment	Exceeds LOS Threshold?		Meets Signal Warrants?
	AM Peak	PM Peak	
Signalized Intersections			
Flower Street at Western Avenue	No	Yes, LOS F	N/A
Glenoaks Boulevard at Western Avenue	No	Yes, LOS F	N/A
SR 134 EB On-/Off-Ramp-Commercial Street at Doran Street[1]	Yes, LOS F	Yes, LOS F	N/A
San Fernando Road at Chevy Chase Drive	Yes, LOS E	No	N/A
Glendale Boulevard at Glenfeliz Boulevard-Glenhurst Avenue[1]	Yes, LOS F	No	N/A
San Fernando Road at Brand Boulevard[1]	Yes, LOS E	Yes, LOS E	N/A
Pasadena Avenue at Broadway[1]	Yes, LOS F	No	N/A
Avenue 18 at Spring Street at Broadway[1]	Yes, LOS F	No	N/A
Daly Street at Main Street	Yes, LOS F	No	N/A
Mission Road at Cesar E. Chavez Avenue[1]	Yes, LOS F	Yes, LOS F	N/A
Unsignalized Intersections			
San Fernando Road at Linden Avenue[1]	No	Yes, LOS E	No
San Fernando Road at Ruberta Avenue[1]	No	Yes, LOS F	No
Grand Central Avenue at Sonora Avenue[1]	No	Yes, LOS F	No
Flower Street at Grandview Avenue	No	Yes, LOS E	No
San Fernando Road at Norton Avenue[1]	No	Yes, LOS E	No
Flower Street at Fairmont Avenue[1]	No	Yes, LOS F	No
San Fernando Road at Alma Street[1]	No	Yes, LOS E	No
San Fernando Road at Private Road[1]	Yes, LOS E	No	No
Wilhardt Street at Main Street[1]	Yes, LOS E	Yes, LOS F	No
Roadway Segments			
San Fernando Road west of Arvilla Avenue	Yes, LOS F	No	N/A
Avenue 19 north of Figueroa Street (Bridge)[1]	Yes, LOS F	Yes, LOS F	N/A

[1] Intersection or roadway would also operate at poor LOS (E or F) in the 2029 "opening year" in at least 1 peak hour.
EB = eastbound
HSR = High-Speed Rail
LOS = level-of-service
N/A = not applicable
SR = State Route

Burbank Airport Station Area Roadway Level-of-Service

Traffic operations for 2040 conditions under the No Project Alternative are shown in Tables 6-5 and 6-6 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-14 provides a summary of intersections and roadway segments that would exceed LOS thresholds. Six intersections and 10 roadway segments would exceed LOS thresholds.

Table 3.2-14 Burbank Airport Station Area Intersection and Roadway Level-of-Service, Horizon Year (2040) No Project

Intersection or Roadway Segment	Exceeds LOS Threshold?		Meets Signal Warrants?
	AM Peak	PM Peak	
Signalized Intersections			
Laurel Canyon at Sherman Way[1]	Yes, LOS F	Yes, LOS F	N/A
Buena Vista Street at San Fernando Boulevard[1]	Yes, LOS F	Yes, LOS E	N/A
Buena Vista Street at Empire Avenue[1]	Yes, LOS F	Yes, LOS F	N/A
Unsignalized Intersections			
Hollywood Way at I-5 SB ramps[1]	Yes, LOS F	Yes, LOS F	Yes
SR 170 SB ramps at Victory Boulevard[1]	Yes, LOS F	Yes, LOS F	Yes
Hollywood Way at Cohasset Street[1]	Yes, LOS F	Yes, LOS E	No
Roadway Segments			
Hollywood Way south of I-5 NB ramp[1]	Yes, LOS E	Yes, LOS F	N/A
Hollywood Way south of Thornton Avenue[1]	No	Yes, LOS F	N/A
Hollywood Way north of Avon Street[1]	No	Yes, LOS E	N/A
Hollywood Way north of Victory Boulevard[1]	No	Yes, LOS E	N/A
Buena Vista Street south of San Fernando Boulevard[1]	Yes, LOS E	Yes, LOS E	N/A
Empire Avenue east of Buena Vista Street[1]	No	Yes, LOS E	N/A
Victory Place west of Empire Street[1]	Yes, LOS F	Yes, LOS F	N/A

[1] Intersection or roadway would also operate at poor LOS (E or F) in the 2029 "opening year" in at least 1 peak hour.
I = Interstate
LOS = level-of-service
N/A = not applicable
NB = northbound
SB = southbound
SR = State Route

Los Angeles Union Station Area Roadway Level-of-Service

Detailed traffic operations for 2040 conditions under the No Project Alternative are shown in Tables 6-5 and 6-6 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-15 provides a summary of intersections and roadway segments that would exceed LOS thresholds. In total, 19 intersections would exceed LOS thresholds.

Table 3.2-15 Los Angeles Union Station Area Intersection Level-of-Service, Horizon Year (2040) No Project

Intersection or Roadway Segment	Exceeds LOS Threshold?		Meets Signal Warrants?
	AM Peak	PM Peak	
Signalized Intersections			
Broadway at College Street[1]	No	Yes, LOS E	N/A
Main Street at Alpine Street	No	Yes, LOS E	N/A
Hill Street at Ord Street	Yes, LOS E	No	N/A
Grand Avenue at Cesar E. Chavez Avenue	Yes, LOS F	No	N/A
Broadway at Cesar E. Chavez Avenue[1]	Yes, LOS F	No	N/A
Figueroa Street at Temple Street[1]	Yes, LOS F	Yes, LOS F	N/A

Intersection or Roadway Segment	Exceeds LOS Threshold?		Meets Signal Warrants?
	AM Peak	PM Peak	
Spring Street at Arcadia Street[1]	No	Yes, LOS F	N/A
Vignes Street at Gateway Plaza-Ramirez Street[1]	Yes, LOS F	Yes, LOS F	N/A
Garey Street – US-101 SB On-/Off-Ramps at Commercial Street	No	Yes, LOS E	N/A
US-101 SB On-Ramp – Pecan Street at 4th Street[1]	Yes, LOS F	Yes, LOS E	N/A
US-101 SB Off-Ramp at 4th Street[1]	Yes, LOS F	No	N/A
US-101 NB Off-Ramp at 4th Street[1]	Yes, LOS F	Yes, LOS E	N/A
Unsignalized Intersections			
Main Street at College Street[1]	Yes, LOS F	Yes, LOS F	Yes
Elmyra Street at Main Street[1]	Yes, LOS F	Yes, LOS F	Yes
Sotello Street at Main Street[1]	Yes, LOS E	Yes, LOS F	Yes
Center Street at Commercial Street[1]	No	Yes, LOS E	Yes
Alameda Street at Main Street-Ord Street[1]	Yes, LOS F	No	Yes
Pleasant Avenue at I-10 EB On-/Off-Ramps/Kearney Street[1]	Yes, LOS F	Yes, LOS F	Yes
Alameda Street at Newton Street (I-10 WB On-Ramp)[1]	No	Yes, LOS F	No

[1] Intersection or roadway would also operate at poor LOS (E or F) in the 2029 "opening year" in at least 1 peak hour.
EB = eastbound LOS = level-of-service NB = northbound US = U.S. Route
I = Interstate N/A = not applicable SB = southbound WB = westbound

Regional Transit Service

Metro provides core transit service via its Rapid Bus lines, which complement and connect to local bus service. Metro has defined an overall plan for Rapid Bus service and a future network for all Rapid Bus lines. There are no identified plans for new Rapid Bus service within the RSA. A bus rapid transit project, with additional infrastructure improvements, has been studied in the *Metro North Hollywood to Pasadena BRT Corridor Technical Study* (Metro 2017). The goal of the study was to assess connections between the North Hollywood Metro Orange Line/Red Line station on the west, the Burbank area, and the Metro Gold Line in Pasadena on the east.

Express bus services provided by Foothill Transit, Santa Clarita Transit, and other municipal operators in the proposed HSR station areas would continue to provide such services in the future. No additional major service improvements have been identified for any of the major transit service operators.

Aviation

The Hollywood Burbank Airport Terminal Replacement project was approved by the City of Burbank voters under Measure B in November 2016. The project will include development of surplus land into commercial uses; however, the number of gates at the airport is not proposed to increase from the current number. The number of daily flights also is not anticipated to increase. The airport, therefore, would have limited growth in new vehicle trips to and from the site when the project is completed. The growth would come only from increases in the number of passengers on the existing number of flights. Passenger activity through 2028 with the terminal replacement is not anticipated to exceed the maximum levels experienced in 2008 (RS&H, Inc. 2016) The SCAG RTP estimated that annual activity at the airport would reach 9.4 million passengers by 2035, but the growth would be from regional trends over the 24-year forecast period.

The separate but adjacent commercial project at Hollywood Burbank Airport, using surplus land from the terminal replacement project, would generate some new local area vehicle trips. However, land use projections are included in the SCAG model, and therefore the applied growth rates in the opening-year and future-year analysis take the HSR Build Alternative into account.

Rail Service

Passenger Rail

The LOSSAN Rail Corridor Agency is planning a service expansion of the Amtrak Pacific Surfliner service between San Luis Obispo/Santa Barbara, LAUS, and San Diego, which is anticipated to increase intercity rail traffic from 12 daily trips to 18 daily trips in the corridor by 2040 (extrapolated from planned annual increases and data in Section 2.9 of the *Burbank to Los Angeles Project Section Transportation Technical Report*). This long-term increase in rail passenger service frequency would provide benefits to the roadways within the RSA.

In the vicinity of the HSR Burbank Airport Station, Metrolink opened a new station in May 2018 on the Antelope Valley commuter rail line, immediately north of Hollywood Burbank Airport. This station provides access to the airport and is close to the future terminal area.

Freight Rail

UPRR operates a freight rail line in the RSA. According to the LOSSAN *Corridorwide Strategic Implementation Plan* (LOSSAN 2012), daily freight train trips in the project corridor are expected to grow from 11 in 2014 to 18 in 2030. No major freight rail improvement projects are identified in the *Corridorwide Strategic Implementation Plan* or the *California State Rail Plan* (Caltrans 2018).

Vehicle Miles Traveled

The Authority used the statewide travel demand model (BPM-V3) to estimate VMT (2016) in the RSA for medium and high scenarios. In 2040, under the No Project Alternative, the total VMT in Los Angeles County is anticipated to range between 76.06 and 87.08 billion miles. Please refer to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) for information on the 2029 VMT for the No Project Alternative.

3.2.6.3 High-Speed Rail Build Alternative

Construction Impacts

Construction of the HSR Build Alternative would involve demolition of existing structures, clearing, and grubbing; handling, storing, hauling, excavating, and placing fill; possible pile driving; and construction of aerial structures, bridges, road modifications, utility upgrades and relocations, HSR electrical systems, and railbeds. The following sections discuss how these activities would affect transportation access and mobility in the RSA.

Impact TR #1: Signalized Intersection Delay Increases during Construction

During construction of the new or modified grade separations, access may be prohibited due to construction activities and from temporary and permanent closures. Traffic would be detoured to other crossing locations, adding vehicle volumes and delays to intersections near those locations. Detours and closures are detailed further under Impact TR #4: Emergency Access Inadequacies.

The construction-period closures related to the grade separations along the HSR alignment were analyzed based on the estimated shifts in area traffic that would occur due to construction-related roadway closures. Estimates of traffic rerouting from the closure areas (including closed/removed intersections or roadway segments) were made based on the construction closure areas for the grade separation elements within the project footprint. Intersection LOS analysis was performed for the Existing Year (2015) Plus Construction scenario. The analysis provides the effects of the traffic rerouting patterns at the signalized intersections that would need to accommodate the detoured traffic.

Signalized intersections that would potentially be affected from project construction and permanent roadway changes are shown in Table 6-31 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-16 identifies the signalized intersections that would exceed LOS thresholds and impact thresholds for the Existing Year (2015) Plus Construction scenario.

Table 3.2-16 Signalized Intersections: Existing Year (2015) Plus Construction

Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Sunland Boulevard at I-5 NB Ramps	Signal	57.0	E*	75.9	E*
Sunland Boulevard at San Fernando Road Minor	Signal	16.7	B	60.9	E*
Sunland Boulevard at San Fernando Road	Signal	131.3	F*	218.6	F*
Vineland Avenue at Vanowen Street	Signal	32.9	C	71.8	E*
Strathern Street/Clybourn Avenue at San Fernando Road	Signal	191.9	F*	18.0	B
Hollywood Way at Glenoaks Boulevard[1]	Signal	39.7	D	90.5	F*
Hollywood Way SB at San Fernando Road	Signal	71.2	E*	10.9	B
Hollywood Way at Avon Street	Signal	Proposed Closure			
Avon Street at Empire Avenue	Signal	Proposed Closure			
Hollywood Way at Empire Avenue	Signal	Proposed Closure			
Hollywood Way at Victory Boulevard	Signal	215.3	F*	389.6	F*
Buena Vista Street at San Fernando Boulevard	Signal	212.8	F*	136.3	F*
Buena Vista Street at Thornton Avenue	Signal	60.2	E*	38.6	D
Buena Vista Street at Empire Avenue	Signal	142.3	F*	40.5	D
Buena Vista Street at Vanowen Street	Signal	117.6	F	62.1	E*
Buena Vista Street at Victory Boulevard	Signal	118.3	F*	148.9	F*
Empire Avenue at San Fernando Boulevard	Signal	5.6	A	179.0	F*
Burbank Boulevard at San Fernando Boulevard	Signal	109.2	F*	231.7	F*
Burbank Boulevard at I-5 SB Off-Ramp/Front St	Signal	Proposed Closure			
Burbank Boulevard at Victory Boulevard	Signal	483.0	F*	333.6	F*
Magnolia Boulevard at 1st Street	Signal	208.7	F*	277.3	F*
Magnolia Boulevard at Victory Boulevard	Signal	487.7	F*	591.8	F*
Olive Ave at 1st Street	Signal	129.3	F*	209.7	F*
Olive Ave at Victory Boulevard	Signal	148.2	F*	186.5	F*
San Fernando Road at Chevy Chase Drive	Signal	185.2	F*	144.1	F*

[1] This intersection would not experience additional delay that would exceed the threshold for increase in the delay time discussed in Section 3.2.4.3.
Intersections that operate at a poor LOS (LOS E/F) are marked with an asterisk.

I = Interstate
LOS = level-of-service
SB = southbound
sec = seconds

As shown in Table 3.2-16, the 21 signalized intersections within the RSA would operate at LOS E or F during construction during one or both peak hours. Except for the Hollywood Way at Glenoaks Boulevard intersection, all 20 other intersections in Table 3.2-16 would exceed LOS impact thresholds as a result of project construction.

In addition, Hollywood Way at Avon Street, Avon Street at Empire Avenue, Hollywood Way at Empire Avenue, and Burbank Boulevard at I-5 southbound off-ramp/Front Street would be closed during construction.

As discussed in Section 3.2.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#1 would require the contractor to develop a detailed CSTMP that would include a traffic control plan that establishes procedures for

temporary road closures, including access to residences and businesses during construction, lane closures, signage and flagpersons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. In addition, TR-IAMF#2 calls for a CTP that would require implementation of traffic controls during construction, such as temporary signage, identified construction routes, traffic speed limits, and flagpersons to direct traffic. The CTP would address how the contractor would carry out each phase of construction to maintain traffic flow during peak travel periods. TR-IAMF#3 would require the contractor to identify areas for parking construction vehicles to avoid restricting the use of public streets. TR-IAMF#6 would require the contractor to limit trips for materials deliveries and construction workers during peak hours to minimize traffic impacts on roadways. TR-IAMF#7 would require construction equipment to be brought to the construction sites using approved truck routes to reduce delays. TR-IAMF#8 would require measures to prevent construction from reducing roadway capacity during major athletic events or special events. However, impacts would remain at the intersections listed in Table 3.2-16 after implementation of the IAMFs. Therefore, TRAN-MM#1 identifies improvements at the 17 intersections listed in Table 3.2-17 to reduce construction impacts. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#1 such that the mitigation measure is feasible. If TRAN-MM#1 is implemented, no adverse impacts would occur at 9 of the study area signalized intersections based on LOS thresholds. However, even if TRAN-MM#1 is implemented, impacts would remain at the following eight intersections:

- Strathern Street/Clybourn Avenue at San Fernando Road (LOS E in the a.m. peak hour)
- Hollywood Way at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Buena Vista Street at San Fernando Boulevard (LOS F in the a.m. and p.m. peak hours)
- Buena Vista Street at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Magnolia Boulevard at 1st Street (LOS E in the p.m. peak hours)
- Magnolia Boulevard at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Olive Ave at 1st Street (LOS E in the a.m. peak hour and LOS F in the p.m. peak hours)
- San Fernando Road at Chevy Chase Drive (LOS E in the p.m. peak hours)

Traffic impacts on the three signalized intersections listed below would remain after implementation of IAMFs. There is no feasible mitigation available to reduce the traffic impacts from closures and detours during construction of the HSR Build Alternative at these intersections due to limited existing right-of-way and physical constraints.

- Sunland Boulevard at I-5 Northbound Ramps
- Buena Vista Street at Empire Avenue
- Empire Avenue at San Fernando Boulevard

Table 3.2-17 Mitigation Available for Signalized Intersection Construction Impacts Included in TRAN-MM#1

Location of Impact	Mitigation Measure Available
City of Burbank	
Sunland Boulevard at San Fernando Road Minor	Change westbound approach to one left-turn-only lane and one through/right lane through, and add restriping.
Sunland Boulevard at San Fernando Road	Provide southbound exclusive left-turn lane with protected phasing. Remove split phasing for northbound and southbound movements. Switch northbound left-turn lane to permissive phasing. Optimize splits. Restripe the eastbound approach to add a second eastbound left-turn lane.
Vineland Avenue at Vanowen Street	Minor eastbound/westbound restriping to enhance capacity.
Strathern Street/Clybourn Avenue at San Fernando Road	Restripe eastbound approach and restripe median to provide a second through lane (two through lanes and one shared through-right lane).

Location of Impact	Mitigation Measure Available
Hollywood Way SB at San Fernando Road	Redesignate northbound approach from one left-turn and one right-turn lane to one shared left-right and one right-turn lane, and prohibit right turns on red.
Hollywood Way at Victory Boulevard	Restripe northbound approach, including removal of a southbound through lane, to provide two right-turn lanes and two left-turn lanes. Increase signal cycle length from 90 to 120 seconds, and optimize splits.
Buena Vista Street at San Fernando Boulevard	Increase signal cycle length from 90 to 120 seconds and optimize splits.
Buena Vista Street at Thornton Avenue	Provide additional minor restriping on the southbound approach.
Buena Vista Street at Vanowen Street	Change northbound left-turn signal phasing from protected to permissive.
Buena Vista Street at Victory Boulevard	Restripe eastbound and westbound approaches to provide a second left-turn lane. Add southbound right-turn overlap phase.
Burbank Boulevard at San Fernando Boulevard	Restripe and re-designate lanes to provide two southbound left-turn lanes (Burbank Boulevard), one dedicated right-turn lane, and two through lanes at the westbound (San Fernando Boulevard) approach.
Burbank Boulevard at Victory Boulevard	Restripe eastbound (Victory Boulevard) approach to provide two through lanes and one right-turn lane. Restripe westbound (Victory Boulevard) approach to provide three left-turn lanes and two through lanes. Restripe northbound (Burbank Boulevard) approach to provide two left-turn lanes and two right-turn lanes. These designations assume that all approach and receiving movements on the north leg (Burbank Boulevard) will be closed due to construction. Increase signal cycle length to 120 seconds and optimize the splits.
Magnolia Boulevard at 1st Street	Restripe westbound (1st Street) approach to provide two left-turn lanes, one through lane, and one shared through-right lane. Restripe eastbound (1st Street) approach by decreasing the width of the two receiving lanes from 35 to 25 feet to provide a second right-turn lane. Increase the signal cycle length to 120.
Magnolia Boulevard at Victory Boulevard	Restripe the eastbound approach (by narrowing the receiving lane widths), changing the right-turn lane to a shared through-right lane, removing a through lane and adding a second left-turn lane. Restripe the southbound approach (also by narrowing the receiving lanes) to provide a second right-turn lane. Restripe the northbound approach to provide a dual left-turn lane, one through lane, and a shared thru-right lane. Increase the signal cycle length from 90 to 120 seconds and optimize the splits.
Olive Avenue at 1st Street	Restripe the westbound (1st Street) approach to convert the right-turn only lane to a shared through-right lane. Restripe the northbound (Olive Avenue) approach to convert the shared through-right lane to a right-turn only lane. Add a right-turn overlap phase on the eastbound (1st Street), southbound (Olive Avenue), and reconfigured northbound approaches.

Location of Impact	Mitigation Measure Available
Olive Avenue at Victory Boulevard	Restripe the eastbound (Victory Boulevard) approach to convert one of the through lanes to a left-turn lane and to convert the right-turn lane to a shared through-right lane. Restripe the westbound (Victory Boulevard) approach to convert the right-turn lane to a shared through-right lane. Implement a right-turn overlap phase on the northbound and southbound (Olive Avenue) approaches. Increase the signal cycle length to 110 seconds and optimize the splits.
City of Glendale	
San Fernando Road at Chevy Chase Drive	Change the westbound through/right-turn lane to a right-turn-only lane, add one westbound right-turn lane with an overlap phase, and change the eastbound and westbound left-turn movements to protected phasing.

Protected = A dedicated left-turn movement phase using green/yellow/red phase indications with arrows.
Permissive = A general phase for one approach, where left-turn movements yield to oncoming traffic.
Overlap = A dedicated right-turn lane phase that is allowed to operate concurrently with a left-turn phase, where those traffic phases can operate in parallel without conflict. U-turn movements from the left-turn lane would be prohibited.
Split = Signal phasing where a single approach has a dedicated phase, where all movements can proceed together and all other approaches have a red indication.
SB = southbound

CEQA Conclusion

This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #4 for a discussion of construction impacts to the transportation network from closures and detours for CEQA.

Impact TR #2: Unsignalized Intersection Delay Increases during Construction

As discussed above, shifts in area traffic due to construction-period closures related to the grade separations would increase delay at some locations within the RSA. Intersection LOS analysis was performed for the Existing Year (2015) Plus Construction scenario. The analysis provides the effects of the traffic rerouting patterns at the unsignalized intersections that would need to accommodate that traffic.

Unsignalized intersections that would potentially be affected by project construction and permanent roadway changes are shown in Table 6-31 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-18 summarizes the unsignalized intersections that would exceed LOS thresholds and impact thresholds for the Existing Year (2015) Plus Construction scenario, as well as one intersection that would be closed.

Table 3.2-18 Unsignalized Intersections: Existing Year (2015) Plus Construction

Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Hollywood Way at I-5 SB Ramps	TWSC	517.9	F*	35.3	E*
Sotello Street at Main Street	OWSC	20.1	C	421.2	F*
Wilhardt Street at Main Street	OWSC	Proposed Closure			

Intersections that operates at a poor LOS (LOS E/F) are marked with an asterisk.
I = Interstate
LOS = level-of-service
OWSC = one-way stop control
SB = southbound
TWSC = two-way stop control

As discussed in Section 3.2.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#1 would require the contractor to develop a detailed CSTMP that would include a traffic control plan that establishes procedures for temporary road closures, including access to residences and businesses during construction, lane closures, signage and flagpersons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. In addition, TR-IAMF#2 calls for a CTP that would require implementation of traffic controls during construction, such as temporary signage, identified construction routes, traffic speed limitations, and flagpersons to direct traffic. The CTP would address how the contractor would carry out each phase of construction to maintain traffic flow during peak travel periods. TR-IAMF#3 would require the contractor to identify areas for parking construction vehicles to avoid restricting the use of public streets. TR-IAMF#6 would require the contractor to limit trips for materials deliveries and construction workers during peak hours to minimize traffic impacts on roadways. TR-IAMF#7 would require construction equipment to be brought to the construction sites using approved truck routes to reduce delays. TR-IAMF#8 would require measures to prevent construction from reducing roadway capacity during major athletic events or special events. However, traffic impacts on the two unsignalized intersections listed above would remain after implementation of the IAMFs. TRAN-MM#1 identifies the improvements listed in Table 3.2-19 to reduce impacts at these two unsignalized intersections. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#1 such that the mitigation measure is feasible. If TRAN-MM#1 is implemented, no adverse impacts would occur at any of the study area unsignalized intersections based on LOS thresholds.

Table 3.2-19 Mitigation Available for Unsignalized Intersection Construction Impacts Included in TRAN-MM#1

Location of Impact	Mitigation Measures Considered
City of Burbank	
Hollywood Way at I-5 SB Ramps	Signalize the intersection
City of Los Angeles	
Sotello Street at Main Street	Signalize the intersection

I = Interstate
SB = southbound

CEQA Conclusion
This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #4 for a discussion of construction impacts to the transportation network from closures and detours for CEQA.

Impact TR #3: Roadway Segment Volume-to-Capacity Ratio Changes during Construction

Roadway segment analysis was performed for the Existing Year (2015) Plus Construction scenario. The resulting analysis provides the effects of the traffic rerouting patterns at the roadway segments that would need to accommodate the detoured traffic.

Roadway segments that would potentially be affected by project construction and permanent roadway changes are shown in Table 6-30 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-20 summarizes the roadway segments that would operate at LOS E or F and where increases in V/C ratios would exceed LOS impact thresholds for the Existing Year (2015) Plus Construction scenario. As shown in Table 3.2-20, six roadway segments within the RSA would operate at LOS E or F during both a.m. and p.m. peak hours during construction.

Table 3.2-20 Roadway Segment Volumes: Existing Year (2015) Plus Construction

Roadway Segment	Capacity (veh/hr)	AM Peak (veh/hr)	AM Peak V/C	AM Peak LOS	PM Peak (veh/hr)	PM Peak V/C	PM Peak LOS
Hollywood Way south of Thornton Avenue	3,200	3,488	1.090	F*	3,849	1.203	F*
Hollywood Way north of Avon Street	3,200	3,417	1.068	F*	3,778	1.181	F*
Hollywood Way north of Victory Boulevard	2,900	3,783	1.304	F*	4,159	1.434	F*
Victory Place west of Empire Street	1,100	1,022	0.929	E*	1,140	1.036	F*
Victory Boulevard east of Hollywood Way	2,900	2,674	0.922	E*	2,959	1.020	F*
San Fernando Road- West of Arvilla Avenue	2,900	1,491	1.297	F*	1,128	0.981	E*

Intersections that operate at a poor LOS (LOS E/F) are marked with an asterisk.
LOS = level-of-service
veh/hr = vehicles per hour
V/C = volume-to-capacity ratio

As discussed in Section 3.2.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. SS-IAMF#1 would require the contractor to develop a detailed CSTMP that would include a traffic control plan that establishes procedures for temporary road closures, including access to residences and businesses during construction, lane closures, signage and flagpersons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. In addition, TR-IAMF#2 calls for a CTP that would require implementation of traffic controls during construction, such as temporary signage, identified construction routes, traffic speed limitations, and flagpersons to direct traffic. The CTP would address how the contractor would carry out each phase of construction to maintain traffic flow during peak travel periods. TR-IAMF#3 would require the contractor to identify areas for parking construction vehicles to avoid restricting the use of public streets. TR-IAMF#6 would require the contractor to limit trips for materials deliveries and construction workers during peak hours to minimize traffic impacts on roadways. TR-IAMF#7 would require construction equipment to be brought to the construction sites using approved truck routes to reduce delays. TR-IAMF#8 would require measures to prevent construction from reducing roadway capacity during major athletic events or special events. However, traffic impacts on the six roadway segments listed above would remain after implementation of the IAMFs. Mitigation at these locations is not feasible due to limited existing right-of-way and physical constraints. Mitigation would require widening of the roadways to add travel lanes, and acquisition of additional right-of-way by the Authority might be necessary in some areas. This would require the relocation and reconstruction of sidewalks and driveway aprons for all parcels with direct access to these roadways. The widenings might also require the landscaping to be replaced on adjacent parcels after widening, or parking lots might need to be reconfigured. For some parcels, new parking impacts may occur because off-street parking spaces might be lost to provide the additional right-of-way required for the widenings. For some parcels, partial or full acquisition might be required to provide the additional right-of-way. For these reasons, no improvements at these locations are considered feasible. Therefore, impacts would remain at the six roadway segments.

CEQA Conclusion

This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #4 for a discussion of construction impacts to the transportation network from closures and detours for CEQA.

Impact TR #4: Circulation and Emergency Access Inadequacies during Construction

Circulation (including emergency access) through and to the project site may be affected during construction of the HSR Build Alternative. The HSR Build Alternative would be built at varying locations during different time periods over an anticipated 5.5-year period; therefore, the access

restrictions and other circulation impacts discussed above would occur within the project vicinity over that period. Although the preliminary construction schedule assumes the grade separations would all be constructed simultaneously, this is a worst-case scenario and alternative access would be provided. However, construction of the HSR Build Alternative would not permanently result in inadequate circulation and emergency access within the RSA.

The HSR Build Alternative could lead to temporary disruption of transportation system operations due to increased construction-related traffic from material deliveries and spoils removal, construction equipment, and worker trips to and from the construction site. An increase in heavy truck traffic would occur on the designated routes to deliver construction materials to the construction site and to remove spoils from the active construction areas. Construction traffic along truck routes could result in permanent damage to elements of the roadway system, such as pavement.

Construction of the HSR Build Alternative would require roadway closures and detours, which would increase traffic congestion and delays along the detour routes. Temporary construction-related detours are shown on Figure 3.2-3 (Sheets 1 through 3) and are described in the bullets below. Most of the street closures and detours would occur within the city of Burbank. Closures and detours would take place at the following five locations:

- Hollywood Way—The construction of the cut-and-cover tunnel alignment would require Hollywood Way to be partially closed, with one lane in each direction remaining open.
- Empire Avenue—Proposed cut-and-cover and extended Lockheed channel structure may require closures along Empire Avenue. One lane in each direction would be open during construction, if possible. However, potential full closure of the roadway may be required during construction. Vehicles would be detoured to Buena Vista Street to the east and Clybourn Avenue to the west.
- Vanowen Street—The shoofly[4] track would be constructed partially within the existing rail right-of-way; however, most of the shoofly track would be constructed within the right-of-way of Vanowen Street to the south. The shoofly would temporarily reduce the roadway width of Vanowen Street to one lane in each direction. After construction, Vanowen Street would be fully restored and would have the same number of lanes as currently exist, except the width of the right-of-way would be reduced by 3 feet.

[4] A shoofly track is a temporary track used to avoid an obstacle that blocks movement on the existing track.

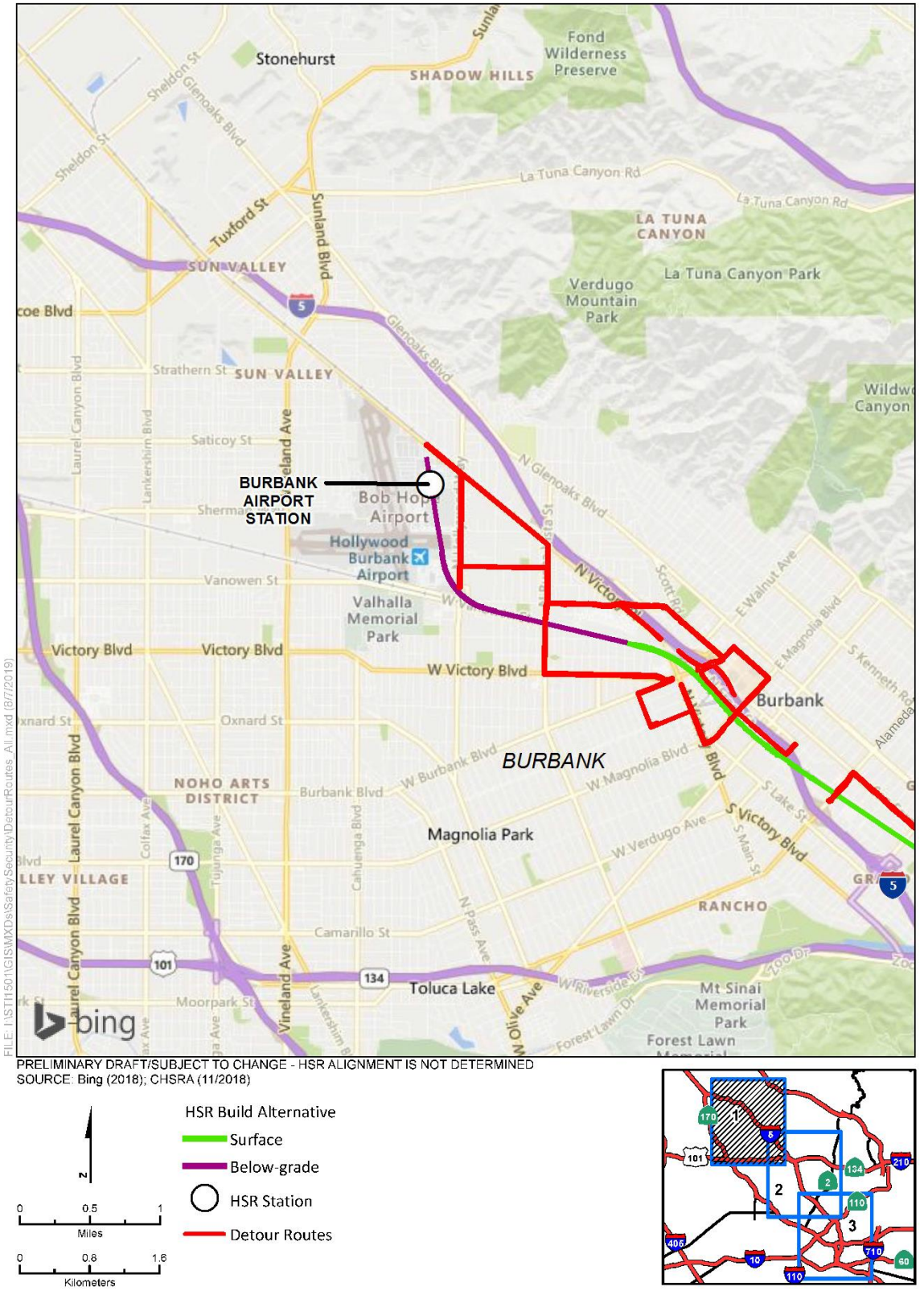


Figure 3.2-3 Construction Detours

(Sheet 1 of 3)

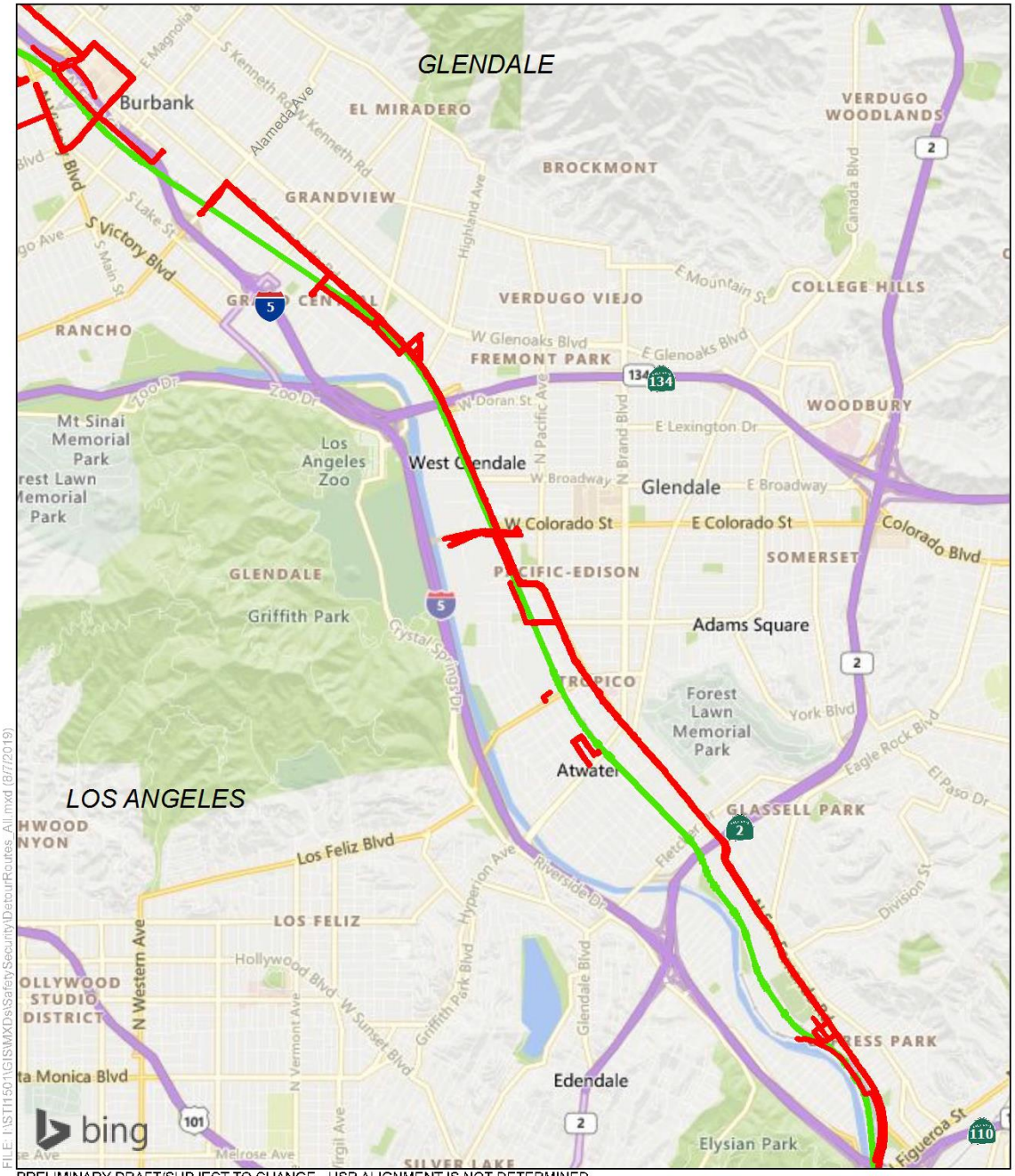


Figure 3.2-3 Construction Detours

(Sheet 2 of 3)

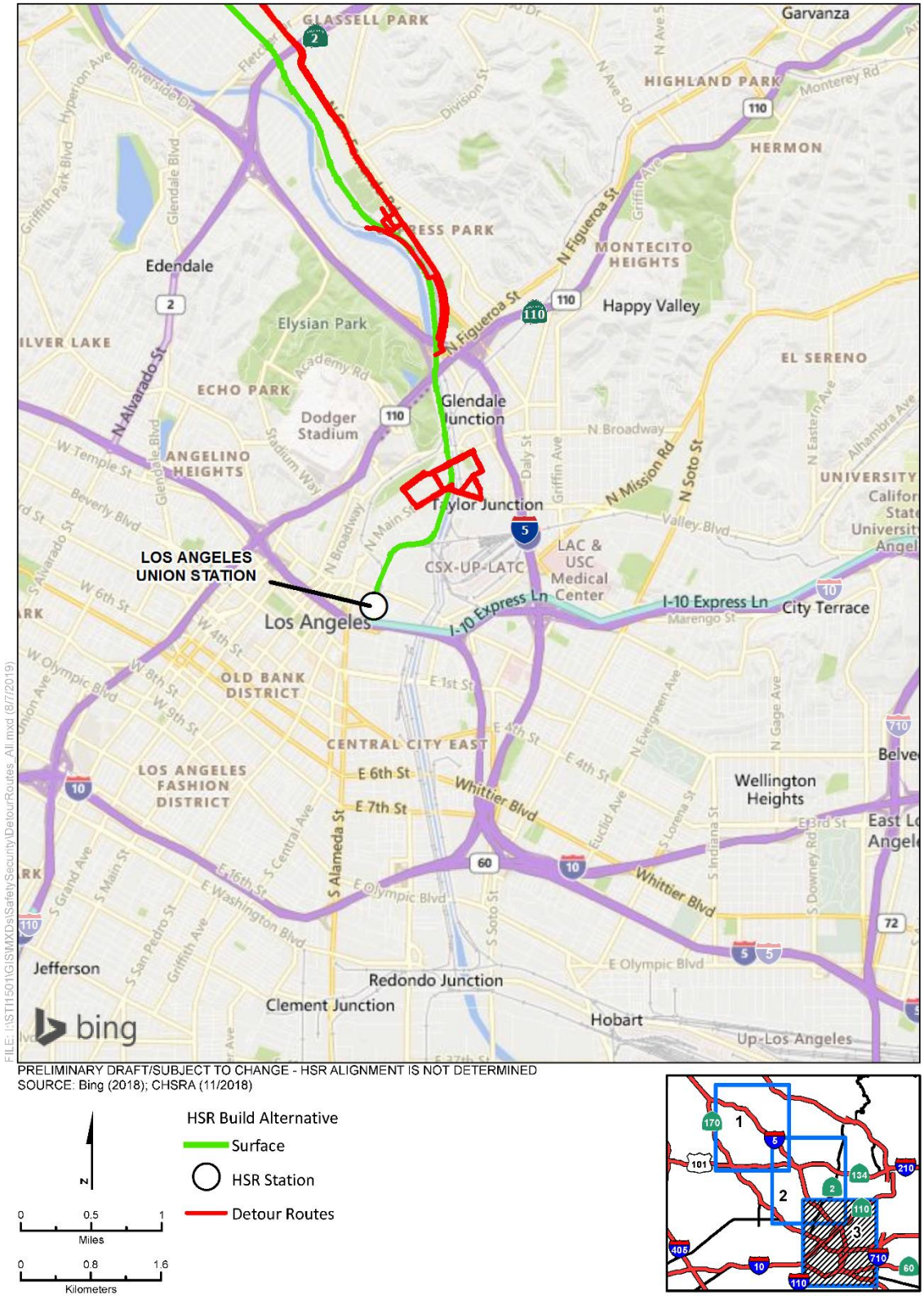


Figure 3.2-3 Construction Detours

(Sheet 3 of 3)

- Buena Vista Street—Buena Vista Street would be grade-separated for HSR tracks, while Metrolink and UPRR would be maintained at grade. During construction, Buena Vista Street would potentially be fully closed. Detours would occur at Pacific Avenue to the south and Empire Avenue to the north.
- Burbank Boulevard—The temporary closure of Burbank Boulevard (at the I-5 Interchange) would be required during construction of a new overhead roadway structure for Burbank Boulevard over I-5. This closure would require traffic to be rerouted to the Verdugo Avenue/Olive Avenue interchange to the south and the Empire Avenue/San Fernando Boulevard or Buena Vista interchanges to the north. Detours would occur via Buena Vista Street, Victory Boulevard, Victory Place, and San Fernando Boulevard.

Temporary construction impacts would occur at grade crossings where permanent new grade separations would not be built but where existing structures would be modified. Construction of modified undercrossings at these locations would require temporary long-term lane closures or roadway closures during construction of support segments and decking. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these closure operations, drivers traverse the construction area would experience delays when partial lane capacity is provided. The following list provides a brief discussion of each location:

- N Victory Place—Detoured vehicles would need to use Buena Vista Street to the west to travel north and south over the alignment. San Fernando Boulevard to the east could also serve as a detour route.
- Magnolia Boulevard—Work would not be conducted over the roadway; however, if detours are necessary, vehicles would need to use Olive Avenue to the south to travel east and west over the alignment.
- Olive Avenue—Work would not be conducted over the roadway; however, if detours are necessary, Magnolia Boulevard would be used to travel east and west over the alignment.
- Alameda Avenue—Detoured vehicles would use Western Avenue to the south to travel north and south over the alignment.
- Western Avenue—Detoured vehicles would use Alameda Avenue to the north or Sonora Avenue to the south to travel north and south over the alignment.

As discussed in Chapter 2, Alternatives, and as shown in Appendix 2-A, Road Crossings, two roads (Chevy Chase Drive and a private Los Angeles Department of Water and Power road) would be permanently closed where they cross the HSR Build Alternative alignment, while all other existing at-grade crossings would be grade-separated. The road crossing improvements would occur at the same locations as the existing roads. The grade-separation improvements would occur as early action projects, including those for Sonora Avenue, Grandview Avenue, Flower Street, Goodwin Avenue/Chevy Chase Drive, and Main Street. Although the preliminary construction schedule assumes the grade separations would all be constructed simultaneously, it is anticipated that one lane would be maintained in each direction during the majority of construction of these grade separations. However, construction of the grade separations may require the following limited closures:

- Sonora Avenue—Grade separation would affect property access to neighboring parcels.
- Grandview Avenue—Grade separation would require limited full closures.
- Flower Street/Pelanconi Avenue—Grade separation would require limited full closures of San Fernando Road.
- Chevy Chase Drive/Goodwin Avenue—Grade separation would require temporary full closure on Goodwin Avenue and West San Fernando Road.
- Main Street—Construction of the new bridge at Main Street would require limited full closure of Main Street.

The roadways that would experience temporary construction-related traffic impacts from lane closures, road closures, and detours are discussed under Impact TR #1, Impact TR #2, and Impact TR #3.

Vehicles traveling in the RSA would experience congestion and delay. Law enforcement, fire, and emergency services would experience increased response times due to construction-related road closures, detours, and increased traffic congestion in some locations. However, emergency vehicle access for police and fire protection services would be maintained at all times, and construction would be phased to prevent concurrent closures from limiting emergency access.

Several IAMFs are incorporated into the HSR Build Alternative design to help avoid and minimize impacts on circulation and emergency vehicle access during construction. SS-IAMF#1 would require the contractor to develop a detailed CSTMP that would include a traffic control plan that establishes procedures for temporary road closures (including access to residences and businesses during construction), lane closures, signage and flagpersons, temporary detour provisions, alternative bus and delivery routes, emergency vehicle access, and alternative access locations. TR-IAMF#2 would require the preparation of a CTP to minimize traffic impacts from construction and construction traffic on roadways. TR-IAMF#1 would require the contractor to repair pavement along truck routes that is damaged by operation of construction vehicles. TR-IAMF#2 would require truck traffic, either for excavation or for transporting construction materials to the site, to use the designated truck routes in each city. The movement of heavy construction equipment (such as cranes, bulldozers, and dump trucks) to and from the site would also occur on designated truck routes. Heavy construction equipment would remain on-site until no longer needed and would not be moved repeatedly to and from the construction site over public streets. TR-IAMF#3 would require the contractor to identify areas for parking construction vehicles to avoid restricting use of public streets. TR-IAMF#6 would require the contractor to limit trips for materials deliveries and construction workers during peak hours to minimize traffic impacts on roadways. TR-IAMF#7 would require construction equipment to be brought to the construction sites using approved truck routes to reduce delays.

The CTP and CSTMP, which would include provisions to maintain 24-hour access for emergency vehicles, would be reviewed and approved by affected emergency responders and the affected cities to ensure that the HSR Build Alternative does not affect emergency vehicle access during the construction period. Implementation of project IAMFs would minimize potential impacts on access and emergency access associated with construction activities.

CEQA Conclusion

SS-IAMF#1, TR-IAMF#1, TR-IAMF#2, TR-IAMF#3, TR-IAMF#6, and TR-IAMF#7 would reduce construction impacts on circulation and emergency access to less than significant under CEQA because the CTP and CSTMP would include provisions to maintain circulation and emergency access and reduce construction-related traffic. TR-IAMF#2 and SS-IAMF#1 would adequately maintain emergency access during construction. These measures would also reduce construction impacts such that construction of the HSR Build Alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. Therefore, CEQA does not require mitigation.

Impact TR #5: Design Feature Hazards, Incompatible Uses, or Conflict with Transit, Airport, Pedestrian, and Bicycle Plans during Construction

Project-related construction traffic would affect pedestrians, bicyclists, and bus service where existing sidewalks, paths, and bus stops need to be temporarily closed or relocated to allow construction of new facilities. Construction activities may create temporary hazards for users of these pedestrian areas. These hazards would include heavy truck traffic to bring materials to the project site and to remove demolished or excavated materials. Additionally, lane closures and detours could create delays to pedestrians, cyclists, and transit users.

Project construction activities that would restrict existing roadway capacity or create full detours temporarily for tunnel sections, new overhead roadway structures, grade separation replacements, and new grade separation elements would also affect public bus transit service.

The effects would range from potential schedule delays where capacity is restricted to rerouting of service and providing temporary replacement bus stops where roadway closures take place. Based on their existing service, the following bus lines would be potentially affected during construction (grouped by the locations of major project construction elements):

- Tunnel Construction under Hollywood Way:
  - Burbank Bus Golden State Circulator
  - Burbank Bus – NoHo to Airport
  - Metro Bus Line 94
  - Metro Bus Line 165
  - Metro Bus Line 169
  - Metro Bus Line 222
  - Metro Bus Line 794
- Burbank Boulevard/I-5 Overhead Structure:
  - Metro Bus Line 154
  - Metro Bus Line 164
- Victory Place Reconfiguration:
  - Metro Bus Line 94
  - Metro Bus Line 165
  - Metro Bus Line 794
- Alameda Avenue Railroad Bridge Modification:
  - Metro Bus Line 96
  - Glendale Beeline Line 7
- Sonora Avenue Grade Separation:
  - Metro Bus Line 94
  - Metro Bus Line 183
  - Metro Bus Line 794
- Grandview Avenue Grade Separation:
  - Metro Bus Line 94
  - Metro Bus Line 183
  - Metro Bus Line 794
  - Glendale Beeline Line 12
- Flower Street/Pelanconi Avenue Grade Separation:
  - Metro Bus Line 94
  - Metro Bus Line 183
  - Metro Bus Line 794
  - Glendale Beeline Line 12
- Chevy Chase Drive/Goodwin Avenue Grade Separation:
  - Metro Bus Line 94
  - Metro Bus Line 201
  - Metro Bus Line 603
  - Metro Bus Line 794
  - Glendale Beeline Line 12
- Main Street Bridge:
  - Metro Bus Line 76
  - LADOT Dash Lincoln Heights/Chinatown Shuttle

The HSR Build Alternative would not create hazards to freight or passenger rail during construction of new HSR track. A section of existing railroad track within the Metrolink Ventura subdivision would be temporarily closed during construction of the below-grade portion of the

HSR alignment, and a temporary shoofly track would be built before closure of the existing railroad track to allow UPRR, Amtrak, and Metrolink trains to continue to operate without interference. The shoofly track would be built partially within the existing railroad right-of-way; however, most of the shoofly track would be built within Vanowen Street to the south. The shoofly would temporarily reduce the width of Vanowen Street to one lane in each direction during construction of the HSR trench and relocation of the Metrolink tracks near Hollywood Way. Additionally, the Downtown Burbank Metrolink Station would be reconfigured as part of the HSR Build Alternative and would provide pedestrian overhead structures and other safety features to allow the safe passage of Metrolink and HSR train traffic.

As discussed further in Section 3.11, Safety and Security, construction of the HSR Build Alternative would not create hazards to airport operations or disrupt air travel. A portion of the HSR Build Alternative crosses under Runway 8-26, Taxiway D, the proposed extended Taxiway C, and critical airport safety zones at the Hollywood Burbank Airport. For the portion of the tunnel alignment under the Hollywood Burbank Airport runway and taxiways, the preferred method of construction would be the sequential excavation method, which would avoid disruption to runway and taxiways operations during construction. The runway and taxiways systems are expected to remain fully operational during construction because the SEM minimizes surface disruption, which would be limited to the tunnel entry and exit points. These areas are located outside the runway areas and associated safety zones. All areas needed for construction, including the tunnel launch box and staging areas, would be outside of the airfield and critical airport safety zones. Figure 2-45 in Chapter 2, Alternatives, depicts the location of the sequential excavation method tunnel, as well as the approximate locations of the tunnel launch boxes.

Tall structures, especially when aggregated, can pose an obstruction to air travel and may interfere with terrestrial-based communications, navigation, and surveillance and weather equipment due to frequency interference, scattering of radar beams, or attenuation of radar returns. The HSR Build Alternative would not require use of equipment or the construction of objects taller than 100 feet within 2 miles of the Hollywood Burbank Airport or within the airport land use compatibility plan area for the Hollywood Burbank Airport. Cranes used during construction of the improvements at Burbank Airport Station would not exceed 80 feet in height. Additionally, the use of tall construction equipment (e.g., cranes and drill rigs) affecting National Airspace System (NAS) would require flagging and lighting in accordance with Federal Aviation Administration (FAA) regulations. Additionally, the Burbank Airport Station would be primarily constructed below grade with a portion of the facility above grade that would not exceed 60 feet in height.

To prevent the potential for disruption of airfield and airspace operations at the Hollywood Burbank Airport as a result of construction of the HSR Build Alternative, the HSR Build Alternative incorporates SS-IAMF#5, which requires the Authority and/or the construction contractor(s) to submit construction plans, and/or information to the FAA for approval as required by the Code of Federal Regulations (CFR), Title 14, Part 77. Specifically, CFR, Title 14, Part 77 states that all applicants proposing any construction or alterations that may affect navigable airspace must file a Notice of Proposed Construction or Alteration (Form 7460-1) with the FAA. This notice allows the FAA to conduct an initial screening determination regarding a project. Information submitted to the FAA would include the location of planned HSR construction and construction staging areas within and adjacent to the boundary of the Hollywood Burbank Airport, the types and height of proposed equipment, and planned time/duration of construction, to ensure construction within and adjacent to the boundary of Hollywood Burbank Airport does not intrude into imaginary surfaces as defined in 14 C.F.R. section 77.9(b). Additionally, SS-IAMF#5 requires the implementation of measures required by the FAA to ensure continued safety of air navigation during HSR construction pursuant to 14 C.F.R. section 77.5(c).

As stated above, the FAA would review and approve the construction plans for improvements at or in the vicinity of Burbank Airport that could obstruct airspace or impact airport operations. A Notice of Proposed Construction or Alteration (FAA Form 7460-1) for the HSR Build Alternative was filed with the FAA on November 21, 2019, requesting a preliminary determination on the proposed improvements. On March 5, 2020, the FAA provided a preliminary determination to the

Authority that the FAA does not object to the construction of the portion of the tunnel under Runway 8-26, Taxiway D, the proposed extended Taxiway C, and critical airport safety zones with respect to the safe and efficient use of navigable airspace and the safety of persons and property on the ground, conditioned on certain requirements outlined in this determination. This determination expires on September 5, 2021 unless extended, revised or terminated. Additionally, this determination does not cover the construction of the station building north of Runway 8-26, which was recommended by the FAA to be refiled closer to the start of construction. A final determination based on the final design plans would be requested from FAA at least 45 days prior to construction. Additionally, project construction in the vicinity of the airport would be coordinated with the Airport Manager/Airport Traffic Control Tower, as requested by the FAA in the preliminary determination. The Authority will continue coordination with the FAA to ensure all necessary approvals are obtained. Incorporation of SS-IAMF#5, which requires the continued coordination with the FAA, including FAA's approval of the project design in the vicinity of Burbank Airport, would ensure that construction of the HSR Build Alternative would not result in a hazard or incompatible use to airport operations.

As discussed in Section 3.2.4.2, IAMFs are incorporated as part of the HSR Build Alternative design to help avoid and minimize impacts. TR-IAMF#2 and SS-IAMF#1 would minimize temporary disruption to pedestrians, bicyclists, and transit users during the construction period and avoid substantial impacts by requiring the Authority to prepare and implement a CTP for each stage of construction. The affected cities would review and approve the CTP and safety management plan to make sure local circulation would not affected during the construction period. TR-IAMF#4 and TR-IAMF#5 would require the contractor to prepare specific construction management plans to address maintenance of pedestrian and bicycle access during the construction period where feasible (i.e., meeting design, safety, and Americans with Disabilities Act requirements). TR-IAMF#11 would protect access to transit facilities during construction and minimize impacts on circulation for transit through alternate routes and protection of stops for transit. TR-IAMF#12 would also provide requirements to maintain access to pedestrian and bicycle facilities during construction and to make sure people using the facilities are not at risk. PK-IAMF#1 would require preparation of a technical memorandum that identifies design measures for safe access to existing recreational facilities, such as bike and pedestrian facilities. TR-IAMF#9 would reduce impacts on other freight and passenger rail operators by requiring repair of any structural damage to freight and public railways during construction and by building shoofly track areas to allow existing trains to bypass construction. These IAMFs would minimize potential impacts associated with construction activities related to freight and passenger rail operations, and they would minimize potential temporary impacts on pedestrians, bicyclists, and transit users.

Construction of the HSR Build Alternative would not include permanent design feature hazards or safety risks. However, as summarized below, the HSR Build Alternative may require permanent easements from the planned San Fernando Bike Path (Planned Phase 3) in the city of Burbank, from the San Fernando Railroad Bike Path[5] in the city of Glendale, and from the planned extension of the Los Angeles River Bike Path in the City of Los Angeles (see Section 3.15, Parks and Recreation, for more information).

Permanent easements and acquisitions required for operation of the HSR Build Alternative would reroute approximately 0.28 mile of the planned Phase 3 of the San Fernando Bike Path and would impact access and connectivity to this resource if it exists at the time of HSR construction. If the planned Phase 3 of the San Fernando Bike Path does not exist at the time of construction, the Authority will be required to consult with the official with jurisdiction to identify an alternative route for the implementation of the planned resource, as required by Mitigation Measure PR-MM#4. Preliminary engineering shows that that the planned Class I San Fernando Bike Path

[5] The San Fernando Railroad Bike Path is a proposed Class I (off-street) bike path that would extend from the northern limits to the southern limits of the City of Glendale. This bike path is a unique recreational resource and is separate from the Planned Phase 3 of the San Fernando Bike Path, which is a proposed Class I (off-street) bike path that would extend from the Burbank/Los Angeles city limits to the Downtown Burbank Metrolink Station.

(Planned Phase 3) could feasibly be rerouted as an unprotected Class II bike lane along N Lake Street. The rerouting of the San Fernando Bike Path (Planned Phase 3) and redesignation from Class I to Class II would maintain the functionality of this resource and the connectivity of the planned bicycle network. Therefore, no permanent easements or acquisitions would be required if the planned Phase 3 portion of the bike path is rerouted prior to HSR construction. Rerouting of the planned Phase 3 of the San Fernando Bike Path would maintain connectivity of the planned bicycle network and would therefore not conflict with an adopted bicycle plan.

The HSR Build Alternative would require a permanent easement within the Metro-owned right-of-way, along the entire 4.5-mile planned San Fernando Railroad Bike Path, to operate HSR trains in this area. Therefore, if the bike path exists at the time of HSR construction, the entire San Fernando Railroad Bike Path would be removed and the Authority would be required to consult with the official with jurisdiction to relocate the entirety of this resource on an alternative route, as required by Mitigation Measure PR-MM#4. If the bike path does not exist at the time of HSR construction, the permanent easement needed for operation of the HSR Build Alternative would preclude the planned San Fernando Railroad Bike Path from being constructed in its current alignment. If a feasible alternative route is not identified, the loss of the planned San Fernando Railroad Bike Path in its current alignment may result in a loss of connectivity of the planned bicycle network and change the benefits of the adopted bicycle plans, resulting in an incompatible use.

Permanent easements and acquisitions may be required from the planned extension of the Los River Bike Path for operation of the HSR Build Alternative and would impact access and connectivity to this resource if it exists at the time of HSR construction. However, the affected portions of the planned extension of the bike path appear to be minor in size in relation to the entire extension of the bike path, although exact acreages of impact were not generated because of the multiple alignment options for the path. If the planned extension does not exist at the time of construction, the Authority will be required to consult with the official with jurisdiction to identify an alternative route for the implementation of the planned extension, including maintaining connectivity, as required by Mitigation Measure PR-MM#4. Therefore, no permanent easements or acquisitions would be required if the planned extension is rerouted prior to HSR project construction. Rerouting of the Los Angeles River Bike Path would maintain connectivity of the planned bicycle network and would therefore not conflict with an adopted bicycle plan.

CEQA Conclusion

SS-IAMF#1, SS-IAMF#5, TR-IAMF#2, TR-IAMF#4, TR-IAMF#5, TR-IAMF#9, TR-IAMF#11, TR-IAMF#12, and PK-IAMF#1 would reduce impacts related to pedestrians, bicyclists, transit, airport, and freight or passenger rail through implementation of measures to reduce hazards and conflict with transit, pedestrian, and bicycle plans during construction. However, even with implementation of these IAMFs, permanent construction impacts related to safety risks and conflict with bicycle plans due to incompatible uses would be significant under CEQA because construction of the HSR Build Alternative would require conversion of land planned for three bike paths (the San Fernando Bike Path, San Fernando Railroad Bike Path, and the Los Angeles River Bike Path) to rail right-of-way. Therefore, CEQA requires mitigation. PR-MM#4 would require the Authority to coordinate with officials with jurisdiction over the planned bike paths to identify alternative routes for these bicycle facilities. It is anticipated that the San Fernando Bike Path (Phase 3) and Los Angeles River Bike Path can feasibly be rerouted. However, the San Fernando Railroad Bike Path may not be able to be rerouted, resulting in a loss of connectivity of a planned bicycle network and potentially leading to safety risks for pedestrians and bicycles. Therefore, even with mitigation, impacts on the San Fernando Railroad Bike Path would be significant and unavoidable.

Operations Impacts

Operation of the HSR Build Alternative would include inspection and maintenance along the track and railroad right-of-way, as well as on structures, fencing, power system, train control, electric interconnection facilities, and communications system. Operations and maintenance activities are

described in Chapter 2, Alternatives. The following sections discuss how operation of the HSR Build Alternative would affect transportation access and mobility during project operation.

Impact TR #6: Vehicle Miles Traveled during Operation

Total VMT in Los Angeles County would be reduced, overall, with the HSR project in operation. VMT would be reduced with the commencement of HSR operations, and VMT reductions would be expected to improve each year of operation. Please refer to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) for additional information about VMT reduction in the opening year of HSR operations. In 2040, implementation of the HSR Build Alternative would result in a net reduction in VMT ranging from more than 931 million to more than 1,287 million, as shown in Table 3.2-21. Please refer to the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) for information on the 2029 VMT for the HSR Build Alternative.

Table 3.2-21 Annual Vehicle Miles Traveled

County	VMT with No Project Alternative (2040)[1]	VMT with HSR Build Alternative (2040)[1]	Net Reduction in VMT with HSR Build Alternative (2040)[1]
Los Angeles County	86,055,909,405 to 87,075,870,799	85,124,593,011 to 85,788,971,213	931,316,394 to 1,286,899,586

Source: Business Plan Model – Version 3 (BPM-V3)

[1] The values in the table represent the ranges of VMT based on the medium and high ridership forecasts, consistent with the 2040 scenario forecasts presented in the California High-Speed Rail Authority's 2016 Business Plan. The lower end of the range for VMT corresponds to the high ridership forecast and the higher end of the range for VMT corresponds to the medium ridership forecast.

HSR = high-speed rail VMT = vehicle miles traveled

The change in VMT represents total number of vehicle miles driven that would be removed from regional roadways. The HSR Build Alternative would provide benefits to the regional transportation system by reducing vehicle trips on the freeways through the diversion of intercity trips from road trips to HSR. This is a net benefit to transportation and traffic operations because a reduction in VMT helps maintain or potentially improve the operating conditions of regional roadways. This reduction in future vehicle trips would improve the LOS of the regional roadway system and reduce the overall VMT compared with existing conditions and compared with the No Project Alternative.

As described in Chapter 2.5.2.8, a rail spur that serves an industry in Burbank would be removed. As a result, it is anticipated that deliveries to this property would shift from rail to truck transport, which would increase VMT. However, the increase in VMT from additional trips to one property would have no material effect on the overall decrease in VMT within Los Angeles County that would result from implementation of the HSR Build Alternative.

CEQA Conclusion

As of December 28, 2018, the CEQA Guidelines were amended to include VMT thresholds, effective July 1, 2020. Under the revised CEQA Guidelines, transportation projects that reduce VMT are presumed to have a less than significant impact on transportation. The impact under CEQA would be less than significant because the HSR Build Alternative would not result in a net increase of VMT over the baseline condition. The project would result in an overall decrease in VMT throughout the region and the state, resulting in a beneficial impact on VMT. The project would also be fully consistent with CEQA Guidelines Section 15064.3. Therefore, CEQA does not require mitigation.

Impact TR #7: Signalized Intersection Delay Increases during Operation

The HSR Build Alternative would provide benefits to the regional transportation system by reducing vehicle trips on the freeways by diverting intercity trips from road trips to HSR. This reduction in future vehicle trips would improve the system performance of the regional roadway system compared with existing conditions and compared with the No Project Alternative.

Although the HSR Build Alternative would improve the regional transportation system, it would also result in impacts on some signalized intersections along the alignment and near the HSR stations. These alignments and HSR station area impacts are discussed in the subsections below.

As discussed in Section 3.2.4.3, signalized intersections that would not exceed LOS and delay thresholds would not result in a significant impact. The *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) includes additional data and analysis on traffic effects for the assumed 2029 opening year of Phase 1 HSR service.

Alignment

Traffic operations for the Horizon Year (2040) Plus Project scenario are shown in Table 6-21 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-22 provides a summary of signalized intersections that would exceed LOS thresholds.

Table 3.2-22 Alignment Signalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
Flower Street at Western Avenue	No	Yes, LOS F	No[1]
Glenoaks Boulevard at Western Avenue	No	Yes, LOS F	No[1]
Air Way at Grandview Avenue	Yes, LOS E	No	No[1]
SR 134 EB On-/Off-Ramp-Commercial Street at Doran Street	Yes, LOS F	Yes, LOS F	No[1]
San Fernando Road at Chevy Chase Drive	Yes, LOS F	Yes, LOS F	Yes[2] (a.m. and p.m. peak hours)
Glendale Boulevard at Glenfeliz Boulevard-Glenhurst Avenue	Yes, LOS F	No	No[1]
San Fernando Road at Brand Boulevard	Yes, LOS E	Yes, LOS E	No[1]
Pasadena Avenue at Broadway	Yes, LOS F	No	Yes (a.m. peak hour)
Avenue 18 at Spring Street at Broadway	Yes, LOS F	No	No[1]
Daly Street at Main Street	Yes, LOS F	No	No[1]
Mission Road at Cesar E. Chavez Avenue	Yes, LOS F	Yes, LOS F	Yes[2] (a.m. and p.m. peak hours)
State Street at Marengo Street	Yes, LOS E	No	Yes (a.m. peak hour)

[1] This intersection would not experience additional delay exceeding the threshold for increase in the delay time discussed in Section 3.2.4.3.
[2] Intersection would also exceed the impact threshold in the Opening Year (2029) Plus Project scenario in at least 1 peak hour.
EB = eastbound SR = State Route
LOS = level-of-service

A total of 12 signalized intersections would operate at LOS E or F for the Horizon Year (2040) Plus Project scenario. Of these intersections, four signalized intersections would exceed the transportation impact thresholds for one or both peak periods. These include the following intersections: San Fernando Road at Chevy Chase Drive, Pasadena Avenue at Broadway, Mission Road at Cesar E. Chavez Avenue, and State Street at Marengo Street. TRAN-MM#2 identifies the improvements listed in Table 3.2-23 to reduce impacts at State Street at Marengo Street. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#2 such that the mitigation measure is feasible. If TRAN-MM#2 is implemented, no adverse impacts would occur at State Street at Marengo Street intersection based on LOS thresholds.

Table 3.2-23 Mitigation Available for Alignment Signalized Intersection Impacts, Horizon Year (2040) Plus Project Included in TRAN-MM#2

Location of Impact	Mitigation Measures Considered
City of Los Angeles	
State Street at Marengo Street	Add one westbound through lane, which would require the removal of some on-street parking.

Due to limited existing right-of-way and physical constraints, no improvements are considered feasible to reduce the impacts at the remaining three signalized intersections. Therefore, impacts would remain at the following three locations:

- San Fernando Road at Chevy Chase Drive (a.m. and p.m. peak hours)
- Pasadena Avenue at Broadway (a.m. and p.m. peak hours)
- Mission Road at Cesar E. Chavez Avenue (a.m. and p.m. peak hours)

Burbank Airport Station Area

Traffic operations for Horizon Year (2040) Plus Project conditions within the Burbank Airport Station area are shown in Table 6-23 of the *Burbank and Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-24 provides a summary of the signalized intersections that would exceed LOS thresholds.

Of the six signalized intersections that would operate at LOS E or F, three would exceed the transportation impact thresholds. TRAN-MM#2 identifies the improvements listed in Table 3.2-25 to reduce the impacts at the three signalized intersections. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#2 such that the mitigation measure is feasible. If TRAN-MM#2 is implemented, no adverse impacts would occur at the signalized intersections based on LOS thresholds.

Table 3.2-24 Burbank Airport Station Area Signalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
Sunland Boulevard at San Fernando Road Minor	No	Yes, LOS F	Yes[1] (p.m. peak hour)
Sunland Boulevard at San Fernando Road	Yes, LOS E	Yes, LOS F	Yes[1] (a.m. and p.m. peak hours)
Laurel Canyon at Sherman Way	Yes, LOS F	Yes, LOS F	No[2]
Hollywood Way at Thornton Avenue	No	Yes, LOS E	Yes (p.m. peak hour)
Buena Vista Street at San Fernando Boulevard	Yes, LOS F	Yes, LOS E	No[2]
Buena Vista Street at Empire Avenue	Yes, LOS F	Yes, LOS F	No[2]

[1] Intersection would also exceed impact threshold in the Opening Year (2029) Plus Project in at least 1 peak hour.
[2] This intersection would not experience additional delay exceeding the threshold for increase in the delay time discussed in Section 3.2.4.3.
HSR = high-speed rail SB = southbound
LOS = level-of-service SR = State Route
NB = northbound

Table 3.2-25 Mitigation Available for Burbank Airport Station Area Signalized Intersection Impacts, Horizon Year (2040) Plus Project Included in TRAN-MM#2

Location of Impact	Mitigation Measures Considered
City of Burbank	
Sunland Boulevard at San Fernando Road Minor	Widen westbound approach from westbound left-turn through lane and westbound right-turn pocket to westbound left-turn and westbound right through lanes. Optimize cycle length and splits.
Sunland Boulevard at San Fernando Road	Provide exclusive southbound lane with protected-permitted phasing and westbound right-turn lane with overlap phasing. Provide protected-permitted phasing for northbound left-turn lane. Optimize cycle length and splits.
Hollywood Way at Thornton Avenue	Optimize cycle length and splits.

Protected = A dedicated left-turn movement phase using green/yellow/red phase indications with arrows.
Split = Signal phasing where a single approach has a dedicated phase, and where all movements can proceed together and all other approaches have a red indication.
Protected-permitted: Left-turn phasing that begins with a protected phase (using green/yellow/red phase indications with arrows) but progresses to yield conditions where the indication is a solid green.
Overlap phasing: Right-turn phasing that provides a protected right-turn movement overlapping with a parallel protected left-turn movement, and where U-turns are prohibited at that left-turn movement.

Los Angeles Union Station Area

Traffic operations for the Horizon Year (2040) Plus Project scenario within the LAUS area are shown in Table 6-24 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-26 provides a summary of the 13 signalized intersections that would exceed LOS thresholds.

Of the 13 affected signalized intersections, 9 would exceed the transportation impact thresholds for one or both peak hours. TRAN-MM#2 identifies improvements to reduce impacts at five of the intersections; these mitigation improvements are listed in Table 3.2-27. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#2 such that the mitigation measure is feasible. If TRAN-MM#2 is implemented, no adverse impacts would occur at the 5 intersections listed in Table 3.2-27 based on LOS thresholds.

Table 3.2-26 Los Angeles Union Station Area Signalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
Broadway at College Street	No	Yes, LOS E	No[1]
Main Street at Alpine Street	No	Yes, LOS E	No[1]
Hill Street at Ord Street	Yes, LOS E	No	No[1]
Grand Avenue at Cesar E. Chavez Avenue	Yes, LOS F	No	Yes (a.m. peak hour)
Broadway at Cesar E. Chavez Avenue	Yes, LOS F	Yes, LOS E	Yes[2] (a.m. and p.m. peak hours)
Figueroa Street at Temple Street	Yes, LOS F	Yes, LOS F	Yes (a.m. and p.m. peak hours)
Spring Street at Arcadia Street	No	Yes, LOS F	No[1]
Alameda Street at Aliso Street-Commercial Street	No	Yes, LOS E	Yes (p.m. peak hour)
Vignes Street at Gateway Plaza-Ramirez Street[2]	Yes, LOS F	Yes, LOS F	Yes (p.m. peak hour)
Garey Street – US-101 SB On-/Off-ramps at commercial Street	No	Yes, LOS F	Yes[2] (p.m. peak hour)

Intersection	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
US-101 SB On-Ramp – Pecan Street at 4th Street	Yes, LOS F	Yes, LOS F	Yes[2] (a.m. and p.m. peak hours)
US-101 SB Off-Ramp at 4th Street	Yes, LOS F	No	Yes[2] (a.m. peak hour)
US-101 NB Off-Ramp at 4th Street	Yes, LOS F	Yes, LOS E	Yes[2] (a.m. peak hour)

[1] This intersection would not experience additional delay exceeding the threshold for increase in the delay time discussed in Section 3.2.4.3.
[2] This intersection would also exceed the impact threshold in the Opening Year (2029) Plus Project in at least 1 peak hour.
LOS = level-of-service SB = southbound
NB = northbound US = U.S. Route

Table 3.2-27 Mitigation Available for Los Angeles Union Station Area Signalized Intersection Impacts, Horizon Year (2040) Plus Project Included in TRAN-MM#2

Location of Impact	Mitigation Measures Considered
City of Los Angeles	
Grand Avenue at Cesar E. Chavez Avenue	Convert the eastbound right-turn-only lane to a through/right lane and add one receiving lane on Cesar E. Chavez Avenue, which would require removal of on-street parking and restriping.
Broadway at Cesar E. Chavez Avenue	Add a southbound left-turn lane, which would require removal of some on-street parking.
Figueroa Street at Temple Street	Convert the southbound right-turn-only lane to a through/right-turn lane and restripe the ramp south of the intersection to provide two receiving lanes.
Garey Street and US-101 Southbound On-/Off-Ramps at Commercial Street	Convert the westbound through/right-turn lane to a right-turn-only lane and add one westbound right-turn-only lane.
US-101 Northbound Off-Ramp at 4th Street	Add one northbound left-turn lane.

US = U.S. Route

No improvements are considered feasible at the remaining four signalized intersections due to limited existing right-of-way and physical constraints. Therefore, impacts would remain at the following four locations:

- Alameda Street at Aliso Street-Commercial Street (p.m. peak hour)
- Vignes Street at Gateway Plaza-Ramirez Street (p.m. peak hour)
- US-101 southbound on-ramp-Pecan Street at 4th Street (a.m. and p.m. peak hours)
- US-101 southbound off-ramps at Fourth Street (a.m. peak hour)

CEQA Conclusion
This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #6 for a discussion of operations impacts to the transportation network during operation for CEQA.

Impact TR #8: Unsignalized Intersection Delay Increases during Operation

The *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) includes additional data and analysis of traffic effects for the assumed Opening Year (2029) Plus Project Phase 1 HSR service. As discussed under Impact TR #7, the HSR Build Alternative would provide benefits to the regional transportation system by reducing vehicle trips on the freeways through the diversion of intercity trips from road trips to HSR. Although the HSR Build Alternative would improve the regional transportation system, it would also result in impacts on some unsignalized intersections along the alignment. These impacts are discussed in the subsections below.

As discussed in Section 3.2.4.3, an unsignalized intersection that did not exceed LOS and delay thresholds and did not satisfy a traffic signal warrant would not result in a significant impact.

Alignment
Traffic operations along the project alignment for the Horizon Year (2040) Plus Project scenario are shown in Tables 6-20 through 6-21 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-28 provides a summary of the unsignalized intersections that would exceed LOS thresholds.

Table 3.2-28 Alignment Unsignalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection or Roadway Segment	Exceeds LOS Threshold?		Meets Signal Warrants?	Impact?
	AM Peak	PM Peak		
San Fernando Road at Linden Avenue	No	Yes, LOS E	No	No[1]
San Fernando Road at Ruberta Avenue	No	Yes, LOS F	No	No[1]
Grand Central Avenue at Sonora Avenue	No	Yes, LOS F	No	No[1]
Flower Street at Grandview Avenue	No	Yes, LOS E	No	No[1]
San Fernando Road at Norton Avenue	No	Yes, LOS E	No	No[1]
Flower Street at Fairmont Avenue	No	Yes, LOS F	No	No[1]
San Fernando Road at Alma Street	No	Yes, LOS E	No	No[1]
San Fernando Road at Private Road	Yes, LOS E	No	No	No[1]

[1] This intersection would not experience additional delay exceeding the threshold for increase in the delay time discussed in Section 3.2.4.3.
LOS = level-of-service

A total of eight unsignalized intersections would operate at LOS E or F in the Horizon Year (2040) Plus Project scenario. Of these intersections, none would exceed the transportation impact thresholds.

Burbank Airport Station Area
Traffic operations for the Horizon Year (2040) Plus Project scenario in the Burbank Airport Station area are shown in Table 6-23 of the *Burbank and Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-29 provides a summary of the unsignalized intersections that would exceed LOS thresholds.

Table 3.2-29 Burbank Airport Station Area Unsignalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection	Exceeds LOS Threshold?		Meets Signal Warrants?	Impact?
	AM Peak	PM Peak		
Hollywood Way at I-5 SB ramps	Yes, LOS F	Yes, LOS F	Yes	Yes[1] (a.m. and p.m. peak hours)
SR 170 SB Ramps at Victory Boulevard	Yes, LOS F	Yes, LOS F	Yes	Yes[1] (a.m. and p.m. peak hours)
Hollywood Way at Cohasset Street E	Yes, LOS F	Yes, LOS F	Yes	Yes[1] (a.m. peak and p.m. peak hour)

[1] Intersection would also exceed impact threshold in the 2029 "opening year" in at least one peak hour.
I = Interstate SB = southbound
LOS = level-of-service SR = State Route

All of the three unsignalized intersections that would operate at LOS F listed above would exceed the transportation impact thresholds. TRAN-MM#2 identifies improvements that would reduce the impacts at these three unsignalized intersections. These improvements are listed in Table 3.2-30. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#2 such that the mitigation measure is feasible. If TRAN-MM#2 is implemented, no adverse impacts would occur at the unsignalized intersections based on LOS thresholds.

Table 3.2-30 Mitigation Available for Burbank Airport Station Area Unsignalized Intersection Impacts, Horizon Year (2040) Plus Project Included in TRAN-MM#2

Location of Impact	Mitigation Measures Considered
City of Burbank	
Hollywood Way at I-5 Southbound Ramps	Signalize the intersection.
SR 170 Southbound Ramp at Victory Boulevard	Signalize the intersection. Provide northbound right-turn lane and southbound right-turn lane protected phasing.
Hollywood Way at Cohasset Street E	Signalize the intersection.

I = Interstate
SR = State Route

Los Angeles Union Station Area

Traffic operations for the Horizon Year (2040) Plus Project scenario within the LAUS area are shown in Table 6-24 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-31 provides a summary of the seven unsignalized intersections that would exceed LOS thresholds.

Table 3.2-31 Los Angeles Union Station Area Unsignalized Intersection Level-of-Service, Horizon Year (2040) Plus Project

Intersection	Exceeds LOS Threshold?		Meets Signal Warrants?	Impact?
	AM Peak	PM Peak		
Main Street at College Street	Yes, LOS F	Yes, LOS F	Yes	Yes (a.m. peak hour)
Elmyra Street at Main Street	Yes, LOS F	Yes, LOS F	Yes	Yes (a.m. and p.m. peak hours)
Sotello Street at Main Street	Yes, LOS F	Yes, LOS F	Yes	Yes[1] (a.m. and p.m. peak hours)
Center Street at Commercial Street	No	Yes, LOS F	Yes	Yes[1] (p.m. peak hour)
Alameda Street at Main Street-Ord Street	Yes, LOS F	No	Yes	Yes (a.m. peak hour)
Pleasant Avenue at I-10 EB On-/Off-Ramps/Kearney Street	Yes, LOS F	Yes, LOS F	Yes	Yes (a.m. and p.m. peak hours)
Alameda Street at Newton Street (I-10 WB on-ramp)	No	Yes, LOS F	No	No[2]

[1] Intersection would also exceed the impact threshold in the 2029 "opening year" in at least 1 peak hour.
[2] This intersection would not experience additional delay exceeding the threshold for increase in the delay time discussed in Section 3.2.4.3.
EB = eastbound
I = Interstate
LOS = level-of-service
N/A = not applicable
WB = westbound

Of the seven affected unsignalized intersections, six would exceed the transportation impact thresholds. TRAN-MM#2 identifies the improvements listed in Table 3.2-32 to reduce impacts at these six unsignalized intersections. It is reasonable to expect that the applicable city would assume the right-of-way and maintenance responsibilities for any improvements identified in TRAN-MM#2 such that the mitigation measure is feasible. If TRAN-MM#2 is implemented, no adverse impacts would occur at the unsignalized intersections based on LOS thresholds.

Table 3.2-32 Mitigation Available for Los Angeles Union Station Area Unsignalized Intersection Impacts, Horizon Year (2040) Plus Project Included in TRAN-MM#2

Location of Impact	Mitigation Measures Considered
City of Los Angeles	
Main Street at College Street	Signalize the intersection.
Elmyra Street at Main Street	Signalize the intersection.
Sotello Street at Main Street	Signalize the intersection.
Center Street at Commercial Street	Signalize the intersection.
Alameda Street at Main Street-Ord Street	Signalize the intersection.
Pleasant Avenue at I-10 Eastbound On-/Off-Ramps/Kearney Street	Signalize the intersection.

I = Interstate

CEQA Conclusion

This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #6 for a discussion of operations impacts to the transportation network during operation for CEQA.

Impact TR #9: Roadway Segment Volume-to-Capacity Ratio Changes during Operation

The *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019) includes additional data and analysis on traffic effects for the assumed Opening Year (2029) Plus Project scenario of Phase 1 HSR service. As discussed under Impact TR #7, the HSR Build Alternative would provide benefits to the regional transportation system by reducing vehicle trips on the freeways through the diversion of intercity trips from road trips to HSR. Although the HSR Build Alternative would improve the regional transportation system, it would also result in impacts on some roadway segments along the alignment. These impacts are discussed below.

As discussed in Section 3.2.4.3, roadway segments that would not exceed the LOS and V/C ratio thresholds would not result in a significant impact.

Alignment

Traffic operations for the Horizon Year (2040) Plus Project scenario are shown in Table 6-20 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-33 provides a summary of the roadway segments that would exceed LOS thresholds.

Table 3.2-33 Alignment Roadway Level-of-Service, Horizon Year (2040) Plus Project

Roadway Segment	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
Avenue 19 North of Figueroa Street (Bridge)	Yes, LOS F	Yes, LOS F	No[2]

This roadway segment would not experience an increase in the volume-to-capacity ratio exceeding the threshold for increase in volume-to-capacity ratio discussed in Section 3.2.4.3. This roadway would also exceed the impact threshold in the Opening Year (2029) Plus Project during in at least 1 peak hour.
LOS = level-of-service

Only one roadway segment would operate at LOS E or F in the Horizon Year (2040) Plus Project scenario. However, this roadway segment would not exceed the transportation impact thresholds.

Burbank Airport Station Area

Traffic operations for the Horizon Year (2040) Plus Project scenario within the Burbank Airport Station area are shown in Table 6-22 of the *Burbank and Los Angeles Project Section Transportation Technical Report* (Authority 2019). Table 3.2-34 provides a summary of roadway segments that would exceed LOS thresholds.

Table 3.2-34 Burbank Airport Station Area Roadway Level-of-Service, Horizon Year (2040) Plus Project

Roadway Segment	Exceeds LOS Threshold?		Impact?
	AM Peak	PM Peak	
Hollywood Way south of I-5 NB ramp	Yes, LOS F	Yes, LOS F	Yes[1] (a.m. and p.m. peak hours)
Hollywood Way south of Winona Avenue	No, LOS D	Yes, LOS E	Yes[1] (p.m. peak hours)
Hollywood Way south of Thornton Avenue	Yes, LOS F	Yes, LOS F	Yes[1] (a.m. and p.m. peak hours)
Hollywood Way north of Avon Street	Yes, LOS F	Yes, LOS F	Yes[1] (a.m. and p.m. peak hours)
Hollywood Way north of Victory Boulevard	Yes, LOS F	Yes, LOS F	Yes[1] (a.m. and p.m. peak hours)
Hollywood Way south of Victory Boulevard	Yes, LOS E	Yes, LOS E	Yes[1] (a.m. and p.m. peak hours)
Buena Vista Street south of San Fernando Boulevard	Yes, LOS E	Yes, LOS F	No[2]
Empire Avenue east of Buena Vista Street	No, LOS C	Yes, LOS E	No[2]
Victory Place west of Empire Street	Yes, LOS F	Yes, LOS F	No[2]
Victory Boulevard west of Hollywood Way	No, LOS D	Yes, LOS E	Yes (p.m. peak hour)
San Fernando Road west of Arvilla Avenue	Yes, LOS F	Yes, LOS F	Yes[1] (a.m. and p.m. peak hour)

[1] This roadway would also exceed the impact threshold in the 2029 "opening year" in at least 1 peak hour.
[2] This roadway segment would not experience an increase in the volume-to-capacity ratio that would exceed the threshold for increase in volume-to-capacity ratio discussed in Section 3.2.4.3.
I = Interstate
LOS = level-of-service
NB = northbound

Of the 11 roadway segments in the Burbank Airport Station area that would operate at LOS E or F, only 8 would exceed the transportation impact thresholds. Improvements are not considered feasible at these locations due to limited existing right-of-way and physical constraints. Improvements would require widening of the roadways to add travel lanes, and acquisition of additional right-of-way by the Authority might be necessary in some areas. This would require the relocation and reconstruction of sidewalks and driveway aprons for all parcels with direct access to these roadways. The widenings might also require the landscaping to be replaced on adjacent parcels after widening, or parking lots might need to be reconfigured. For some parcels, new parking impacts may occur because off-street parking spaces might be lost to provide the additional right-of-way required for the widenings. For some parcels, partial or full acquisition might be required to provide the additional right-of-way. For these reasons, improvements at these locations are not considered feasible. Therefore, impacts would remain at these 8 locations.

Los Angeles Union Station Area

Traffic operations for Horizon Year (2040) Plus Project scenario within the LAUS area are shown in Table 6-24 of the *Burbank to Los Angeles Project Section Transportation Technical Report* (Authority 2019). No roadway segments would exceed LOS thresholds in 2040; therefore, none would exceed the transportation impact threshold.

CEQA Conclusion
This threshold is not applicable to CEQA because LOS is no longer the performance standard for transportation impacts for CEQA. Please refer to Impact TR #6 for a discussion of operations impacts to the transportation network during operation for CEQA.

Impact TR #10: Circulation and Emergency Access Inadequacies during Operation

The HSR Build Alternative was designed to provide adequate emergency access and would therefore not result in operations impacts on emergency access. In addition, the grade separations would provide a benefit to emergency access because passing trains and active grade-crossing safety equipment would no longer cause travel delays to emergency vehicles.

CEQA Conclusion
Operation and maintenance of the HSR Build Alternative would result in less than significant impacts under CEQA related to inadequate emergency access because adequate emergency access would be maintained and the grade separations would reduce travel delay to emergency vehicles. Therefore, CEQA does not require mitigation.

Impact TR #11: Design Feature Hazards and/or Incompatible Uses during Operation

The HSR Build Alternative was designed to minimize design feature hazards and incompatible uses related to transportation. As a rail facility, the HSR project is subject to specific design and safety requirements to prevent conflicts with other modes of transportation. In addition, most of the HSR project would be built in an existing rail corridor and would not conflict with the existing rail uses.

Positive train control (PTC) and grade separations included as part of the HSR Build Alternative would provide an overall benefit to rail safety. In order to reduce the safety risks associated with passenger and freight trains, the National Transportation Safety Board, FRA, and other agencies have mandated PTC, which is a train safety system designed to automatically implement safety protocols and provide communication with other trains to reduce the risk of a potential collision. Communication towers and ancillary facilities are included in the Burbank to Los Angeles Project Section to implement the FRA PTC requirements. PTC infrastructure consists of integrated command, control, communications, and information systems for controlling train movements that improve railroad safety by significantly reducing the probability of collisions between trains, casualties to roadway workers and damage to equipment, and over-speed accidents. PTC is especially important in “blended” corridors, such as in the Burbank to Los Angeles Project Section, where passenger trains need to safely share the same tracks with freight trains. Additionally, rail service would be enhanced by the grade separations built as part of the HSR Build Alternative for existing rail lines as early action projects. The grade separations would eliminate the potential for train and automobile/bicycle/pedestrian conflicts where roadways currently cross the railroad corridor at grade.

As discussed further in Section 3.11, Safety and Security, the HSR Build Alternative would not construct objects taller than 100 feet within 2 miles of an airport or within an airport land use compatibility plan area. The Burbank Airport Station would be primarily constructed below grade with a portion of the facility above grade. The portion of the facility aboveground would consist of the proposed terminal building at Burbank Airport station would comply with FAA height requirements. Additionally, the HSR Build Alternative alignment would be in an underground tunnel in the vicinity of Hollywood Burbank Airport (within the airport planning boundary/airport influence area), and would not have any interface with airport operations. Additionally, the FAA would review and approve the project plans and for improvements at or in the vicinity of Burbank Airport that could obstruct airspace or impact airport operations.

SS-IAMF#5 is incorporated into the HSR Build Alternative to address the potential for disruption of airfield and airspace operations at the Hollywood Burbank Airport during operation of the HSR. SS-IAMF#5 requires the Authority to submit project plans and/or information to the FAA as required by the Code of Federal Regulations, CFR Title 14, Part 77, to ensure design of permanent HSR features within and adjacent to the boundary of Hollywood Burbank Airport do not intrude into imaginary surfaces as defined in 14 C.F.R. Section 77.9 (b). Specifically, CFR Title 14, Part 77 states that all applicants proposing any construction or alterations that may affect

navigable airspace must file a Notice of Proposed Construction or Alteration (Form 7460-1) with the FAA. This notice allows the FAA to conduct an initial screening determination regarding a project design. SS-IAMF#5 also requires the implementation of measures required by the FAA to ensure continued safety of air navigation during HSR Build Alternative operation pursuant to CFR Title 14, Section 77.5 (c) and if necessary, coordination with the Hollywood Burbank Airport to amend the current Airport Layout Plan (ALP) for any permanent construction-related facilities required for the HSR project, to be submitted to the FAA for approval.

A Form 7460 for the HSR Build Alternative was filed with the FAA on November 21, 2020, requesting a preliminary determination on the proposed improvements. However, this determination does not cover the proposed station building north of Runway 8-26, which was recommended by the FAA to be refiled closer to the start of construction. A final determination based on the final design plans would be requested from FAA at least 45 days prior to construction. The Authority will continue coordination with the FAA to ensure all necessary approvals are obtained. Incorporation of SS-IAMF#5, which requires the continued coordination with the FAA, including FAA's approval of the project design in the vicinity of Burbank Airport, would ensure that the HSR Build Alternative would not result in a hazard or incompatible use to airport operations.

CEQA Conclusion

Impacts related to design feature hazards or incompatible uses would be less than significant under CEQA because there would be no design feature hazards or incompatible uses and the project includes measures (such as PTC and grade separations) to reduce conflicts between trains and other modes of transportation. Therefore, CEQA does not require mitigation.

Impact TR #12: Conflicts with Transit, Bicycle, Pedestrian, or Aviation Facility Plans during Operation

The following sections describe potential operations impacts on transit service, bicycle facilities, and pedestrian facilities, as well as aviation and passenger rail service.

Transit Service

Within the Burbank to Los Angeles Project Section, bus lines that travel in an east-west direction in the RSA and cross existing at-grade railroad crossings would operate with less delay because the railroad corridor would be completely grade-separated under the HSR Build Alternative. Passing trains and active grade-crossing safety equipment would no longer cause travel delays. This would be a beneficial effect of the HSR Build Alternative.

At the HSR Burbank Airport Station and LAUS station sites, some bus services would experience an increase in passenger loads during peak times. The HSR activity would increase demand for connecting transit services at the Burbank Airport Station (primarily Metro Bus and Metrolink) and at LAUS (Metro Bus and other municipal bus and shuttle service operators).

Bicycle Facilities

All major roads shown as part of the Los Angeles County, City of Burbank, City of Glendale, and City of Los Angeles bicycle plans would be grade-separated from the HSR system, and the HSR Build Alternative would allow for current and future planned bikeways, with the exception of the planned San Fernando Railroad Bike Path. The proposed Burbank Airport Station would include bike racks and bike lanes/facilities where they can be accommodated within the streets. At the Burbank Airport Station, the HSR Build Alternative would add approximately 34 peak-hour trips to the transit network from nonmotorized modes of transportation (i.e., bicycles and pedestrians), which would increase the number of bicyclists using the bike lanes/facilities in the vicinity of the station. Existing and planned pedestrian and bicycle facilities serving the vicinity of the proposed Burbank Airport Station are expected to adequately meet project demand because the HSR Build Alternative would provide facilities on-site to support these trips. The HSR Build Alternative would not affect bicycle facilities at LAUS.

Pedestrian Facilities

Existing pedestrian facilities within the project vicinity consist of sidewalks located along roadways that cross or are adjacent to the proposed HSR alignment. The Burbank Airport Station

site along San Fernando Boulevard would possibly alter the pedestrian facilities along Arvilla Avenue, Lockheed Drive, Cohasset Street, Hollywood Way, and Ontario Street because they are near the station area. The proposed HSR station would provide sidewalks, curb ramps, and crosswalks along the roadway and at the intersection realignments with Arvilla Avenue, Hollywood Way, and Ontario Street to enhance pedestrian access. The HSR Build Alternative would not affect pedestrian facilities at LAUS.

Aviation

Implementation of the overall HSR project would result in some changes in the demand for air travel on a statewide basis. The HSR system would provide more convenient access to airports for some travelers. The Burbank to Los Angeles Project Section would be adjacent to Hollywood Burbank Airport and would improve access to and from Hollywood Burbank Airport. However, the HSR system would also provide a reasonable alternative to air travel, and some trips within California that would have been made by air would be made using HSR instead, reducing demand for air travel. The HSR Build Alternative would not conflict with adopted aviation programs or otherwise decrease the performance or safety of aviation facilities. Coordination with the FAA on impacts related to aviation is currently ongoing.

Passenger Rail Service

The HSR Build Alternative would improve passenger rail service. Currently, Amtrak and Metrolink provide passenger rail service from Burbank to Los Angeles. As discussed in Section 2.5.1.6, Conventional Passenger Rail Improvements, Amtrak and Metrolink would continue to provide service after implementation of the HSR Build Alternative. In addition, the Los Angeles-San Diego-San Luis Obispo Rail Corridor Agency, which oversees the Amtrak Pacific Surfliner service between San Luis Obispo/Santa Barbara, LAUS, and San Diego, is planning a service expansion that would increase ridership by 50 percent in the corridor by 2030. Between 2016 and 2040, Metrolink service is expected to increase from 61 trains per day to 99 trains per day and Amtrak service is expected to increase from 12 trains per day to 18 trains per day. The HSR Build Alternative would also provide an additional option for passenger rail service between Burbank and Los Angeles, albeit costlier.

CEQA Conclusion

Operations and maintenance of HSR Build Alternative would result in impacts that would be less than significant under CEQA because there would be no transit, bicycle, pedestrian, or aviation policy, plan, facility, or program conflicts and because performance and safety would not be negatively affected. Therefore, CEQA does not require mitigation.

3.2.7 Mitigation Measures

The Authority has identified mitigation measures TRAN-MM#1 and TRAN-MM#2 for impacts under NEPA and mitigation measure PR-MM#4 for impacts under both NEPA and CEQA that cannot be avoided or minimized adequately by IAMFs.

TRAN-MM#1: Intersection Improvements for Construction Impacts

The following improvements are available for consideration to address construction-related traffic delay impacts under NEPA for the project. No mitigation is required under CEQA.

- Sunland Boulevard at San Fernando Road Minor—Change the westbound approach to one left-turn only lane and one through/right lane through restriping.
- Sunland Boulevard at San Fernando Road—Provide southbound exclusive left-turn lane with protected phasing. Remove split phasing for northbound and southbound movements. Switch northbound left-turn lane to permissive phasing. Restripe the eastbound approach to add a second eastbound left-turn lane.
- Vineland Avenue at Vanowen Street—Restripe eastbound and westbound approaches.
- Strathern Street/Clybourn Avenue at San Fernando Road—Restripe eastbound approach and slightly restripe the striped median to provide a second through lane (two through lanes and one shared through-right lane).

- Hollywood Way Southbound at San Fernando Road—Modify northbound approach from one left-turn and one right-turn lane to one shared left-right lane and one right-turn lane and prohibit right-turns on red.
- Hollywood Way at Victory Boulevard— Restripe the northbound approach, including removal of the southbound through lane, to provide two right-turn lanes and two left-turn lanes. Increase signal cycle length from 90 to 120 seconds
- Buena Vista Street at San Fernando Boulevard—Increase signal cycle length from 90 to 120 seconds and optimize splits.
- Buena Vista Street at Thornton Avenue—Restriping of the southbound approach.
- Buena Vista Street at Vanowen Street—Change northbound left-turn signal phasing from protected to permissive.
- Buena Vista Street at Victory Boulevard—Restripe the eastbound and westbound approaches to provide a second left-turn lane. Add a right-turn overlap for the southbound right-turn movement.
- Burbank Boulevard at San Fernando Boulevard—Restripe and redesignate lanes to provide two left-turn lanes in the southbound (Burbank Boulevard) direction and two dedicated right-turn lanes and two through lanes in the westbound (San Fernando Boulevard) direction.
- Burbank Boulevard at Victory Boulevard—Restripe the eastbound (Victory Boulevard) approach to provide two through lanes and one right-turn lane. Restripe the westbound (Victory Boulevard) approach to provide three left-turn lanes and two through lanes. Restripe the northbound (Burbank Boulevard) approach to provide two left-turn lanes and two right-turn lanes. These designations assume that all approach and receiving movements on the north leg (Burbank Boulevard) will be closed off due to construction. Increase the signal cycle length to 120 seconds.
- Magnolia Boulevard at 1st Street—Restripe the westbound (1st Street) approach to provide two left-turn lanes, two through lanes, and one shared through-right lane. Restripe the eastbound (1st street) approach by decreasing the width of the two receiving lanes to provide a second right-turn lane. Increase the signal cycle length to 120 seconds.
- Magnolia Boulevard at Victory Boulevard—Restripe the eastbound approach (by narrowing the receiving lane widths), changing the right-turn lane to a shared through-right lane, and removing an exclusive through lane and adding a second left-turn lane. Restripe the southbound approach (also through narrowing the receiving lanes) to provide a second right-turn lane. Restripe the northbound approach to provide a dual left-turn lane, one through lane, and a shared through-right lane. Increase the signal cycle length from 90 to 120 seconds.
- Olive Avenue at 1st Street—Restripe the westbound (1st Street) approach to convert the right-turn only lane to a shared through-right lane. Restripe the northbound (Olive Avenue) approach to convert the shared through-right lane to a right-turn lane. Add right-turn overlap phases on the eastbound (1st Street), southbound (Olive Avenue), and reconfigured northbound approaches.
- Olive Avenue at Victory Boulevard—Restripe the eastbound (Victory Boulevard) approach to convert one of the through lanes to a left-turn lane and to convert the right-turn lane to a shared through-right lane. Restripe the westbound (Victory Boulevard) approach to convert the right-turn lane to a shared through-right lane. Implement a right-turn overlap phase on the northbound and southbound (Olive Avenue) approaches. Increase the signal cycle length to 110 seconds.
- San Fernando Road at Chevy Chase Drive—Change the westbound through/right-turn lane to a right-only lane, add one westbound right-turn only lane, change the eastbound left-turn lane and the westbound left-turn lane to protected phasing, and add westbound right-turn overlap phase.

- Hollywood Way at I-5 Southbound Ramps—Signalize the intersection.
- Sotello Street at Main Street—Signalize the intersection.

Impacts from Implementing Mitigation Measure TRAN-MM#1

The impacts associated with implementation of TRAN-MM#1 are shown in Table 3.2-35. The improvements listed in TRAN-MM#1 include modification of signal phasing and timing, installation of new traffic signals, and restriping. All of the improvements would take place within existing city rights-of-way. No impacts would occur from modifying signal phasing and timing, because these changes are done electronically to the existing signals. Adding signals would generally be done within the existing pavement or disturbed graded right-of-way. Temporary traffic, noise, and dust impacts could occur to nearby properties; however, the construction at these locations would be limited in duration. Restriping would take place within existing pavement and could result in temporary traffic, noise, and air quality impacts. Additionally, yellow paint containing lead may need to be removed at some of the locations requiring restriping. The IAMFs and mitigation measures in Section 3.2, Transportation; Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; and Section 3.10 Hazardous Waste and Materials would be implemented for the intersection improvements and would address the traffic, noise, air quality, and hazardous waste impacts. Additionally, implementation of TRAN-MM#1 would benefit local circulation in the area by improving traffic operations. Because the intersection improvements would be permanent, these benefits would continue after completion of construction of the HSR Build Alternative. For these reasons, impacts from implementing the intersection improvements listed in TRAN-MM#1 would be less than significant under CEQA.

Table 3.2-35 Secondary Impacts of Mitigation Measure TRAN-MM#1

Intersection	Improvements	Approximate Construction Duration	Impacts
Sunland Boulevard at San Fernando Road Minor (Intersection #7)	• Change the westbound approach to one left-turn only lane and one through/right lane through restriping	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Sunland Boulevard at San Fernando Road (Intersection #8)	• Provide southbound exclusive left-turn lane with protected phasing. • Remove split phasing for northbound and southbound movements • Switch northbound left-turn lane to permissive phasing • Restripe the eastbound approach to add a second eastbound left-turn lane	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Vineland Avenue at Vanowen Street (Intersection #12)	• Restripe eastbound and westbound approaches	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Strathern Street/Clybourn Avenue at San Fernando Road (Intersection #15)	• Restripe eastbound approach and slightly restripe the striped median to provide a second through lane (two through lanes and one shared through-right lane)	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial and residential properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Hollywood Way Southbound at San Fernando Road (Intersection #32)	• Modify northbound approach from one left-turn and one right-turn lane to one shared left-right lane and one right-turn lane • Prohibit right-turns on red	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial low-income populations based on census block data.
Hollywood Way at Victory Boulevard (Intersection #41)	• Restripe the northbound approach, including removal of the southbound through lane, to provide two right-turn lanes and two left-turn lanes • Increase signal cycle length	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Buena Vista Street at San Fernando Boulevard (Intersection #63)	• Increase signal cycle length • Optimize splits	1 month	No impacts
Buena Vista Street at Thornton Avenue (Intersection #64)	• Restripe the southbound approach	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby residential properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Buena Vista Street at Vanowen Street (Intersection #66)	• Change northbound left-turn signal phasing from protected to permissive	1 month	No impacts

Intersection	Improvements	Approximate Construction Duration	Impacts
Buena Vista Street at Victory Boulevard (Intersection #67)	• Restripe the eastbound and westbound approaches to provide a second left-turn lane • Add a right-turn overlap for the southbound right-turn movement	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Burbank Boulevard at San Fernando Boulevard (Intersection #79)	• Restripe and redesignate lanes to provide two left-turn lanes in the southbound (Burbank Boulevard) direction • Restripe and redesignate lanes to provide two dedicated right-turn lanes and two through lanes in the westbound (San Fernando Road) direction	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Burbank Boulevard at Victory Boulevard (Intersection #82)	• Restripe the eastbound (Victory Boulevard) approach to provide two through lanes and one right-turn lane • Restripe the westbound (Victory Boulevard) approach to provide three left-turn lanes and two through lanes • Restripe the northbound (Burbank Boulevard) approach to provide two left-turn lanes and two right-turn lanes • Increase signal cycle length	Restriping: 1 week Modification of existing signal: 1 month	All approach and receiving movements on the north leg (Burbank Boulevard) would be closed off during construction. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Magnolia Boulevard at 1st Street (Intersection #85)	• Restripe the westbound (1st Street) approach to provide two left-turn lanes, two through lanes, and one shared through-right lane. • Restripe the eastbound (1st street) approach by decreasing the width of the two receiving lanes to provide a second right-turn lane • Increase signal cycle length	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed. Construction-related air quality, noise, and traffic impacts could occur to substantial low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Magnolia Boulevard at Victory Boulevard (Intersection #86)	• Restripe the eastbound approach (by narrowing the receiving lane widths), changing the right-turn lane to a shared through-right lane, and removing an exclusive through lane and adding a second left-turn lane • Restripe the southbound approach (also through narrowing the receiving lanes) to provide a second right-turn lane • Restripe the northbound approach to provide a dual left-turn lane, one through lane, and a shared through-right lane • Increase signal cycle length	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Yellow striping containing lead could be removed.
Olive Avenue at 1st Street (Intersection #89)	• Restripe the westbound (1st Street) approach to convert the right-turn only lane to a shared through-right lane • Restripe the northbound (Olive Avenue) approach to convert the shared through-right lane to a right-turn lane • Add right-turn overlap phases on the eastbound (1st Street), southbound (Olive Avenue) • Reconfigured northbound approaches	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Olive Avenue at Victory Boulevard (Intersection #90)	• Restripe the eastbound (Victory Boulevard) approach to convert one of the through lanes to a left-turn lane and to convert the right-turn lane to a shared through-right lane • Restripe the westbound (Victory Boulevard) approach to convert the right-turn lane to a shared through-right lane • Implement right-turn overlap phase on the northbound and southbound (Olive Avenue) approaches • Increase signal cycle length	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise.
Hollywood Way at I-5 Southbound Ramps (Intersection #28)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority populations based on census block data.
City of Glendale			
San Fernando Road at Chevy Chase Drive (Intersection #134)	• Change the westbound through/right-turn lane to a right-only lane • Add one westbound right-turn only lane • Change the eastbound left-turn lane and the westbound left-turn lane to protected phasing • Add westbound right-turn overlap phase	Restriping: 1 week Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
City of Los Angeles			
Sotello Street at Main Street (Intersection #163)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

TRAN-MM#2: Intersection and Roadway Improvements for Operational Impacts

The following improvements are available for consideration to address operation-related traffic delay impacts under NEPA for the 2029 opening year. No mitigation is required under CEQA.

- Sunland Boulevard at San Fernando Road Minor—Widen westbound approach from westbound left-turn through lane and westbound right-turn pocket to westbound left-turn and westbound right through lanes. Optimize cycle length and splits.
- Sunland Boulevard at San Fernando Road—Provide exclusive southbound lane with protected-permitted phasing and westbound right-turn lane with overlap phasing. Provide protected-permitted phasing for northbound left-turn lane. Optimize cycle length and splits.
- Hollywood Way at I-5 Southbound Ramps—Signalize the intersection.
- SR 170 Southbound Ramp at Victory Boulevard—Signalize the intersection, provide northbound and southbound right-turn protected phasing.
- Hollywood Way at Cohasset Street E—Signalize the intersection.
- Broadway at Cesar E. Chavez Avenue—Add one southbound left-turn lane; no widening but some parking would be removed.
- Garey Street – US-101 Southbound On-/Off-Ramps at Commercial Street—Change westbound through/right-turn lane to a right-turn only lane; add one westbound right-turn only lane.
- US-101 Northbound Off-Ramp at 4th Street—Add one northbound left-turn lane.
- Sotello Street at Main Street—Signalize the intersection.
- Center Street at Commercial Street—Signalize the intersection.

The signalized intersections listed below would meet the impact thresholds by 2040, but the impact thresholds may or may not be met at earlier dates. The following improvements are available for consideration to address operation-related traffic delay impacts under NEPA that could occur when the delay and LOS reach a level where the impact thresholds are exceeded (between 2029 and 2040). No mitigation is required under CEQA.

- State Street at Marengo Street—Add one westbound turn lane and remove parking.
- Hollywood Way at Thornton Avenue—Optimize cycle length and splits.
- Grand Avenue at Cesar E. Chavez Avenue—Change the eastbound right-turn only lane to a through/right-turn lane, add one receiving lane on Cesar E. Chavez, remove parking, and restripe.

- Figueroa Street at Temple Street—Change the southbound right-turn only lane to a through/right-turn lane, and restripe the ramp south of the intersection to provide two receiving lanes.

The unsignalized intersections listed below would meet the traffic signal warrants by the year 2040, but the warrant criteria may or may not be met at earlier dates. The following improvements are available for consideration to address operation-related traffic delay impacts under NEPA that could occur when the warrant is met (between 2029 and 2040). No mitigation is required under CEQA.

- Main Street at College Street - Signalize the intersection.
- Elmyra Street at Main Street - Signalize the intersection.
- Alameda Street at Main Street-Ord Street - Signalize the intersection.
- Pleasant Avenue at I-10 eastbound on-/off-ramps/Kearny Street - Signalize the intersection.

Impacts from Implementing Mitigation Measure TRAN-MM#2

The impacts associated with implementation of TRAN-MM#2 are shown in Table 3.2-36. Table 3.2-36 includes the applicable intersection, the proposed improvement(s) and the impacts of those improvements. No impacts would occur from modifying signal phasing and timing, because these changes are done electronically to the existing signals. Adding signals would generally be done within the existing pavement or disturbed graded right-of-way. Temporary traffic, noise, and dust could impact nearby properties; however, the improvements at these locations would be limited in duration. Restriping would take place within existing pavement and could result in temporary traffic, noise, and air quality impacts. Impacts from these mitigation measures would be less than significant under CEQA.

Potential impacts at the six locations requiring intersection widening or parking removal were determined based on review of aerial images and compared to the existing inventory of known resources in the area to ensure that potential impacts have been adequately addressed. Appendix 3.2-B shows the locations of these six intersections. The following were considered in the analysis of potential impacts of the intersection widening improvements and parking removal:

- Temporary impacts related to roadway closures and traffic delays
- Surrounding land uses
- Construction-related noise impacts
- Construction-related air quality impacts
- Availability of right-of-way
- Utility relocations
- Property acquisitions and displacements
- Effects to substantial minority and low-income populations
- Physical impacts to existing structures, including historic properties
- Locations of known archaeological resources
- Locations of paleontologically sensitive deposits
- Effects on aquatic and biological resources
- Decrease in distance of travel lanes to sensitive receptors for noise and vibration

Table 3.2-36 Secondary Impacts of Mitigation Measure TRAN-MM#2

Intersection	Improvements	Approximate Construction Duration	Impacts
City of Burbank			
Sunland Boulevard at San Fernando Road Minor (Intersection #7) Refer to Figure 1 in Appendix 3.2-B.	• Widen westbound approach from westbound left-turn through lane and westbound right-turn pocket to westbound left-turn and westbound right through lanes • Optimize cycle length and splits	Widening: 3-4 months Modification of existing signal: 1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data. Roadway widening would require a partial acquisition from a commercial property and possible displacement of a vacant building (formerly a restaurant). Indirect and potentially direct impacts to a potentially historic building (built in 1963). Widening would require relocation of overhead utilities. The improvement would be outside the APE for cultural resources and outside the record search area; therefore, potential impacts could also occur to unknown archaeological resources. Low potential to encounter paleontological resources as improvements are unlikely to extend below a depth of 10 feet to high sensitivity deposits. No impacts to aquatic or biological resources.
Sunland Boulevard at San Fernando Road (Intersection #8)	• Provide exclusive southbound lane with protected-permitted phasing and westbound right-turn lane with overlap phasing • Provide protected-permitted phasing for northbound left-turn lane • Optimize cycle length and splits	1 month	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Hollywood Way at I-5 Southbound Ramps (Intersection #28)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority populations based on census block data.
SR 170 Southbound Ramp at Victory Boulevard (Intersection #1)	• Signalize the intersection • Provide northbound and southbound right-turn protected phasing	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby residential properties related to emissions, fugitive dust, and noise.
Hollywood Way at Cohasset Street E (Intersection #96)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial and residential properties related to emissions, fugitive dust, and noise.
Hollywood Way at Thornton Avenue (Intersection #36)	• Optimize cycle length and splits	1 month	No impacts
City of Los Angeles			
Broadway at Cesar E. Chavez Avenue (Intersection #176) Refer to Figure 2 in Appendix 3.2-B.	• Add one southbound left-turn lane • Remove parking	1 week	No widening would be required. However, approximately 5–6 on-street parking spots would be removed on North Broadway. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby residential and commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Garey Street – US-101 Southbound On-/ Off-Ramps at Commercial Street (Intersection #192) Refer to Figure 3 in Appendix 3.2-B.	• Change westbound through/right-turn lane to a right-turn only lane • Add one westbound right-turn only lane	3–4 months	Roadway widening would require a partial acquisition from a vacant industrial property. No potential impacts to buildings, including historic buildings. Traffic impacts could include construction-related lane closures or traffic delays. Limited potential for construction equipment and construction activities to impacts to nearby properties related to emissions, fugitive dust, and noise (nearest building is a parking structure). Construction-related traffic impacts could occur to substantial minority populations based on census block data. Potential impacts could also occur to known (a set of railroad tracks) and unknown archaeological resources. Low potential to encounter paleontological resources as improvements are unlikely to extend below a depth of 10 feet to high sensitivity deposits. No impacts to aquatic or biological resources or historic buildings.
US-101 Northbound Off-Ramp at 4th Street (Intersection #241) Refer to Figure 4 in Appendix 3.2-B.	• Add one northbound left-turn lane	3–4 months	Roadway widening would require a partial acquisition from a vacant parcel within Caltrans right-of-way. No potential impacts to buildings, including historic buildings. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby residential properties related to emissions, fugitive dust, and noise. The improvement would be outside the APE for cultural resources and outside the record search area; therefore, potential impacts could also occur to unknown archaeological resources. Low potential to encounter paleontological resources as improvements are unlikely to extend below a depth of 10 feet to high sensitivity deposits. Potential impacts to nesting birds from removal of ornamental landscaping.

Intersection	Improvements	Approximate Construction Duration	Impacts
Sotello Street at Main Street (Intersection #163)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Center Street at Commercial Street (Intersection #193)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial and residential properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial populations based on census block data.
State Street at Marengo Street (Intersection #231) Refer to Figure 5 in Appendix 3.2-B.	• Add one westbound turn lane • Remove parking	3–4 months	Roadway widening would require a partial acquisition from LAC+USC Medical Center. No potential impacts to buildings, including historic buildings. Removal or relocation of sidewalk and on-street parking along Marengo Street would be required. No potential impacts to buildings, including historic buildings. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby medical properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data. The improvement would be outside the APE for cultural resources and outside the record search area; therefore, potential impacts could also occur to unknown archaeological resources. Low potential to encounter paleontological resources as improvements are unlikely to extend below a depth of 10 feet to high sensitivity deposits. Potential impacts to nesting birds from removal of ornamental landscaping.

Intersection	Improvements	Approximate Construction Duration	Impacts
Grand Avenue at Cesar E. Chavez Avenue (Intersection #175) Refer to Figure 6 in Appendix 3.2-B.	• Change the eastbound right-turn only lane to a through/right-turn lane • Add one receiving lane on Cesar E. Chavez Avenue, remove parking, and restripe	1 week	No widening would be required. However, approximately 2-3 on-street parking spots would be removed on Cesar E. Chavez Avenue. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Figueroa Street at Temple Street (Intersection #181)	• Change the southbound right-turn only lane to a through/right-turn lane • Restripe the ramp south of the intersection to provide two receiving lanes	1 week	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Main Street at College Street (Intersection #161)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial and industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Elmyra Street at Main Street (Intersection #162)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial and residential properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

Intersection	Improvements	Approximate Construction Duration	Impacts
Alameda Street at Main Street-Ord Street (Intersection #173)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby commercial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.
Pleasant Avenue at I-10 eastbound on-/off-ramps/Kearny Street (Intersection #234)	• Signalize the intersection	2 months	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts to nearby residential properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur to substantial minority and low-income populations based on census block data.

APE = area of potential effect
Caltrans = California Department of Transportation
I = Interstate
SR = State Route

Impacts of the intersection improvements are detailed in Table 3.2-36. The IAMFs and mitigation measures in Section 3.2, Transportation; Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; Section 3.6, Public Utilities and Energy; Section 3.7, Biological and Aquatic Resources; Section 3.9 Geology, Soils, Seismicity, and Paleontological Resources; Section 3.12, Socioeconomics and Communities; and Section 3.17, Cultural Resources would be implemented for the intersection improvements and would address the impacts listed in Table 3.2-36. Additionally, implementation of TRAN-MM#2 would benefit local circulation in the area by improving traffic operations at these intersections. For these reasons, impacts from these mitigation measures would be less than significant under CEQA.

PR-MM#4: Replacement of Property Acquired from Existing or Planned Bicycle Routes

During the right-of-way acquisition process, the Authority will consult with the public agency with jurisdiction over any existing or planned bicycle routes regarding the specific conditions of acquisition and replacement of the land that will be acquired.

Where property that contains existing or planned bicycle paths required for HSR improvements involves the establishment of a permanent easement or permanent conversion to rail right-of-way from lands owned by Metro, the Authority will consult with the officials with jurisdiction to identify an alternative route for the continuation of the lost use and functionality of the resource, including maintaining connectivity. The identification of the alternative route must be determined to be feasible for the intended use by the respective Public Works Department, or Parks and Recreation Department or other equivalent authority within the affected City prior to the establishment of the permanent easement or permanent conversion of the Metro-owned lands.

Impacts from Implementing Mitigation Measure PR-MM#4

PR-MM#4 requires identification of alternative routes for permanent impacts on property containing existing or planned bicycle paths. The specific alternative routes identified would be

determined based on negotiations with the agency with jurisdiction over the affected bicycle route(s). Potential impacts of the provided land would depend on the affected land/uses and how/where the affected land/uses could be replaced. Future development of alternative bicycle routes could be subject to its own NEPA and/or CEQA analysis, as applicable, once the details of the project are known. As a result, it is not possible to determine whether land identified for alternative bicycle routes for the HSR Build Alternative would result in environmental impacts under CEQA beyond those already described in this section.

3.2.7.1 Early Action Projects

Construction

As described in Chapter 2, Section 2.5.2.9, early action projects would be completed in collaboration with local and regional agencies. They include grade separations and improvements at regional passenger rail stations. These early action projects are analyzed in further detail to allow the agencies to adopt the findings and mitigation measures as needed to construct the projects. The following transportation mitigation measures would be considered for the early action projects for impacts under NEPA.

Main Street Grade Separation

The Main Street Grade Separation would contribute to the construction impacts at San Fernando Road at Chevy Chase Drive, Sotello Street at Main Street, and Wilhardt Street at Main Street. Therefore, the following portion of mitigation measure TRAN-MM#1 would be applicable to this early action project.

TRAN-MM#1: Intersection Improvements for Construction Impacts

Intersections proposed for improvements must meet the NEPA LOS impact thresholds in order to be considered affected under NEPA. The following two intersections would meet the NEPA LOS impact thresholds during construction and the following improvements are available for consideration to address the construction-related traffic delay impacts under NEPA.

- San Fernando Road at Chevy Chase Drive—Change the westbound through/right-turn lane to a right-turn-only lane, add one westbound right-turn-only lane, change the eastbound left-turn lane and the westbound left-turn lane to protected phasing, and add a westbound right-turn overlap phase.
- Sotello Street at Main Street—Signalize the intersection.
- Wilhardt Street at Main Street is a proposed closure, and no mitigation is available at this location.

Operation

The early action projects would not result in operational traffic impacts. No transportation mitigation measures are applicable to the early action projects for operations impacts.

3.2.8 NEPA Impact Summary

This section summarizes the impacts of the HSR Build Alternative and compares them to the anticipated impacts of the No Project Alternative.

Under the No Project Alternative, recent development trends within the Burbank to Los Angeles Project Section are anticipated to continue, leading to increased congestion on regional roadways. In addition, there would be changes to transportation conditions because planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems would be built to accommodate planned growth in the Burbank to Los Angeles Project Section through the 2040 horizon year. Under the No Project Alternative, recent development trends within the Burbank to Los Angeles Project Section would continue, leading to increased congestion on regional roadways despite planned improvements, because anticipated growth would outpace roadway expansion. Intersection and roadway segment conditions would

deteriorate throughout the project section from the existing conditions with respect to LOS, V/C ratios, and delays, although improvements would be made to some transportation facilities.

The HSR Build Alternative would result in the following construction and operations impacts.

3.2.8.1 Construction Impacts

Access and circulation disruptions would occur throughout the construction period with various intensities depending on the type of construction activities that take place. These disruptions may affect emergency responders and other modes of transportation using the affected roadways and intersections. Even with implementation of TR-IAMF#2, TR-IAMF#3, TR-IAMF#6, TR-IAMF#7, and SS-IAMF#1, and mitigation measure TRAN-MM#1, construction impacts related to intersection delays would remain at the following locations.

- Strathern Street/Clybourn Avenue at San Fernando Road (LOS E in the a.m. peak hour)
- Hollywood Way at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Buena Vista Street at San Fernando Boulevard (LOS F in the a.m. and p.m. peak hours)
- Buena Vista Street at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Magnolia Boulevard at 1st Street (LOS E in the p.m. peak hours)
- Magnolia Boulevard at Victory Boulevard (LOS F in the a.m. and p.m. peak hours)
- Olive Avenue at 1st Street (LOS E in the a.m. peak hour and LOS F in the p.m. peak hours)
- San Fernando Road at Chevy Chase Drive (LOS E in the p.m. peak hours)
- Sunland Boulevard at I-5 Northbound Ramps (LOS E in the a.m. and p.m. peak hours)
- Buena Vista Street at Empire Avenue (LOS F in the a.m. peak hour)
- Empire Avenue at San Fernando Boulevard (LOS F in the p.m. peak hour)

In addition, construction impacts related to roadway capacities would remain at the following locations:

- Hollywood Way south of Thornton Avenue (LOS F in a.m. and p.m. peak hours)
- Hollywood Way north of Avon Street (LOS F in a.m. and p.m. peak hours)
- Hollywood Way north of Victory Boulevard (LOS F in a.m. and p.m. peak hours)
- Victory Place west of Empire Street (LOS E in a.m. peak hour; LOS F in p.m. peak hour)
- Victory Boulevard east of Hollywood Way (LOS E in a.m. peak hour; LOS F in p.m. peak hour)
- San Fernando Road West of Arvilla Avenue (LOS F in a.m. peak hour; LOS E in p.m. peak hour)

Law enforcement, fire, and emergency services would experience increased response times due to construction-related road closures, detours, and increased traffic congestion in some locations. However, emergency vehicle access for police and fire protection services would be maintained at all times and construction would be phased to prevent concurrent closures from limiting emergency access. TR-IAMF#1, TR-IAMF#2, TR-IAMF#3, TR-IAMF#6, TR-IAMF#7, and SS-IAMF#1 would minimize impacts related to emergency access.

Project-related construction would contribute to interference with pedestrians, bicyclists, and bus service where existing sidewalks, paths, and bus stops need to be temporarily closed or relocated to allow construction of new facilities. SS-IAMF#1, TR-IAMF#2, TR-IAMF#4, TR-IAMF#5, TR-IAMF#11, and TR-IAMF#12 would reduce impacts related to design feature hazards and pedestrian and bicycle risk through implementation of measures to reduce hazards and conflict during construction.

Construction of the HSR Build Alternative may result in the loss of a section of the planned San Fernando Railroad Bike Path in its current alignment if a feasible alternative route is not identified, which would result in a loss of connectivity of the planned bicycle network and would change the benefits of the adopted bicycle plans, resulting in an incompatible use. This would be considered an incompatible use.

3.2.8.2 Operations Impacts

The HSR Build Alternative would provide a beneficial effect to the regional transportation system by reducing vehicle trips (VMT) on the freeways through the diversion of intercity trips from road

trips to HSR. This reduction in future vehicle trips would improve the future LOS of the regional roadway system compared with the No Project Alternative. However, the HSR Build Alternative would result in impacts on 24 intersections and 7 roadway segments along the alignment. TRAN-MM#2 would implement improvements to intersections and roadways along the alignment by providing additional lanes or traffic signalization to reduce the delay and improve LOS for affected intersections. However, no improvements are considered feasible to reduce the impacts at the following seven intersections:

- San Fernando Road at Chevy Chase Drive (2040 a.m. and p.m. peak hours)
- Pasadena Avenue at Broadway (2040 a.m. peak hour)
- Mission Road at Cesar E. Chavez Avenue (2040 a.m. and p.m. peak hours)
- Alameda Street at Aliso Street – Commercial Street (2040 p.m. peak hour)
- Vignes Street at Gateway Plaza-Ramirez Street (2040 p.m. peak hour)
- US-101 southbound on-ramp – Pecan Street at 4th Street (2040 a.m. and p.m. peak hours)
- US-101 southbound off-ramps at Fourth Street (2040 a.m. peak hours)

In addition, no improvements are considered feasible to reduce the impacts on the following roadway segments:

- Victory Boulevard west of Hollywood Way (2040 p.m. peak hour)

The HSR Build Alternative was designed to provide adequate emergency access and would therefore not result in operational impacts on emergency access. In addition, the grade separations would provide a benefit to emergency access because passing trains and active grade-crossing safety equipment would no longer cause travel delays to emergency vehicles.

There would be no impacts related to design feature hazards or incompatible uses during operation. As a rail facility, the HSR project is subject to specific design and safety requirements to prevent conflicts with other modes of transportation. In addition, most of the HSR project would be built in an existing rail corridor and would not conflict with the existing rail uses.

The PTC and grade separations included as part of the HSR Build Alternative would be beneficial to rail safety. PTC infrastructure to control train movements would improve railroad safety by reducing the probability of collisions between trains, casualties to roadway workers and damage to equipment, and over-speed accidents. Grade separations would make travel safer where roadways currently cross the railroad corridor at grade by eliminating the potential for train and automobile/bicycle/pedestrian conflicts that currently exists. In addition, travel delays would no longer be caused by passing trains and active grade-crossing safety equipment.

3.2.9 CEQA Significance Conclusions

Table 3.2-37 summarizes the CEQA determination of significance for all construction and operations impacts discussed in Section 3.2.6.3, High-Speed Rail Build Alternative.

Table 3.2-37 Summary of CEQA Significance Conclusions and Mitigation Measures for Transportation

Impact	Level of Significance before Mitigation	Mitigation Measure	Level of Significance after Mitigation
Construction			
Impact TR #1: Signalized Intersection Delay Increases during Construction	Not Applicable	Not Applicable	Not Applicable
Impact TR #2: Unsignalized Intersection Delay Increases during Construction	Not Applicable	Not Applicable	Not Applicable
Impact TR #3: Roadway Segment Volume-to-Capacity Ratio Changes during Construction	Not Applicable	Not Applicable	Not Applicable
Impact TR #4: Circulation and Emergency Access Inadequacies during Construction	Less than Significant	No mitigation measures are required	Not Applicable
Impact TR #5: Design Feature Hazards, Incompatible Uses, or Conflict with Transit, Airport, Pedestrian, and Bicycle Plans during Construction	Significant	PR-MM#4	Significant and Unavoidable Impacts to San Fernando Railroad Bike Path
Operations			
Impact TR #6: Vehicle Miles Traveled during Operation	Beneficial Impact	No mitigation measures are required	Not Applicable
Impact TR #7: Signalized Intersection Delay Increases during Operation	Not Applicable	Not Applicable	Not Applicable
Impact TR #8: Unsignalized Intersection Delay Increases during Operation	Not Applicable	Not Applicable	Not Applicable
Impact TR #9: Roadway Segment Volume-to-Capacity Ratio Changes during Operation	Not Applicable	Not Applicable	Not Applicable
Impact TR #10: Circulation and Emergency Access Inadequacies during Operation	Less than Significant	No mitigation measures are required	Not Applicable
Impact TR #11: Design Feature Hazards or Incompatible Uses during Operation	Less than Significant	No mitigation measures are required	Not Applicable
Impact TR #12: Conflicts with Transit, Bicycle, Pedestrian, or Aviation Facility Plans during Operation	Less than Significant	No mitigation measures are required	Not Applicable

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