3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

3.2 Transportation

3.2.1 Introduction

PURPOSE

Transportation

Because the implementation of a high-speed rail project is a major capital investment, it is important to identify how the Shared Passenger Track Alternatives would improve mobility in the resource study area compared to the No Project Alternative. An impacts analysis of the traffic conditions is presented in this section.

Section 3.2, Transportation, of the Los Angeles to Anaheim Project Section (project section) Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) defines the transportation resources within the region and discusses the affected environment in the resource study areas (RSA). Section 3.2 also analyzes the potential impacts of the No Project Alternative and the High-Speed Rail (HSR) Project Alternative, otherwise called Shared Passenger Track Alternative A and Shared Passenger Track Alternative B, and describes impact avoidance and minimization features (IAMF) that will avoid, minimize, or reduce these impacts. Mitigation measures are proposed to further reduce, compensate for, or offset impacts of the Shared Passenger Track Alternatives. Section 3.2 also defines the transportation system and describes the affected environment in the RSA.

The following technical report serves as the basis for the information in this section and is available on request:

- *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025)

Additional details on transportation are provided in the following appendices in Volume 2 of this Draft EIR/EIS.

- Appendix 2-A, Impact Avoidance and Minimization Features
- Appendix 2-B, Applicable Design Standards
- Appendix 3.1-A, Regional and Local Policy Inventory and Consistency Analysis
- Appendix 3.2-A, Vehicle Miles Traveled Memorandum
- Appendix 3.2-B, Traffic Mitigation Locations
- Appendix 3.2-C, 2015 Baseline Conditions Traffic Counts Validation
- Appendix 3.2-D, Horizon Year 2040 Post-Mitigation Level of Service

This section includes detailed analysis of environmental resources, affected environment, environmental consequences, and mitigation measures based on the guidance provided in *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Versions 5.9 and 5.11 (Authority 2017, 2022) as amended. Seven other resource sections in this Draft EIR/EIS (including Section 3.19, Cumulative Impacts) provide additional information related to transportation:

- **Section 3.3, Air Quality:** Construction impacts from the Shared Passenger Track Alternatives on air quality as well as long-term regional benefits from operations of the Shared Passenger Track Alternatives.
- **Section 3.4, Noise and Vibration:** Construction and operational impacts from the Shared Passenger Track Alternatives on community facilities related to noise and vibration.
- **Section 3.6, Public Utilities and Energy:** Construction and operational impacts related to energy consumption as a result of vehicle miles traveled (VMT) during operation of the Shared Passenger Track Alternatives.
- **Section 3.11, Safety and Security:** Construction and operational impacts from the Shared Passenger Track Alternatives related to safety and security potentially associated with traffic and circulation, including impacts on emergency vehicle response times.

- **Section 3.13, Station Planning, Land Use, and Development:** Construction and operational impacts from the Shared Passenger Track Alternatives on local growth, station planning, and land use.
- **Section 3.15, Parks, Recreation, and Open Space:** Construction and operational impacts from the Shared Passenger Track Alternatives related to parks, recreation, and open space.
- **Section 3.19, Cumulative Impacts:** Construction and operational impacts from the Shared Passenger Track Alternatives in combination with other past, present, and reasonably foreseeable future projects.

Section 3.2.5, Affected Environment, describes the affected environment, including freeway conditions, transit conditions, aviation, rail service, bicycle and pedestrian, and automobile delay/congestion based on level of service (LOS) and its related volume-to-capacity (V/C) ratio metric.

California has adopted a policy through Senate Bill 743 and associated regulations (California Environmental Quality Act [CEQA] Guidelines Section 15064.3) that automobile 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 ratio 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 the National Environmental Policy Act (NEPA) as described in Section 3.2.4.3, Methods for Impact Analysis.

Impact summaries and conclusions for the Shared Passenger Track Alternatives are presented in Section 3.2.6, Environmental Consequences. The NEPA Impacts Summary (Section 3.2.8) summarizes the impacts of the Shared Passenger Track Alternatives and compares them to the anticipated impacts of the No Project Alternative. The CEQA Significance Conclusions (Section 3.2.9) provides a summary of CEQA determinations of significance for construction and operational impacts.

3.2.1.1 Definition of Resources

The following are definitions for the transportation resources analyzed in this Draft EIR/EIS.

- **Major Roadways:** *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:** *Pedestrian and bicycle access* refers to pedestrian access routes and bicycle access routes within the transportation RSA.
- **Aviation:** *Aviation* refers to the air transportation network including both airside and landside resources in California.

- **Emergency Access and Property Access:** *Emergency access and property access* refers to emergency facilities and properties and their associated road networks in the transportation RSA.
- **Transit Conditions:** *Transit conditions* refer to the regional network of passenger rail and bus transportation.
- **Freight Rail Conditions:** *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. General NEPA and CEQA requirements for assessment and disclosure of environmental impacts are described in Section 3.1, Introduction, and are therefore not restated in this resource section. NEPA and CEQA requirements specific to the evaluation of transportation are, however, described in this section.

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 throughout the state using federal funds.

In accordance with the Federal Passenger Rail Investment and Improvement Act of 2008, the State of California adopted the *2023 California State Rail Plan* (Caltrans 2023) in March 2023. 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 to maintain the funding eligibility of facilities. Federal agencies such as the Federal Highway Administration, Federal Transit Administration, and Federal Railroad Administration (FRA) are also responsible for implementing and enforcing certain federal environmental protection laws.

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 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 [U.S.C.] 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.[1]

[1] While this EIR/EIS was being prepared, the FRA adopted new NEPA compliance regulations (23 Code of Federal Regulations Part 771). Those regulations only apply to actions initiated after November 28, 2018. Refer to 23 Code of Federal Regulations Part 771.109(a)(4). Because this EIR/EIS was initiated prior to that date, it remains subject to the FRA's Environmental Procedures rather than the Part 771 regulations.

Railroad Revitalization and Regulatory Reform Act of 1976 (45 U.S.C. 801)

The Railroad Revitalization and Regulatory Reform Act provides the means to rehabilitate and maintain the physical facilities, improve the operations and structure, and restore the financial stability of the nation's railway system and to promote its revitalization.

Public Transportation Act (49 U.S.C. 53)

The purposes of Chapter 53 of Title 49 of the U.S.C. are to (1) provide funding to support public transportation; (2) improve the development and delivery of capital projects; (3) establish standards for the state of good repair of public transportation infrastructure and vehicles; (4) promote continuing, cooperative, and comprehensive planning that improves the performance of the transportation network; (5) establish a technical assistance program to assist recipients under this chapter to more effectively and efficiently provide public transportation service; (6) continue federal support for public transportation providers to deliver high-quality service to all users, including individuals with disabilities, seniors, and individuals who depend on public transportation; (7) support research, development, demonstration, and deployment projects dedicated to assisting in the delivery of efficient and effective public transportation service; and (8) promote the development of the public transportation workforce.

Infrastructure Investment and Jobs Act

On November 15, 2021, President Joseph R. Biden signed into law the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law. This new law is intended to rebuild and improve roads, bridges, rails, ports, airports, and more. This 5-year bill replaced the Fixing America's Surface Transportation Act, which expired in 2020 and was extended through Fiscal Year 2021. The Infrastructure Investment and Jobs Act authorizes more than a 40 percent increase over the Fixing America's Surface Transportation Act in guaranteed funding for public transportation. These funds are for local buses, subways, commuter rail, light rail, paratransit, ferries, and HSR.

The U.S. Department of Transportation obligated nearly $4 billion to the California High-Speed Rail Authority (Authority) through the Infrastructure Investment and Jobs Act (Authority 2023a, 2023b). On June 4, 2025, the FRA published a letter along with its compliance review report notifying the Authority of its proposed determination to terminate two cooperative agreements totaling roughly $4 billion in federal funding. On July 17, 2025, California sued the federal government over the termination of these federal grant funds for the project.

The funding would ensure the advancement of construction in California's Central Valley, which is critical for the HSR system. The grant works to advance work in California's Central Valley, including by:

- Funding design, right-of-way purchases, and construction of six grade separations in the city of Shafter (Kern County)
- Funding six electric trains for testing and use
- Funding design of train facilities
- Funding design and construction of the Fresno station
- Funding final design and early works, including right-of-way acquisition and utility relocation, on the extensions to Merced to Bakersfield
- Funding construction in the Central Valley

Federal Transit Act (49 U.S.C.)

The Federal Transit Act fosters the development and revitalization of public transportation systems that maximize safe, secure, and efficient personal mobility; minimize environmental impacts; and minimize transportation-related fuel consumption and reliance on foreign oil.

Highways, Statewide Planning (23 U.S.C. 135)

Title 23 of the U.S.C. for Highways and Statewide Planning provides the general requirements for statewide planning to encourage and promote the safe and efficient management, operation, and development of surface transportation systems.

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 (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.

Operations analysis of proposed improvements to Caltrans on-ramps and off-ramps is conducted according to the methodology set forth in the Caltrans *Highway Design Manual* (December 2015).

State Greenhouse Gas Reduction Goals

The following policy recommendations were developed by the State Operations Group of the Climate Action Team and adopted by the Climate Action Team at its June 23, 2010, public meeting (California Environmental Protection Agency 2010).

- Include both direct and indirect emissions from Executive Branch agencies in the scope of emissions considered for reduction activities.
- Require each state agency to develop and implement a greenhouse gas (GHG) reduction policy that reduces its GHG emissions by 30 percent by 2020, while allowing some flexibility for the agencies based on their individual characteristics, operations, and resources.
- Create a uniform GHG reporting protocol appropriate to state government operations, and establish and maintain a statewide inventory of GHG emissions from state government projects and operations based on this protocol.
- Establish a GHG emission goal (in tons of carbon dioxide equivalent) for state government projects and operations, based on the findings of the inventory (i.e., a state operations “cap”).
- Conduct a review of laws, regulations, policies, and procedures to evaluate their impact on state agencies’ ability to manage GHG emissions.
- Implement existing Green Building Executive orders and reduce electricity purchased for buildings by 20 percent by 2015.
- Support implementation of the Governor’s Information Technology Executive Order (S-3-10), which seeks a 30 percent reduction in energy consumption by information technology and telecommunications equipment by 2012.
- Support ongoing efforts by the California Department of Water Resources to reduce the carbon intensity of the electricity purchased for the operation of the California Water Project, and to increase the efficiency of pumps and motors used in its operation.
- Improve the efficiency and efficient use of vehicles in the state fleet.
- Reduce business-related employee travel and explore additional resources and infrastructure needed to facilitate this reduction in travel.
- Reduce emissions associated with employee commuting.

- Adopt Employee Best Practices throughout state government, aimed at reducing GHG emissions up the supply chain and improving overall sustainability of state government operations.
- Pursue greener lease terms and specify additional green requirements in new and renewed building leases.
- Require participation in the California Energy Commission's Energy Performance Rating by California state-owned buildings.

The preceding list of these policies commits the state to reduce the GHG intensity of its operations through gains in efficiency and adoption of sustainable business practices. These policies commit all Executive Branch agencies to actions leading to reductions in GHG emissions.

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.

Relevant objectives, policies, and goals from the Southern California Association of Governments (SCAG) 2020 RTP/Sustainable Communities Strategy (SCS) and the Caltrain Strategic Plan applicable to the project are provided in Volume 2, Appendix 3.1-A.

California Streets and Highways Code Section 1 et seq.

California Streets and Highways Code Section 1 et seq. includes the provisions and 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 to local jurisdictions. Operations analysis of Caltrans facilities is conducted according to the methodology set forth in the *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002).

Caltrans uses the methods outlined in the Highway Capacity Manual (HCM) (TRB 2010) and has a target threshold of LOS C for intersections and highway facilities. The Caltrans guide provides guidelines for determining project fair-share contributions (Caltrans 2002).

Senate Bill 743 and State CEQA Guidelines Section 15064.3

Senate Bill 743, codified in California 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 GHG emissions. The California Legislature required the Governor's Office of Planning and Research to propose new criteria for determining the significance of transportation impacts. The statute states that on 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 locations specifically identified in the new criteria.

The new criteria, contained in State 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. This section became effective statewide on July 1, 2020.

The Governor's Office of Planning and Research has provided a technical advisory on evaluating transportation impacts in CEQA (OPR 2018) and further information related to the change in the State CEQA Guidelines in its 2018 Statement of Reasons supporting the guideline change (California Natural Resources Agency 2018) and related to LOS and VMT on its CEQA Update website (OPR 2018).

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 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 separated from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

Source: California Streets and Highways Code, Section 890

California Transportation Plan 2050

This plan is a core document that ties 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 also identifies a sustainable transportation system by pulling together these 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

State Rail Plan (Government Code, Section 14036)

This law requires Caltrans to produce a State Rail Plan that includes a passenger and freight rail component. The California State Rail Plan (Caltrans 2023) was developed and updated to meet this requirement. It establishes a statewide vision and objectives, sets priorities, and develops policies and implementation strategies to enhance passenger and freight rail service in the public interest. It also details a long-range investment program for California's passenger and freight infrastructure. The Final State Rail Plan was adopted in March 2023 (Caltrans 2023).

Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375, Chapter 728, Statutes of 2008) and Global Warming Solutions Act (Assembly Bill 32)

Adopted in September 2008, Senate Bill 375 provides a new planning process to coordinate community development and land use planning with RTPs to reduce sprawling land use patterns and dependence on private vehicles, and thereby reduce VMT and GHG emissions associated with VMT. Senate Bill 375 is one major tool being used to meet the goals in Assembly Bill 32, the Global Warming Solutions Act. Under Senate Bill 375, the California Air Resources Board sets GHG emissions reductions targets for 2020 and 2035 for metropolitan planning organizations in

the state. Each metropolitan planning organization must then prepare an SCS that meets the GHG emissions reduction targets set by the board. Once adopted, the SCS is incorporated into the region's RTP.

3.2.2.3 Regional and Local

This section discusses relevant regional and local programs, policies, regulations, and permitting requirements.

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 responsible for congestion management agency actions may be a council of governments, county association of governments, county or local transportation commission, transportation or transit authority or agency or district, or joint powers agency, depending on local agency preferences, population density (e.g., urban or rural counties or municipalities), or transportation purpose. Congestion management agencies are responsible for preparing metropolitan transportation plans, RTPs, and local transportation plans.

County or Municipal General Plans or Community Plans

Counties and cities must prepare general plans with transportation policies and ordinances. General plans provide important contextual information for effective assessment and 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, as well as a circulation diagram.

The project section would primarily be within Los Angeles and Orange Counties and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. The city of Orange is also within the RSA. Table 3.2-2 lists local plans and policies that were identified and considered for analysis.

Table 3.2-2 Regional and Local Plans and Policies

Policy Title	Summary
Southern California	
SCAG 2024–2050 Connect SoCal RTP/SCS (2024)	The SCAG RTP/SCS is a long-range metropolitan transportation plan that is developed and updated by SCAG every 4 years. The SCAG 2024 RTP/SCS, also known as Connect SoCal, outlines a comprehensive vision for transportation and land use planning in Southern California. Its primary goals are to: ▪ (Policy #7) Encourage and support the implementation of projects, both physical and digital, that facilitate multimodal connectivity, prioritize transit and shared mobility, and result in improved mobility, accessibility and safety ▪ (Policy #14) Encourage the development of transportation projects that provide convenient, cost-effective and safe alternatives to single-occupancy vehicle travel (e.g., trips made by foot, on bikes, via transit, etc.) ▪ (Policy #54) Accelerate the deployment of a zero-emission transportation system and use near-zero-emission technology to offer short-term benefits where zero-emissions solutions are not yet feasible or commercially viable ▪ (Policy #70) Prioritize community and environmental justice concerns, together with economic needs, and support workforce development opportunities, particularly around deployment of zero-emission and clean technologies and their supporting infrastructure

Policy Title	Summary
SCAG 2020–2045 Connect SoCal RTP/SCS (2020)	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 mobility needs. Goals include: ▪ Build and maintain a robust transportation network. ▪ Develop, connect and sustain communities that are livable and thriving. ▪ Create a healthy region for the people of today and tomorrow. ▪ Support a sustainable, efficient and productive regional economic environment that provides opportunities for all residents. Strategies include: ▪ Increase multimodal connectivity (e.g., first/last mile transit and airport connections), which includes planning for and developing mobility hubs throughout the SCAG region. ▪ Expand the region's dedicated lanes network—including new bus rapid transit, dedicated bus lanes, express bus service on managed and express lanes—as well as the region's urban and passenger rail network and transit/rail signal priority treatments. Improve transit/rail frequency, reliability, and fare and scheduling integration across operators. ▪ Through land use planning, build residential development along high-frequency transit corridors and around transit/rail facilities and centers.
SCAG FTIP (2023)	The SCAG FTIP is a listing of multimodal transportation projects proposed over a 6-year period for the SCAG region. The projects include, for example, highway improvements, transit, rail and bus facilities, high-occupancy vehicle lanes, active transportation, signal synchronization, intersection improvements, and freeway ramps. SCAG produces a biennial FTIP update for the region on an even-year cycle. The FTIP is prepared to implement projects and programs listed in the RTP/SCS and is developed in compliance with state and federal requirements. The six County Transportation Commissions (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) in the SCAG region have the responsibility under state law of proposing their county program, using current RTP/SCS 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 its lists, SCAG develops the FTIP based on consistency with the current RTP/SCS, inter-county connectivity, financial constraint, and conformity determination. 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

Policy Title	Summary
SCAG Sustainable Communities Program (2020)	SCAG's SCP is a technical assistance program that strengthens partnerships with local agencies and strategic partners who are responsible for land use and transportation decisions to help the region achieve its unified goals. The SCP provides opportunities to secure resources to meet the diverse planning needs of local communities and support implementation of regional planning policies and strategies. Specific funding categories are developed every 4 years alongside the adoption of the RTP/SCS, with Calls for Applications released on a rolling basis thereafter. SCAG is currently providing technical assistance to 57 local agencies and has funded 110 projects totaling over $21.6 million since 2016. Goals include: ▪ Provide needed planning resources to local jurisdictions for active and multimodal transportation, sustainability, land use, and affordable housing; ▪ Promote, address and ensure health and equity in regional land use and transportation planning and close the gap of racial injustice and better serve communities of color; ▪ Encourage regional planning strategies to reduce motorized vehicle miles traveled and greenhouse gas emissions, particularly in environmental justice communities where there is the highest need for air quality improvements; ▪ Develop local plans that support the implementation of key strategies and goals outlined in Connect SoCal's Sustainable Communities Strategy; ▪ Develop resources that support the key strategies and policy direction of the adopted Connect SoCal; ▪ Support a resilient region that looks at climate adaptation and public health preparedness as key strategies to address community prosperity, transportation safety, economic recovery and sustainability; and ▪ Increase the region's competitiveness for federal and state funds, including, but not limited to, the California Active Transportation Program and Greenhouse Gas Reduction Funds.
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

Policy Title	Summary
SCAG Regional Comprehensive Plan (2008)	The RCP 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 RCP 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 us 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
Los Angeles – San Diego – San Luis Obispo Rail Corridor Agency Business Plan FY 2024–2025 to FY 2025–2026 (2024)	In Chapter 7: Network Integration, Coordination, and High-Speed Rail, the Business Plan states the following: ▪ High-Speed Rail Connection: The HSR system is planned to be an integral component of the statewide passenger rail system, and key to the statewide network integration effort. The passenger rail services along the LOSSAN rail corridor serve as a backbone for transportation throughout the central and southern California coastal regions. As such, the LOSSAN rail corridor will provide critical connections to support and compliment the HSR system in whatever form it eventually takes. Integration between the LOSSAN rail corridor and HSR system will provide mutual benefits to each service.
Los Angeles County	
Metro RTIP (2023)	The RTIP is a federal- 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 a 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. In order for federal funds to be released to the 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 TIP by SCAG, the FSTIP prepared by Caltrans, and the FTIP approved by 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

Policy Title	Summary
Metro 2020 LRTP (2020)	The LRTP provides the funding plan and policies needed to move toward a future Los Angeles County that is environmentally and economically sustainable, while continuing to reduce congestion. General goals of the LRTP are: ▪ Providing more transit options with improved quality and service ▪ Managing the transportation system to reduce the amount of time people spend in traffic ▪ Making streets and sidewalks safe and convenient for everyone, to support healthy neighborhoods ▪ Investing in communities to expand access to jobs, housing, and mobility options
Metro SRTP (2014)	The SRTP is a focused 10-year plan that guides actions through 2024. The plan will advance 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 in moving projects and programs forward 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 statutory requirements of the CMP, including monitoring LOS on the CMP Highway and Roadway network, measuring frequency and routing 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 AM or PM weekday peak hours of adjacent street traffic) ▪ Establishing conditions for significant impact analysis of CMP monitoring for mainline freeway (where projects add 150 or more trips during either the AM or PM weekday peak hours)
Metro Vision 2028 Strategic Plan (2018)	The Vision 2028 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: ▪ Providing high-quality mobility options that enable people to spend less time traveling ▪ Delivering outstanding trip experiences for all users of the transportation system ▪ Enhancing communities and lives through mobility and access to opportunity ▪ Transforming LA County through regional collaboration and national leadership ▪ Providing responsive, accountable, and trustworthy governance within the Metro organization

Policy Title	Summary
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 Active Transportation Strategic Plan (2023)	The Active Transportation Strategic Plan was prepared to improve mobility in the region for walking, biking, and other active transportation methods. The plan is designed for the use of cities, the County of Los Angeles, and transit agencies in planning facilities around active transit and setting priorities that contribute to regional improvements. The plan includes the following objectives: ▪ Expanded and enhanced active transportation access to transit with a focus on those that rely on non-vehicular travel for household cost savings ▪ Expanded and enhanced active transportation access to socioeconomic opportunities ▪ Enhanced viability and competitiveness of multimodal transportation options ▪ Expanded active transportation facilities in communities with the highest rates of pollution
Los Angeles County 2035 General Plan (2025)	Los Angeles County's jurisdiction for planning purposes is generally the unincorporated areas of the county, including the communities of South Whittier, West Whittier, Whittier Narrows, South San Gabriel, and East Los Angeles. The 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
Los Angeles County Transportation Impact Analysis Guidelines (2020)	The guidelines provide detailed guidance on acceptable traffic- and transportation-related operations. Public Works generally will require the preparation and submission of a Transportation Impact Analysis for projects that meet the following criteria: ▪ Development Projects: Estimated to generate a net increase of 110 or more daily vehicle trips. ▪ Transportation Projects: Likely to induce additional vehicle miles traveled (VMT) by increasing vehicle capacity. ▪ Projects for which a Transportation Impact Analysis is required by County ordinance; regulation; resolution; court order; or directive from the Board of Supervisors, Regional Planning Commission.

Policy Title	Summary
Los Angeles County Bicycle Master Plan (2012)	The County of Los Angeles adopted the *County of Los Angeles Bicycle Master Plan* in March of 2012. The plan includes the following goals and policies: ▪ Goal 1 – Bikeway System: Expanded, improved, and interconnected system of County bikeways and bikeway support facilities to provide a viable transportation alternative for all levels of bicycling abilities, particularly for trips of less than five miles. – Policy 2.4 – Evaluate impacts on bicyclists when designing new or reconfiguring streets.
City of Los Angeles	
City of Los Angeles General Plan, Mobility Plan 2035 (2024)	The City of Los Angeles General Plan, last updated in 2024, is a dynamic document consisting of several elements, including the Land Use Element, which consists of the plans for each of the city's 35 community plan areas. Recently adopted elements are 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. Although an LOS of 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 Angelinos ▪ World class infrastructure ▪ Collaboration, communication, and informed choices ▪ Clean environments and healthy communities
Los Angeles River Revitalization Master Plan (2007)	The goals of the master plan include revitalization of the river, greening area neighborhoods, capturing community opportunities, and creating value. In 2009, the Los Angeles River Improvement Overlay was established to implement the urban design goals and principles within the master plan. The master plan requires special permit clearance for certain properties within 300 feet of the river.
City of Los Angeles 2010 Bicycle Plan (2011)	The City of Los Angeles adopted the *2010 Bicycle Plan* in March of 2011. The plan contains the following policies: ▪ Policy 2.2.2: Reduce impediments to bicycle lane mobility and safety. ▪ Policy 2.3.1: Upgrade bridges, intersections, freeway ramps, tunnels, and grade separations that impede safe and convenient bicycle passage. ▪ Policy 2.3.2: Mitigate obstacles or obstructions that impede safe and convenient bicycle passage. ▪ Policy 2.3.4: Maintain and facilitate best bikeway design practices.

Policy Title	Summary
Downtown Community Plan (2024)	The City of Los Angeles adopted the *Downtown Community Plan* on May 3, 2023, and amended it in 2024. The plan contains the following goals and policies: ▪ MC Goal 2: An integrated and sustainable Downtown circulation system that provides access between districts through physical connections and information. – Policy MC 2.1: Establish a mode share goal of 75% for transit, walking, and biking for the year 2040 to improve the sustainability of Downtown's mobility network and increase access for residents, workers, and visitors. – Policy MC 2.2: Implement strategies to reduce vehicle miles travelled per capita. – Policy MC 2.5: Facilitate integration between different modes of travel to create a seamless experience as users switch between modes and to promote transit use and active transportation. ▪ MC Goal 3: A safe and inviting pedestrian environment. – Policy MC 3.3: Prioritize pedestrian safety for construction detours. First contain construction staging onsite, then consider using parking and travel lanes before significantly disrupting pedestrian routes. ▪ MC Goal 5: A comprehensive transit system that connects Downtown's districts and Downtown to communities throughout the region. – Policy MC 5.1: Support major regional rail infrastructure projects, such as Link US and California High Speed Rail that will improve connectivity between Downtown and the surrounding region and reduce travel times. ▪ MC Goal 7: A vehicular transportation network that encourages sharing, greater efficiencies, and is balanced with other modes. – Policy MC 7.1: Balance vehicular circulation with other modes of transportation to improve safety and sustainability for all Downtown stakeholders.
Boyle Heights Community Plan: Circulation Element (2024)	Boyle Heights has high levels of transit ridership, making transit options a high priority to create better connectivity throughout the community, as well as to neighboring communities. The plan supports transportation improvements identified through Mobility Plan 2035.
City of Vernon	
City of Vernon General Plan (2023)	The City of Vernon 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 impacts of transportation. Vernon, being a primarily industrial city, concentrates its efforts on: ▪ Mobility for commercial traffic, as well as providing services for industrial and commercial clients ▪ Maintaining an established ICU LOS standard of D as an acceptable operating LOS
City of Vernon Bicycle Master Plan (2017)	The City of Vernon adopted the *City of Vernon Bicycle Master Plan* in 2017. The plan contains the following strategy: ▪ Strategy 1.A.2: Coordinate with Metro and other regional rail providers to establish appropriate designs for existing and future transit stops and station accessways.
City of Bell	
City of Bell Bicycle Master Plan (2016)	The City of Bell adopted the City of Bell Bicycle Master Plan in June of 2016. The plan contains the following goals: ▪ Goal 1: Improve bicycle safety ▪ Goal 2: Increase bicycling – Create a safe and connected bikeway network

Policy Title	Summary
City of Commerce	
City of Commerce 2020 General Plan (2008)	The City of Commerce 2020 General Plan serves as a blueprint for future planning and development in the city. The general plan indicates the city's vision of the future through the policies and plans that are designed to shape the physical development of the community. The general plan: ▪ Acknowledges the City's previous planning efforts, the established land use patterns in the community, and adopted development policy ▪ Establishes an ICU LOS D as a target LOS standard, and ICU LOS E as a threshold standard
City of Commerce Bicycle & Pedestrian Plan (2020)	The City of Commerce adopted the *Bicycle & Pedestrian Plan* in 2020. The plan contains the following strategy: ▪ Goal 1: Increase Rates of Walking And Bicycling – Objective: Ensure all bikeways and pedestrian right-of-way is comfortable to use and maintained – Objective: Increasing bike and pedestrian facility options
City of Montebello	
City of Montebello General Plan (2024)	The general plan is Montebello's blueprint for meeting the community's long-term vision for the future. The general plan establishes policies and goals to: ▪ Promote the use of public transit through high-quality local and regional transit service and facilities ▪ Foster multimodal accessibility between transit services and destinations within the city
Montebello Bicycle Master Plan (2024)	The City of Montebello adopted the *Montebello Bicycle Master Plan* in April of 2024. The plan contains the following goals: ▪ Goal 1: Accessibility – Provide bicycle facilities to and from important local and regional and destinations, and coordinate with adjacent jurisdictions and other agencies to ensure bikeway connectivity and consistency. – Improve bicycling connectivity to existing and planned transit stations. ▪ Goal 2: Safety – Implement designs that reduce conflicts between bicycles and other modes such as automobiles, pedestrians, and transit vehicles along roads, at intersections, and at local destinations.

Policy Title	Summary
City of Pico Rivera	
City of Pico Rivera General Plan (2014)	The City of Pico Rivera 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 impacts of transportation. The plan's Circulation Element seeks to: ▪ Establish and maintain a safe and efficient roadway and highway network with adequate carrying capacity during peak travel hours; ▪ Make provisions for local and regional transit services that represent viable alternatives to automobile travel during peak commuting hours as well as adequately accommodating the needs of transit-dependent residents throughout the day; ▪ Support the community's local economy by providing for the movement of needed goods by truck and rail without impacting the community's residential neighborhoods; ▪ Enhance the ability of children to safely access schools, parks, and library facilities by walking or riding bicycles; ▪ Provide adequate and accessible parking facilities; and ▪ Build a walkable city, reduce traffic congestion, improve transit, and expand the bicycle network.
City of Santa Fe Springs	
Re-Imagine Santa Fe Springs 2040 General Plan (2022)	The Re-Imagine Santa Fe Springs 2040 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 impacts of transportation. The plan also seeks to provide: ▪ A comprehensive transit system that provides convenient and reliable transit access to residential neighborhoods and activity destinations ▪ A multimodal freight transportation system that facilitates the effective transport of goods while minimizing negative impacts on the community ▪ Street designs that accommodate transportation modes and users of all abilities ▪ Transportation system designed to reduce vehicle miles traveled ▪ A street network managed to minimize congestion and traffic impacts ▪ Sufficient, well-designed, and convenient off-street parking facilities
City of Norwalk	
Vision Norwalk – The City of Norwalk General Plan (2023)	Vision Norwalk – The City of Norwalk 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 impacts of transportation. The plan also seeks to: ▪ Provide adequate parking, encourage alternative means of transportation, and contribute toward air quality improvements ▪ Maintain established ICU LOS thresholds of C and D for ADT link volumes and peak-hour intersection volumes, respectively

Policy Title	Summary
City of La Mirada	
City of La Mirada General Plan (2003)	The City of La Mirada 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 impacts of transportation. The plan also seeks to: ▪ Provide adequate parking, encourage alternative means of transportation, and contribute toward air quality improvements ▪ Maintain the established V/C LOS thresholds of D for residential streets and E for nonresidential streets
Orange County	
County of Orange General Plan (2025)	The County of Orange General Plan establishes policy direction for the long-range planning and growth of the county. Goals and policies have been updated to respond to changing conditions within the county. The general plan: ▪ Provides a jurisdiction with a consistent framework for land use decision-making ▪ Establishes that for unincorporated areas all streets and arterials shall maintain HCM LOS D or better, and LOS C or better on Santiago Canyon Rd, and that CMP intersections shall maintain an HCM LOS of E or better
OCTA Directions 2045: LRTP (2023)	OCTA updates the LRTP about every 4 years. The multimodal projects and programs included are the basis for the RTP. The LRTP provides a blueprint for transportation improvements for Orange County and input into the development of the RTP. 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
OCTA Orange County CMP (2023)	The purpose of the Orange County CMP is to support regional mobility and air quality objectives through these goals: ▪ Reducing traffic congestion ▪ Providing mechanism for coordinating land use and development decisions that support the regional economy ▪ Determining gas tax fund eligibility ▪ Establishing conditions for significant impact analysis of CMP monitoring locations (where projects add 2,400 or more daily trips) ▪ Establishing conditions for significant impact analysis of locations with direct access to a CMP link (where projects add 1,600 or more daily trips)
OCTA Commuter Bikeways Strategic Plan (2009)	OCTA developed the Commuter Bikeways Strategic Plan to encourage the enhancement of Orange County's regional bikeway network to make bicycle commuting a more viable and attractive travel option. Goals include providing: ▪ A strategy for improving the regional bikeway network ▪ Eligibility for state Bicycle Transportation Account funds ▪ Identification of roles and responsibilities for OCTA regarding bikeways ▪ Documentation of existing and planned Orange County bikeways

Policy Title	Summary
OCTA OC Loop 70/30 Plan (2015)	The OC Loop 70/30 Plan summarizes engineering recommendations to finish the last 30 percent of the route in an easy-to-read document for use by community stakeholders and to be used in pursuit of funding for implementation. Completing the OC Loop benefits the entire community with increased access to employment and popular attractions, enhanced mobility, reduced car dependency, and improved quality of life. Goals include: ▪ Attracting a wider variety of riders from all age groups and skill levels by providing low-stress bicycling and walking routes ▪ Providing connectivity by introducing first and last mile connections to numerous bus stops and three Metrolink stations ▪ Improving the quality of life by providing access to recreational opportunities and the ability to bike and walk in neighborhoods ▪ Transforming underutilized and abandoned spaces along rivers and railroad rights-of-way into a community amenity
OCTA Next 10 Delivery Plan (2024)	In 2006, Orange County voters approved the renewal of OC Go (also known as Measure M2), the half-cent sales tax for transportation improvements. Since then, OCTA has continued to advance implementation of OC Go through the adoption of a series of early delivery plans. Annually, OCTA reviews and updates the cash flow for the complete OC Go Plan to ensure that all projects and programs can be delivered through 2041 consistent with commitments to voters. This is the most recent iteration of early delivery plans to implement the transportation improvements under OC Go. These priorities include: ▪ Complete 14 freeways projects through construction and prepare the remaining three freeway projects for delivery. ▪ Enhance access and amenities to rail and transit, including Metrolink operations, OC Streetcar, mobility for seniors and persons with disabilities, community-based circulators, and transit stops. ▪ Provide annual competitive funding opportunities and flexible formula funding to local jurisdictions for streets and roads improvements. ▪ Ensure ongoing preservation of open space preserves and provide local jurisdictions opportunities for water quality grants.
Orange County Active Transportation Plan (2023)	OC Public Works “OC on the Move” Active Transportation Plan establishes a vision and a roadmap for implementation of pedestrian and bicyclist facilities within the county’s unincorporated communities and along county-owned flood control channel maintenance roads. General goals include: ▪ Reduce the number, rate, and severity of collisions involving people walking, biking, and rolling. ▪ Provide a comprehensive, continuous network of safe and convenient active transportation facilities. ▪ Ensure that investments are made in historically disadvantaged communities and those dependent on active transportation and transit. ▪ Facilitate an increase in trips via active travel modes. ▪ Develop consistent facility design and branding, maintaining a clear identity for residents and visitors. ▪ Create a seamless walking and biking network throughout the County. ▪ Pursue local, state, and federal grant funding for new projects, and establish regular facility maintenance strategies.

Policy Title	Summary
Orange County Highway Design Manual (2005)	The manual establishes the following design and operational parameters for roads built in unincorporated Orange County. Goals include: ▪ Providing updated design criteria, policies, and procedures for use as a guide ▪ Providing guidance in the design of new and major reconstruction projects
City of Buena Park	
Buena Park 2035 General Plan (2022)	The Buena Park 2035 General Plan establishes policy direction for the long-range planning and growth of the city. Goals and policies have been updated to respond to changing conditions within the city. The plan also seeks to maintain an established HCM and ICU LOS standard of E for CMP intersections and D for all other intersections and arterials.
City of Fullerton	
The Fullerton Plan (2025)	The Fullerton 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 impacts of transportation. The plan also seeks to provide adequate parking, encourage alternative means of transportation, ensure bicycling is a safe and convenient alternative to motorized transportation and a recreational opportunity for people of all ages and abilities, and contribute toward air quality improvements. The Fullerton Plan includes a Bicycle Element, which guides bikeway development in the city. The City of Fullerton has no established criteria of significance for traffic operations.
City of Brea	
City of Brea General Plan (2022)	The City of Brea 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 impacts of transportation. The plan also seeks to: ▪ Provide adequate parking, encourage alternative means of transportation, and contribute toward air quality improvements ▪ Maintain an established V/C LOS threshold of D or better for CMP intersections (the plan does not specify criteria for other intersections or segments)
City of Anaheim	
City of Anaheim General Plan (2025)	The City of Anaheim 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 impacts of transportation. The plan also seeks to: ▪ Provide adequate parking, encourage alternative means of transportation, and contribute toward air quality improvements ▪ Maintain an established ICU LOS threshold of D for major intersection and a peak-hour ICU LOS of E or better for CMP intersections (the plan does not specify criteria for roadway segments)
City of Anaheim Criteria for Preparation of Traffic Impact Studies (2007)	The Criteria for Preparation of Traffic Impact Studies 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 V/C ratio of ≥ 0.05 for LOS C, ≥ 0.03 for LOS D, and ≥ 0.01 for LOS E and LOS F ▪ Establishing that all intersections and segments where at least 51 trips during either peak hour will be added must be studied (certain exceptions may exist for intersections already at ICU LOS E or LOS F) ▪ Establishing that projects that generate more than 100 vehicle trips in either the AM or PM peak hour must be studied

Policy Title	Summary
City of Anaheim Bicycle Master Plan (2020)	The City of Anaheim adopted the City of Anaheim Bicycle Master Plan Update in July of 2020. The plan is a policy document that guides the City of Anaheim in its implementation of citywide bicycle facilities and is intended to improve bicycling safety, comfort, and accessibility. The plan does not contain any explicit plans or goals, but identifies priority projects for the city.
City of Placentia	
City of Placentia General Plan (2019)	The City of Placentia 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 impacts of transportation. The plan also seeks to: ▪ Provide adequate parking, encourage alternative means of transportation, and contribute toward air quality improvements The City of Placentia has no established criteria of significance for traffic operations.
City of Orange	
Orange General Plan (2025)	The Orange General Plan is the primary source of long-range planning and policy direction that will be used to guide growth and change and to preserve and enhance the quality of life within the community. The plan seeks to maintain an established V/C LOS threshold of D as the general standard for street and highway links, with a peak-hour V/C LOS of D or better at intersections (LOS E at intersections along CMP routes) (the city does not have a specific unsignalized intersection threshold).
City of Orange Bikeways Master Plan (2001)	The City of Orange adopted the Bikeways Master Plan in 2001. The master plan contains the following goal and objective: ▪ Goal 1: To Provide a safe citywide bikeway system which is integrated with other transportation systems such as buses, trains, park and ride facilities, in an effort to help reduce vehicle trips and vehicle emissions. – Objective 1.1: Develop a bikeway system that links all transportation systems together.
Airport Master Plans	
LAX Airport Master Plan (2004)	The LAX Airport Master Plan is a modernization plan that accounts for the growth of the airport since 1984. In November 2000 and January 2001, the Draft LAX Master Plan and Draft EIS/EIR were published and included three project alternatives (A, B, and C), plus a No Action/No Project Alternative. A fifth alternative, Alternative D, also known as the Enhanced Safety and Security Plan, was introduced later on and is the focus of the proposed Final Master Plan. The goals of the Final Master Plan include: ▪ Continued satisfaction of regional demands for global air transport of passengers and cargo ▪ Ensured safety of all airport users ▪ Continued efficient operations and economic benefits to local, regional, and state environments ▪ Continued operation of LAX in an environmentally sensitive and responsible manner ▪ Maximized compatibility between LAX and the demand for housing, employment, services, and the protection of surrounding neighborhoods ▪ Improved ground access to and around LAX ▪ Continued balance between increased LAX operations and environmental, social, land use, ground access, economic, and air commerce impacts

Policy Title	Summary
Fullerton Municipal Airport Master Plan Update (2004)	The Fullerton Municipal Airport Master Plan Update responds to issues of aviation safety and compatibility with the surrounding community. Community needs are addressed through regular meetings with Planning Advisory Committees established for the airport. General goals of the plan include: ▪ Administering a safe, efficient airport with sensitivity to environmental issues ▪ Planning and executing business plans to ensure financially sound operations ▪ Providing an aviation gateway to the national transportation system ▪ Providing a user-friendly aviation facility for personal and business travel and aviation public safety operations

Sources: City of Anaheim 2007, 2020, 2025; City of Bell 2016; City of Brea 2022; City of Buena Park 2022; City of Commerce 2008, 2020; City of Fullerton 2004, 2025; City of La Mirada 2003; City of Los Angeles 2007, 2011, 2024a, 2024b, 2024c; City of Montebello 2024a, 2024b; City of Norwalk 2023; City of Orange 2001, 2025; City of Pico Rivera 2014; City of Placentia 2019; City of Santa Fe Springs 2022; City of Vernon 2017, 2023; County of Los Angeles 2012, 2020, 2025; County of Orange 2005, 2025; Los Angeles World Airports 2004; LOSSAN Rail Corridor Agency 2024; Metro 2010, 2014a, 2014b, 2014c, 2018, 2020, 2023a, 2023b; OCTA 2009, 2015, 2023a, 2023b, 2024a; OC Public Works 2023; *SCAG 2005, 2008, 2020a, 2020c, 2023, 2024*

All data listed are currently limited to publicly available data sources.

ADT = average daily traffic; Caltrans = California Department of Transportation; CMP = Congestion Management Plan; EIR = environmental impact report; EIS = environmental impact statement; FSTIP = Federal Statewide Transportation Improvement Program; FTIP = Federal Transportation Improvement Program; FUL = Fullerton Municipal Airport; HCM = Highway Capacity Manual; ICU = intersection capacity utilization; LA = Los Angeles; LAX = Los Angeles International Airport; Link US = Link Union Station; LOS = level of service; LRTP = Long-Range Transportation Plan; Metro = Los Angeles County Metropolitan Transportation Authority; OC = Orange County; OCTA = Orange County Transportation Authority; RCP = Regional Comprehensive Plan; RTIP = Regional Transportation Improvement Program; RTP = Regional Transportation Plan; SCAG = Southern California Association of Governments; SCP = Sustainable Communities Program; SCS = Sustainable Communities Strategy; SRTP = Short-Range Transportation Plan; TIP = Transportation Improvement Program; USDOT = U.S. Department of Transportation; V/C = volume to capacity

3.2.3 Consistency with Plans and Laws

As indicated in Section 3.1.5.3, Consistency with Plans and Laws, CEQA and NEPA regulations require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. CEQA, Council on Environmental Quality, and FRA regulations require the discussion of any inconsistency or conflict between a proposed action and federal, state, regional, or local plans and laws. Where inconsistencies or conflicts exist, the Authority must provide a description of the extent of reconciliation and the reason for proceeding if full reconciliation is not feasible under NEPA (64 *Federal Register* 28545, 14(n)(15)) and must discuss the inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans under CEQA (State CEQA Guidelines Section 15125(d)).

Several federal and state laws, listed in Section 3.2.2.1, Federal, and Section 3.2.2.2, State, pertain to transportation resources. Pursuant to U.S.C. Title 23 Section 327, under the NEPA Assignment Memorandum of Understanding between the FRA and the State of California, effective July 22, 2024, the Authority is the federal lead agency for environmental reviews and approvals for Authority Phase 1 and Phase 2 California HSR System projects. The Authority, as the lead state agency proposing to build and operate the HSR system, is required to comply with federal and state laws and regulations and to secure applicable federal and state permits prior to initiating construction of the project.

The Authority is a state agency and is therefore not required to comply with local land use and zoning regulations; however, it has endeavored to design and build the HSR project so that it is consistent with land use and zoning regulations. The Shared Passenger Track Alternatives would be generally consistent with regional and local plans and policies reviewed.

Refer to Appendix 3.1-A for a complete consistency analysis of local plans and policies.

3.2.4 Methods for Evaluating Impacts

The evaluation of impacts on transportation is a requirement of NEPA and CEQA. The following sections summarize the RSA and the methods used to analyze impacts on transportation. As

summarized in Section 3.2.1, Introduction, several other sections also provide information related to transportation.

3.2.4.1 Definition of Resource Study Area

As defined in Section 3.1.5.4, Methods for Evaluating Impacts, RSAs are the geographic boundaries in which the Authority conducted environmental investigations specific to each resource topic. The RSA for impacts on transportation resources considers using the project footprint within roadway segments, intersections, and freeway ramps. However, because the area of potential effects for transportation typically extends beyond the physical HSR project 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 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. The RSA for the Shared Passenger Track Alternatives is depicted on Figure 3.2-1 (sheets 1 through 8), which includes the areas around the alignment as well as the areas around the HSR station options at Norwalk/Santa Fe Springs and Fullerton.

Table 3.2-3 Definition of Transportation Resource Study Areas

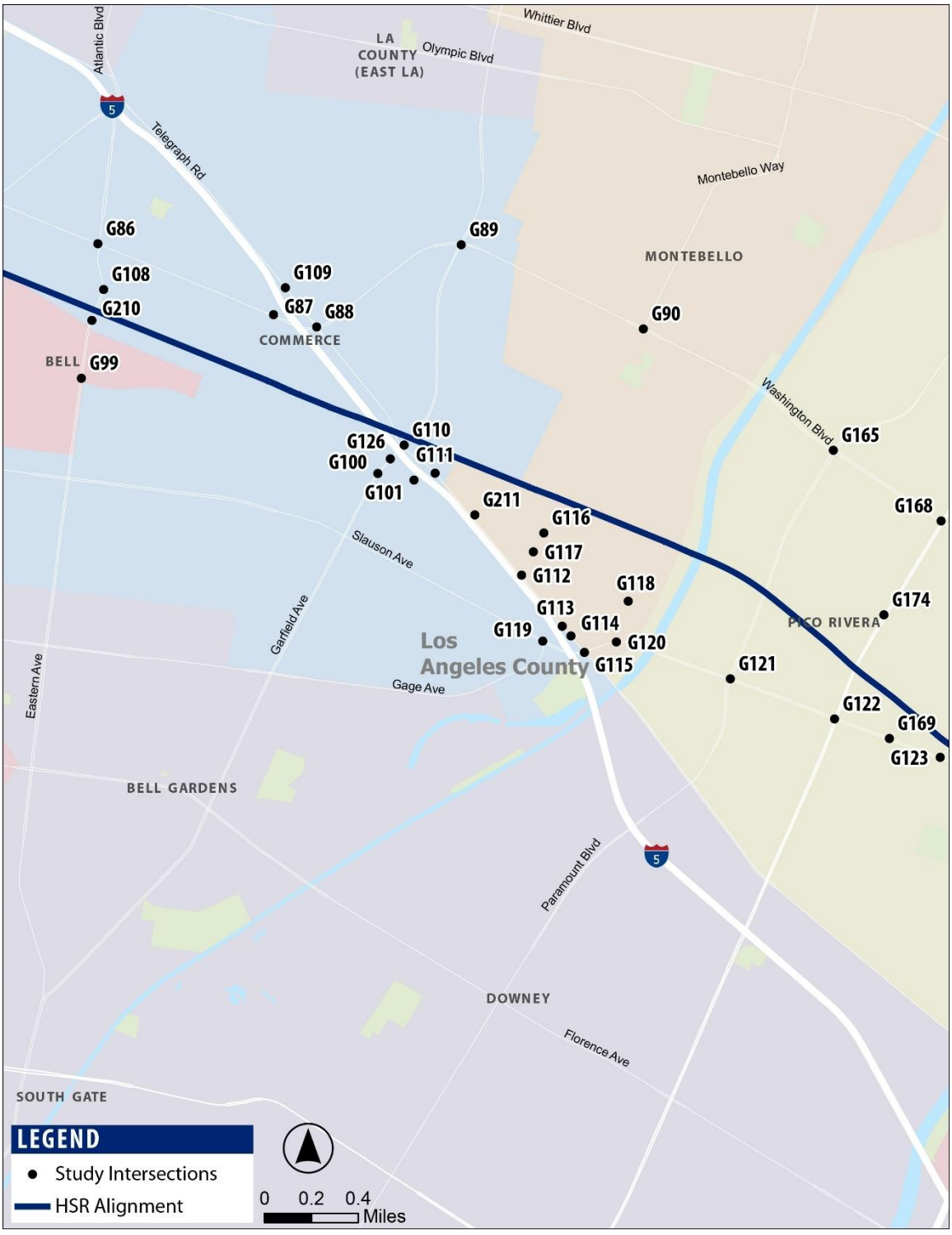
General Definition	Resource Study Area Boundary
Roadways and Intersections (Vehicle Circulation)	
Direct impacts	Project footprint
Indirect impacts	Includes major state routes for regional access; regionally significant roadways as defined by Caltrans, SCAG, OCTA, and Metro; congestion management programs and relevant general plans; and regional truck routes that could be affected by construction of the project alternatives. The indirect RSA for intersections includes critical intersections of access points and regionally significant roadways between a station or LMF and adjacent state highways, and critical intersections near at-grade crossings. The indirect RSA also includes freeway segments that would serve 100 or more project-generated trips and intersections of roadways classified as a collector or above that would be physically modified by the project or would serve 50 or more project trips in either the AM or PM peak hour.
Indirect Impacts	▪ If roadways are proposed to be closed, 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 ▪ Critical intersections of collector (or higher) facility types that have an increase of 50 or more vehicles in the peak hour created by HSR station area activity ▪ Freeway mainline segments that are expected to have an increase of 100 or more vehicles in the peak hour created by HSR station area activity ▪ Freeway ramps in which there is an increase of more than 100 vehicles on the ramp created by HSR station area activity
Transit	
Direct impacts	Project footprint
Indirect Impacts	Includes regional and local bus transit service and passenger rail service that could be affected by construction of the project alternatives, including existing and planned public transit systems serving HSR stations in the project section and ground transit facilities affected by added gate-down time at or adjacent to at-grade crossings.

General Definition	Resource Study Area Boundary
Nonmotorized Travel	
Indirect Impacts	Includes infrastructure for pedestrian and bicycle transportation that could be affected by construction of the project alternatives, as well as existing and planned pedestrian and bicycle facilities out to a distance of 500 feet from the project footprint (beyond 500 feet, project-related effects would dissipate and not be substantial).
Freight and Passenger Rail	
Direct impacts	Project footprint
Indirect Impacts	Includes freight and passenger rail track and systems that would be affected by construction of the project alternatives and existing freight and passenger rail facilities within 500 feet of the project footprint.
Aviation	
Direct impacts	Includes airports within 2 miles of the project footprint (beyond 2 miles, the project would not have direct effects on airport operations).
Indirect Impacts	Includes airports within Los Angeles and Orange Counties, and the state of California as a whole.

[1] The project footprint includes all areas required to build, operate, and maintain all permanent HSR facilities, including permanent right-of-way, permanent utility and access easements, and temporary construction easements.
Caltrans = California Department of Transportation; HSR = high-speed rail; LMF = light maintenance facility; OCTA = Orange County Transportation Authority; Metro = Los Angeles County Metropolitan Transportation Authority; project section = Los Angeles to Anaheim Project Section; RSA = resource study area; SCAG = Southern California Association of Governments

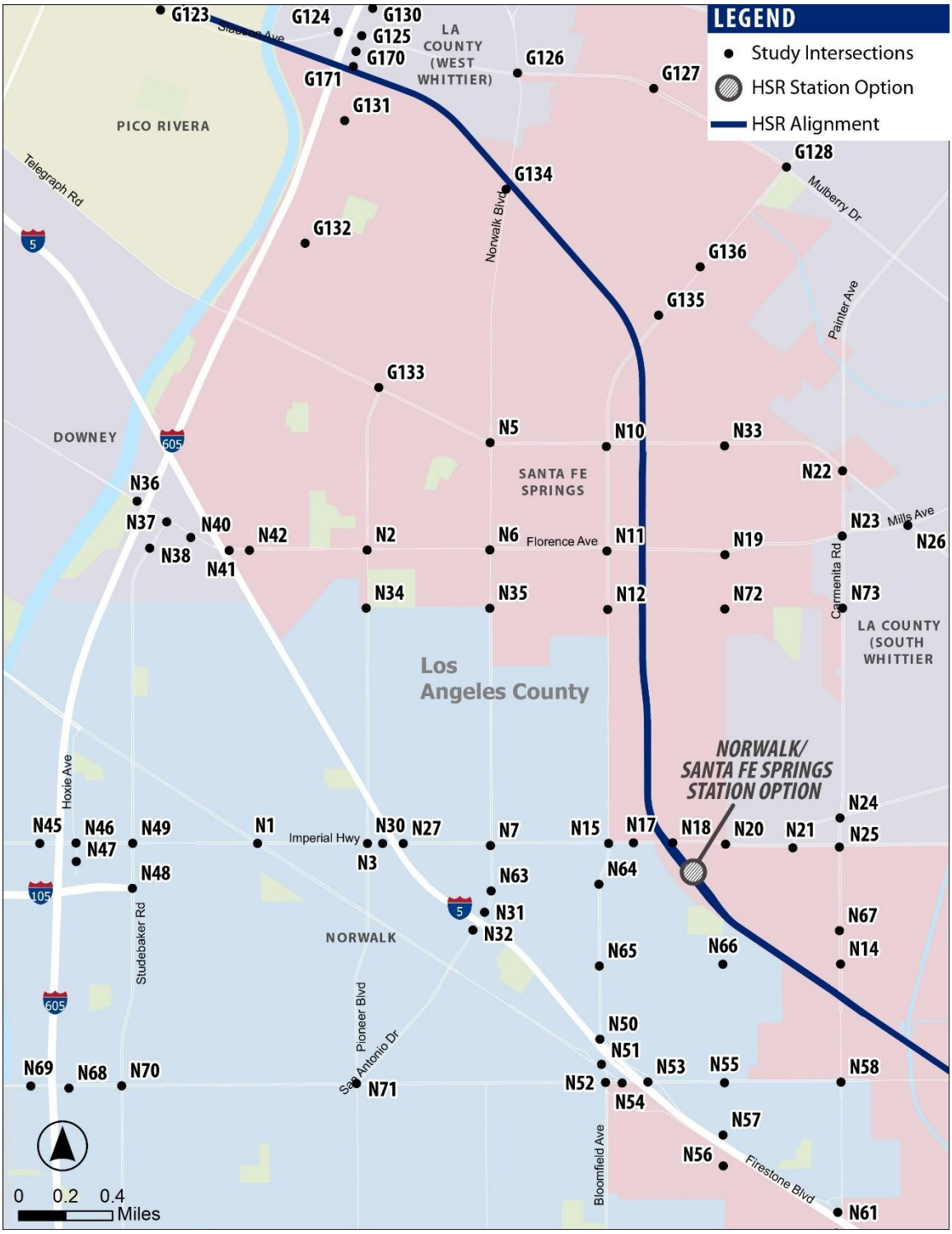
Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 1 of 7



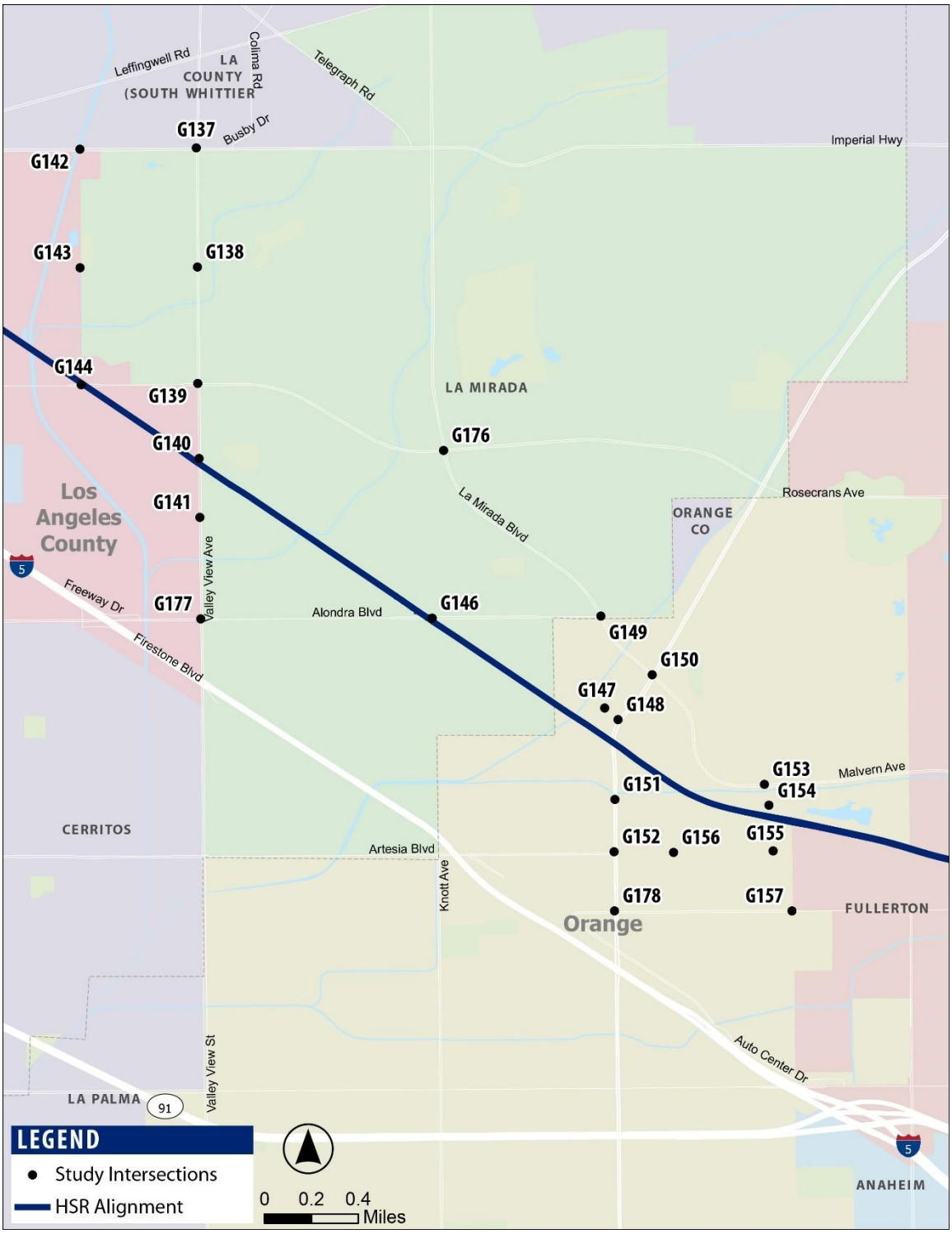
Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 2 of 7



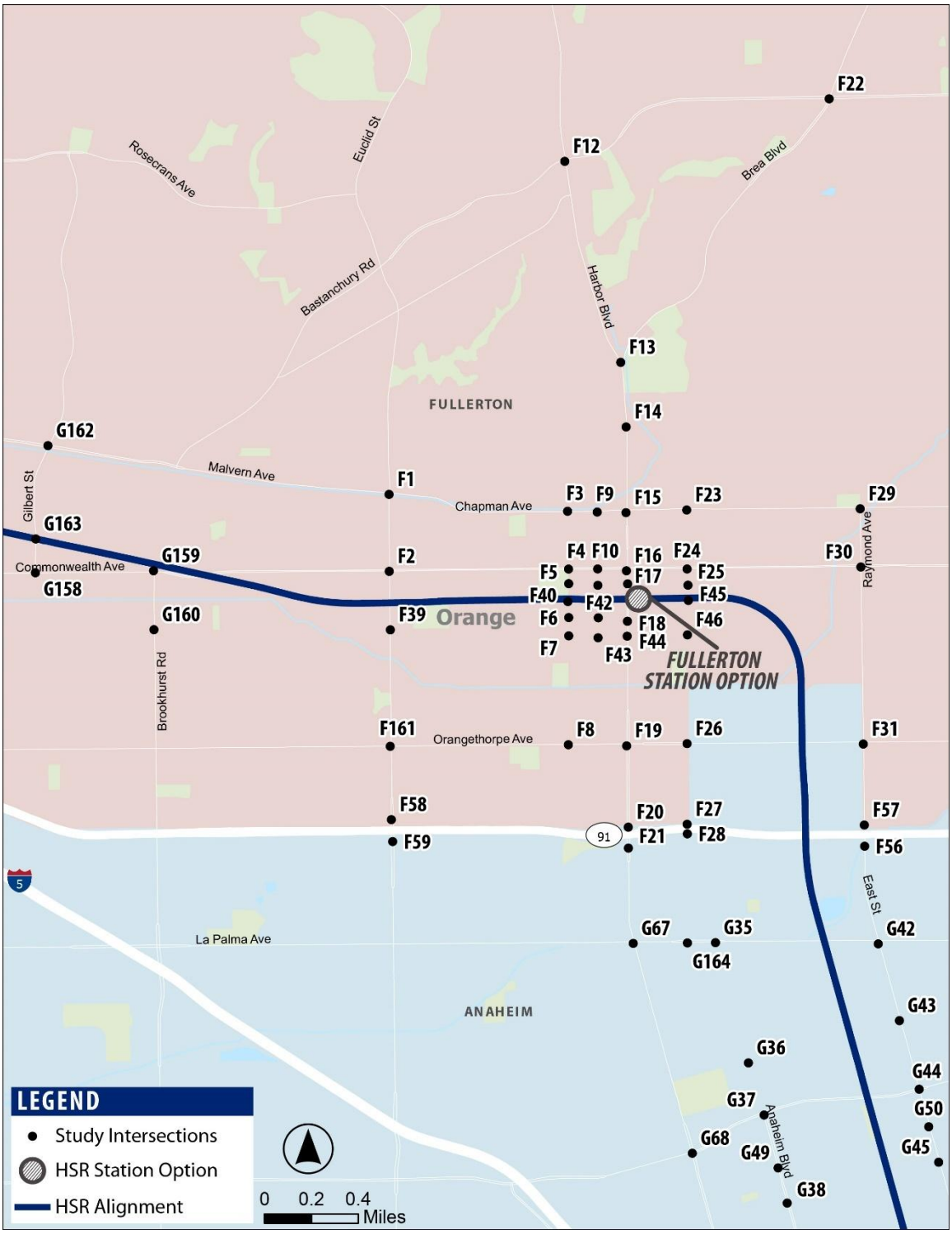
Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 3 of 7



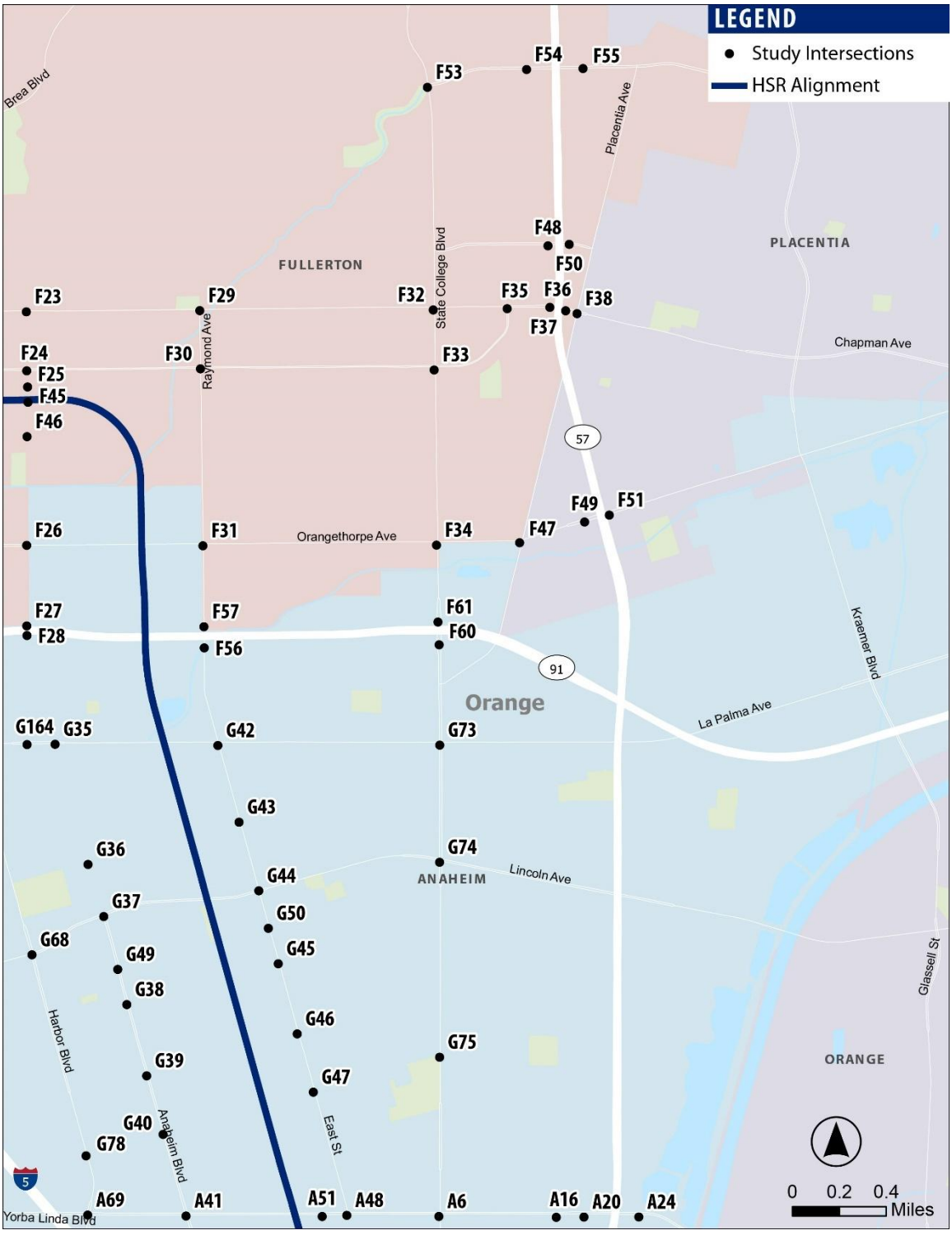
Source: Authority 2025
"N" intersection number prefix indicates intersections within Norwalk/Santa Fe Springs High-Speed Rail Station Option area.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 4 of 7



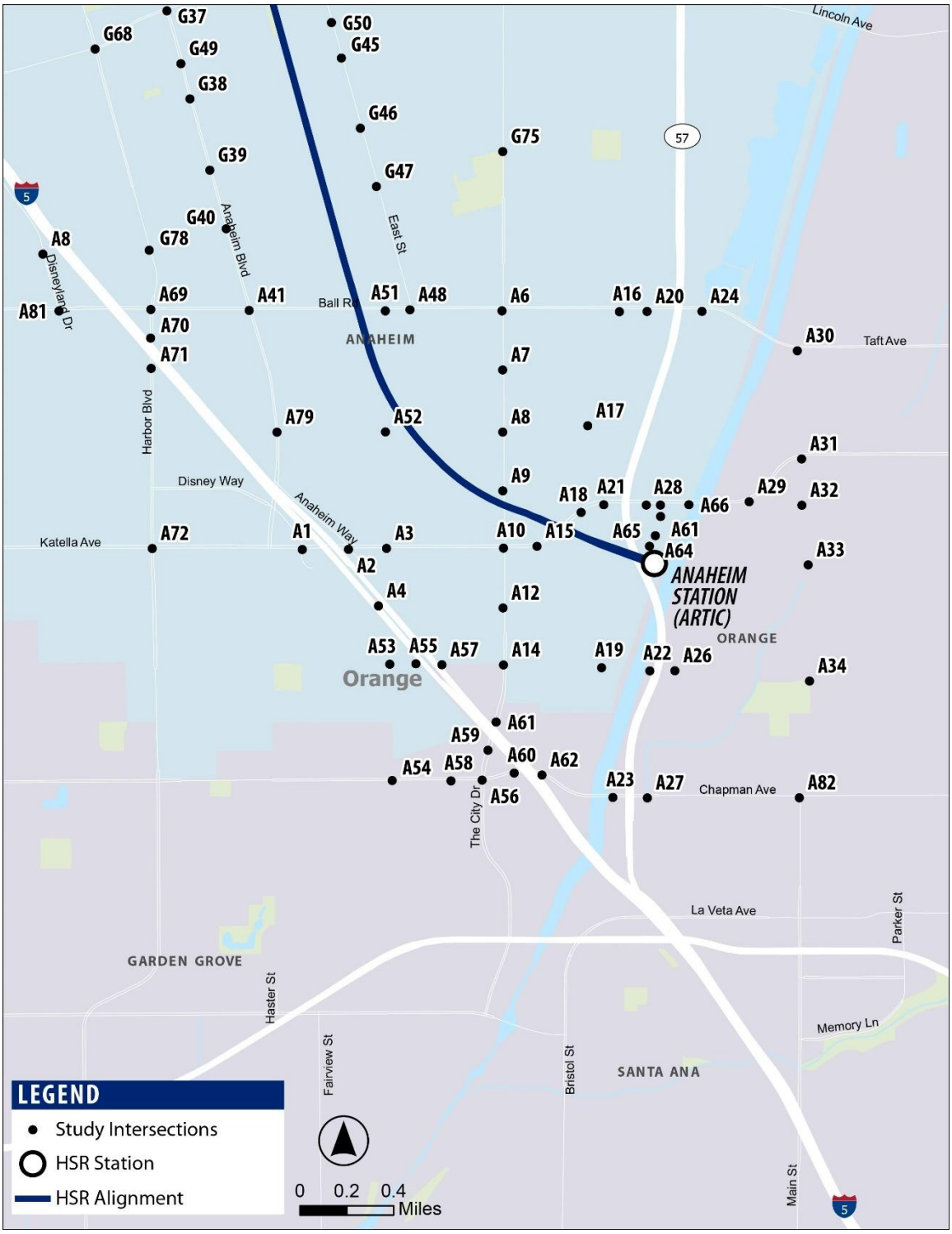
Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-1 Resource Study Area Study Intersection, Sheet 5 of 7



Source: Authority 2025
"F" intersection number prefix indicates intersections within Fullerton High-Speed Rail Station Option area.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 6 of 7



Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-1 Resource Study Area Study Intersections, Sheet 7 of 7

3.2.4.2 Impact Avoidance and Minimization Features

The Shared Passenger Track Alternatives incorporate standardized HSR features to avoid and minimize impacts. These features are referred to as IAMFs and are considered part of the project. The Authority will incorporate IAMFs during project design and construction; therefore, the analysis of impacts of the Shared Passenger Track Alternatives in this section factors in applicable IAMFs. Appendix 2-A provides a detailed description of IAMFs that are included as part of the project design. IAMFs applicable to transportation include:

- **TR-IAMF#1, Protection of Public Roadways During Construction,** requires the Authority to provide a photographic survey documenting the condition of public roadways along truck routes providing access to the construction site and be responsible for the repair of structural damage caused by HSR construction.
- **TR-IAMF#2, Construction Transportation Plan,** requires the Authority to prepare a detailed Construction Transportation Plan 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,** requires the Authority to identify adequate off-street parking for construction-related vehicles throughout the construction period to minimize impacts on public on-street parking areas.
- **TR-IAMF#4, Maintenance of Pedestrian Access,** requires the Authority to prepare and implement specific Construction Management Plans (CMP) to address maintenance of pedestrian access during the construction period.
- **TR-IAMF#5, Maintenance of Bicycle Access,** requires the Authority to prepare and implement specific CMPs to address maintenance of bicycle access during the construction period.
- **TR-IAMF#6, Restriction on Construction Hours,** requires the Authority to limit construction materials deliveries between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. on weekdays and the number of construction employees arriving or departing the site between 7:00 a.m. and 8:30 a.m. and between 4:30 p.m. and 6:00 p.m. to minimize impacts on traffic on roadways.
- **TR-IAMF#7, Construction Truck Routes,** requires the Authority to deliver construction-related equipment and materials on the appropriate truck routes and prohibits heavy construction vehicles from using alternative routes to get to the site.
- **TR-IAMF#8, Construction During Special Events,** requires the Authority to provide a mechanism to prevent roadway construction activities from reducing roadway capacity during major athletic 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,** requires the Authority to repair structural damage to freight or public railways that may occur during the construction period and return damaged sections to their original structural condition.
- **TR-IAMF#11, Maintenance of Transit Access,** requires the Authority to prepare and implement specific CMPs to address maintenance of public transit access during the construction period.
- **TR-IAMF#12, Pedestrian and Bicycle Safety,** requires the Authority's contractor to provide a technical memorandum prior to construction describing how pedestrian and bicycle accessibility and safety will be provided and supported throughout the project section, to and from stations, and on station property.
- **TR-IAMF#13: Stakeholder Coordination with Transportation Agencies,** requires the Authority to work closely with all agencies that provide freight or passenger rail services, bus

services, or maintain operating rights within the corridor to define roles and responsibilities within the shared corridor, inclusive of operational and maintenance responsibilities, to prevent effects on service levels, including bus routes servicing existing rail stations and anticipated to service planned rail stations.

In Section 3.2.6, each impact narrative describes how these project features are applicable and, where appropriate, effective at avoiding or minimizing potential impacts to less-than-significant levels under CEQA.

3.2.4.3 Methods for Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts on transportation from implementing the Shared Passenger Track Alternatives. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.2.4.4, Method for Evaluating Impacts Under NEPA, for an explanation of the methods for determining significance under CEQA. Refer to Section 3.1.5.4 for a description of the general framework for evaluating impacts under NEPA and CEQA. Laws, regulations, and local planning documents (refer to Section 3.2.2, Laws, Regulations, and Orders) that regulate transportation were also considered in the evaluation of direct and indirect impacts on transportation. For project construction and operational actions that would result in impacts, feasible mitigation measures are identified to avoid or minimize impacts or to compensate for impacts.

The methodology for analyzing potential transportation impacts begins with defining the study approach and the comparative scenarios to analyze. The *Project Environmental Impact Report/ Environmental Impact Statement Environmental Methodology Guidelines*, Versions 5.9 and 5.11 (Authority 2017, 2022), as amended, define specific environmental baselines for environmental impact assessment purposes. The specific details of each baseline and each scenario for the project to be analyzed under each baseline are explained in Table 3.2-4. For the Shared Passenger Track Alternatives, the SCAG 2020 RTP/SCS baseline year of 2016 and buildout year of 2040 were 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 interpolation for the year 2040 from the 2016 and 2045 SCAG model years' output, and then calculation of the annual and compounded growth.

Because of the potential for the Shared Passenger Track Alternatives to affect roadway facilities, the transportation analysis focused on the roadway facilities the project would cross, roadway facilities that would be modified by the project as part of construction, and new roadway facilities that would be built as part of the Shared Passenger Track Alternatives. These issues were analyzed for existing and Horizon Year traffic conditions, leading to analysis of the following scenarios in Table 3.2-4.

Refer to the *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025) for more information regarding the methods and data sources used in the project analysis.

Table 3.2-4 Environmental Baselines for the Project

Analysis Scenarios	Description
Existing Conditions (Year 2015)	
Existing No Project (existing roadway configuration)	The existing year transportation analysis assumed that the traffic counts represent Year 2015 conditions. Projects that were currently under construction were assumed to be completed.
Existing Plus Project Alternative (permanent impacts from roadway reconfigurations)	This is a theoretical scenario that assumes the Shared Passenger Track Alternatives were built immediately. It includes permanent construction roadway changes that result in rerouting of traffic. The Existing No Project scenario serves as the basis for comparison with this scenario.

Analysis Scenarios	Description
Existing Plus Construction of Shared Passenger Track Alternatives (temporary impacts during construction)	Impacts related to temporary construction activities during project construction are assessed. The Existing No Project scenario serves as the basis for comparison with this scenario.
Horizon Year 2040	
Horizon Year 2040 No Project Alternative	This scenario represents the planning Horizon Year. It includes ambient growth and cumulative projects that are currently approved in the SCAG 2020 RTP/SCS.
Horizon Year 2040 Plus Project (Shared Passenger Track Alternatives and HSR station options)	This scenario represents the year that the project has attained full ridership with the remainder of the statewide HSR system. Operational impacts related to HSR ridership at each station in the project section are assessed using ridership projections for the Horizon Year 2040. Shared Passenger Track Alternatives A and B involve similar elements except for light maintenance facility location. The Shared Passenger Track Alternative A light maintenance facility is on 26th Street, while the Shared Passenger Track Alternative B light maintenance facility is on 15th Street. The Horizon Year 2040 No Project Alternative serves as the basis for comparison with this scenario.

HSR = high-speed rail; project section = Los Angeles to Anaheim Project Section; RTP = Regional Transportation Plan; SCAG = Southern California Association of Governments; SCS = Sustainable Communities Strategy

Traffic Data Sources

The existing year transportation operational analysis assumes that traffic counts represent Year 2015 conditions for the Shared Passenger Track Alternatives. Projects that are currently under construction were assumed to be completed. Traffic counts were performed on typical weekdays, with most traffic counts taken during typical peak periods of 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m., between September 2015 and November 2015 on typical weeks without holidays, and while schools were in session. When traffic counts were obtained in differing years, these counts were reviewed for general magnitude with nearby counts obtained in 2015, and adjustments were applied where needed. The best available data sources were used. This included obtaining intersection and roadway segment traffic counts; obtaining traffic data available online from Los Angeles County Metropolitan Transportation Authority (Metro), Orange County Transportation Authority (OCTA), and Caltrans; and using the online Caltrans Performance Measurement System database. Supplemental cordon counts surrounding Hobart Yard were taken on July 1, 2021, to supplement count data provided by BNSF Railway (BNSF).

Permanent Roadway Modifications

The intent of this analysis is to document permanent roadway changes that would result in rerouting of traffic. The Existing No Project scenario serves as the basis for this scenario, and the Existing Plus Project scenario is a theoretical scenario that assumes the Shared Passenger Track Alternatives would be built immediately (scenarios are defined in Table 3.2-4). The resulting change would reflect the immediate impacts caused by the project and would therefore provide an equal comparison for impacts analysis. Quantitative Existing Plus Project scenario analysis was conducted for the viaduct crossings, new/improved grade separations or at-grade crossings, and infrastructure that would be built as a result of the Shared Passenger Track Alternatives.

Temporary Roadway Modifications

The intent of this analysis is to document temporary construction activities related to the Shared Passenger Track Alternatives. The Existing No Project scenario serves as the basis for this scenario. Qualitative Existing Plus Construction analysis was conducted for the viaduct crossings, new/improved grade separations or at-grade crossings, and infrastructure that would be built as a

result of the Shared Passenger Track Alternatives. Qualitative impacts on pedestrian and bicycle safety were also evaluated.

Traffic Growth Projection

The SCAG 2020 RTP/SCS Travel Demand Model was used to estimate future growth rates for both baseline scenarios within the project section. The ratios of the base year (2016) and future year (2040) link volumes in the SCAG model were used to compute growth factors for volumes entering into and exiting out of intersections during both AM and PM peak periods. The growth factors for the AM and PM peak periods were applied to the base year AM and PM peak-hour traffic counts (respectively) yearly to produce future initial link volumes for analysis. To calculate future intersection turning-movement volumes, a procedure based on the National Cooperative Highway Research Program 765 "Iterative Method" (also referred to as the Furness Method) was used. In general, balancing did not need to be performed on traffic between intersections because there are usually driveways and side streets between major intersections so that the traffic leaving one major intersection is usually not equal to the traffic arriving at the next major intersection. In rare cases where there are no intervening driveways or side streets—such as the adjacent ramp intersections at an interchange—balancing was performed. This resulted in adjusted link volumes (rounded up to the nearest 100 and averaged between each intersection) and intersection turning-movement volumes (rounded up to the nearest 10). Ambient growth associated with the projected intermodal facilities at Hobart Yard and Commerce Yard was also factored. Volume adjustments, when performed, generally assumed that traffic volumes did not decrease in future years. The resulting future link volumes and intersection turning-movement volumes served as the basis for traffic operations in Phase 1 Full Operation Horizon Year 2040.

Future lane configurations were based on:

- The committed mitigation measures that can be found in the approved SCAG 2020 fiscally constrained RTP project list (with amendments incorporating Federal Transportation Improvement Program and federal STIP project lists)
- Changes proposed by the Shared Passenger Track Alternatives

Trip Generation, Distribution, and Assignment for Station Operational Trips

Given the complex nature of the daily ridership data the Authority has generated, the trip-generation calculation was completed in a series of progressive steps.

A new statewide ridership model was completed in December 2023 for the HSR project. These data were generated to support the 2023 Project Update Report and are used in this analysis, because they include the Shared Passenger Track Alternatives and considered various intermediate station scenarios. These data are different from the 2016 model data with respect to passenger volumes and origin/destination information and are reflected in traffic analysis for this Draft EIR/EIS. To incorporate this updated ridership information, the Authority assumed that traffic patterns and routes from trip origins to HSR stations (and vice versa) remained the same between 2016 and 2023, but volumes of riders transiting each traffic study intersection/link would be different. The number of HSR trips heading through each intersection and link were estimated by comparing proximity and direction of travel for each HSR station along the project section and factoring the 2016 with-project volumes up or down to establish 2023 with-project volumes.

The Authority generated daily passenger trips as origin and destination passenger trips for each station in the project section and for future year baseline. Origin and destination passenger trips were calculated by mode using the Statewide Travel Demand Model. The daily passenger trips were then assigned to designated roadways at the periphery of each station area, based on the proximity of each trip generated to the nearest entrance point.

The passenger trips were converted to vehicle trips, based on vehicle occupancy rates for buses and autos calculated from the ridership data the Authority generated. The passenger trips by auto mode were split into park-and-ride trips and pick-up/drop-off trips, based on the mode-share percentages the Authority generated. For analysis purposes, the pick-up/drop-off mode included taxi, rental car, and kiss-and-ride.

Percentages of daily trips incurred during the peak period were then provided at each station for future year baseline. These trips were then converted to peak-hour trips for both the AM and PM peak traffic hours.

Trip distribution for station activity trips was determined based on each station area's facilities, as depicted on the conceptual site plans in Chapter 2, Alternatives. The trip generation and distribution were coded into a roadway network, and the trips were assigned to the study intersections and roadway segments using the most logical and direct routes between each point where trips enter the modeled roadway network and the station entrance.

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. For intersections, LOS is determined based on intersection control delay. For segments, LOS is determined based on estimated V/C ratio.[2] The Transportation Research Board's 2010 HCM (TRB 2010) procedures were followed in measuring transportation facility performance.[3]

Intersection Level of Service

Using the HCM 2010 procedures, the quality of operation is graded into one of six LOS designations: A, B, C, D, E, or F, with A representing excellent (free-flow) conditions and F representing extreme congestion (forced or breakdown flow). The HCM 2010 methodology uses a control-delay performance measure to determine the overall intersection LOS. Synchro 12 software was used to calculate HCM 2010 control delay and resulting LOS. HCM 2000 was used to analyze nonstandard intersection types such as five-leg intersection types.

The LOS definitions and thresholds for signalized intersections are identified in Table 3.2-5 and Table 3.2-6. The LOS thresholds for unsignalized intersections are identified in Table 3.2-7.

Table 3.2-5 Signalized Intersections Level of Service Thresholds and Definitions

LOS	Definition	Control Delay (sec/veh)
A	LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	LOS B describes operations with control delay between 10 and 20 sec/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10–20

[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 ratio).

[3] LOS remains one measure of impact for NEPA transportation impact analysis. However, per Senate Bill 743, LOS is no longer considered valid for CEQA transportation impact determination and VMT is used for analysis of transportation impacts.

LOS	Definition	Control Delay (sec/veh)
C	LOS C describes operations with control delay between 20 and 35 sec/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20–35
D	LOS D describes operations with control delay between 35 and 55 sec/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35–55
E	LOS E describes operations with control delay between 55 and 80 sec/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55–80
F	LOS F describes operations with control delay exceeding 80 sec/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: TRB 2010
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; sec/veh = seconds per vehicle

Table 3.2-6 Signalized Intersection Control Delay and Level of Service Threshold Criteria

Control Delay (sec/veh)	LOS by Volume-to-Capacity Ratio[1]	
	≤1.0	> 1.0
≤10	A	F
> 10–20	B	F
> 20–35	C	F
> 35–55	D	F
> 55–80	E	F
> 80	F	F

Source: TRB 2010
[1] 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; sec/veh = seconds per vehicle

Table 3.2-7 Unsignalized Intersection Control Delay and Level of Service Threshold Criteria

Control Delay (sec/veh)	LOS by Volume-to-Capacity Ratio	
	≤ 1.0	> 1.0
0–10	A	F
> 10–15	B	F
> 15–25	C	F
> 25–35	D	F

Control Delay (sec/veh)	LOS by Volume-to-Capacity Ratio	
	≤ 1.0	> 1.0
> 35–50	E	F
> 50	F	F

Source: TRB 2010
LOS = level of service; sec/veh = seconds per vehicle

Roadway Segment 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.

Table 3.2-8 contains the LOS criteria for roadway segments.

Table 3.2-8 Level of Service and Volume-to-Capacity Ratio Thresholds for Roadway Segments

Level of Service	Volume-to-Capacity Ratio	Definition
A	< 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 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	0.81–0.90	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. Unacceptable conditions.

Source: TRB 2010

Freeway Mainline Segment Operational Standards

Freeway mainline segment analysis is based on the use of the V/C ratio, which is a surrogate measure for the LOS approach often used to determine the performance of freeway segments. The freeway mainline capacities were sourced from the 2016 SCAG Regional Travel Demand Model and Model Validation Report (SCAG 2020b). By definition, LOS A represents a freeway mainline segment with a V/C ratio less than or equal to 0.35, while LOS F represents a freeway mainline segment with a V/C ratio greater than 1. The V/C ratio thresholds used for the freeway analysis were adopted from the 2010 Los Angeles Congestion Management Program report (Metro 2010). Table 3.2-9 presents the correlation between freeway mainline segment capacity and free-flow speeds. Table 3.2-10 defines the LOS criteria for the freeway segment analysis.

Table 3.2-9 Freeway Segment Peak-Hour Capacities

Posted Speed Limit (miles per hour)	Capacity (Passenger cars per lane per hour)
55 and below	1,900
60 and 65	2,000
70 and above	2,100

Source: SCAG 2020b

Table 3.2-10 Freeway Segment Volume-to-Capacity Ratios and Level of Service

Volume-to-Capacity Ratio	Level of Service
0.00–0.35	A
> 0.35–0.54	B
> 0.54–0.77	C
> 0.77–0.93	D
> 0.93–1.00	E
> 1.00	F

Source: Metro 2010

Freeway Ramp Traffic Operational Standards

The guidance or standards for evaluating queue lengths on freeway ramps are contained in Caltrans' *Ramp Metering Design Manual* (Caltrans 2016). For purposes of analysis, peak-hour queue lengths were calculated at freeway on-ramp and off-ramp locations where project trips would add 100 or more trips in the peak hour to the ramp. Operations analysis of proposed improvements to Caltrans on-ramps and off-ramps is conducted according to the methodology set forth in the Caltrans *Highway Design Manual* (December 2015).

Laws, regulations, and orders (refer to Section 3.2.2) that regulate transportation were also considered in the evaluation of impacts on transportation.

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 operational 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.
- For freeway mainline segments, a significant impact would occur if the Plus Project conditions would have an LOS of E or F and the project would result in an increase in V/C

ratio of 0.02 (2 percent increase) or more over the baseline condition (V/C = 1.00 is equivalent to a facility operating at capacity).

- For freeway off-ramp analysis, the impact criteria are based on the 95th percentile queue. An impact is considered substantial if the queue exceeds provided capacity (i.e., at least 5 percent of the time the queue length would be longer than the available storage distance of the off-ramp and thus would extend back to the freeway mainline).

Vehicle Miles Traveled Calculation

VMT is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. The 2023 Project Update Report was not used for VMT calculations because the methodology did not allow for calculating No Project and Plus Project VMT. The 2023 Project Update Report only provided a proxy by which to obtain VMT avoidance. Therefore, total VMT was derived from the statewide travel demand model estimate of daily VMT using medium and high ridership forecasts, as defined in the Authority's 2024 Business Plan (Authority 2024a) . The methodology used to estimate VMT is summarized below.

The Authority developed ridership forecasts for the HSR system using the 2024 version of the statewide California Rail Ridership Model. The model incorporates socioeconomic growth assumptions (population, housing, and employment forecasts) consistent with the California Statewide Travel Demand Model and adjusts them for the 2045 forecast year. The statewide conventional passenger rail and urban transit networks are consistent with current and planned routes in the 2023 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 GHG emissions. The California Rail Ridership 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 several of the RSA intersections and freeway segments, as well as local counties.

The Authority calculated 2040 statewide VMT associated with Shared Passenger Track Alternatives A and B using the 2024 Business Plan ridership data. However, as detailed further in Appendix 1-A, Changes in Project Benefits and Impacts, the 2024 Business Plan did not model the intermediate station options and, therefore, did not reflect VMT with implementation of either the Norwalk/Santa Fe Springs or Fullerton HSR Station Options. As a result, the Authority developed a methodology to calculate statewide VMT with implementation of the HSR station options (refer to Appendix 1-A), using a blend of data from the 2023 Project Update Report and 2024 Business Plan, because the 2023 Project Update Report ridership data included the two intermediate station option scenarios.

Parking Analysis

The focus of the parking analysis is on the HSR stations and the effects on parking from project construction and operations at and adjacent to the stations is limited to whether a reduction in parking results in the potential for secondary physical impacts on the environment and, for NEPA purposes only, socioeconomic conditions. Existing parking was identified by review of aerial photography and public websites.

Transit Analysis

The Authority evaluated transit facilities and operations, including bus services, by reviewing the effect of project footprint plans, passenger trip generation estimates, and intersection LOS on transit in the project footprint. The Authority obtained data for existing and future transit services from on-site reviews of existing facilities and from reviews of publicly available information and plans.

Nonmotorized Travel Analysis

The Authority evaluated nonmotorized transportation facilities, including bicycle and pedestrian facilities, by reviewing engineering plans and project footprints and passenger trip-generation estimates. Specifically, analysts evaluated impacts of the project designs on nonmotorized transportation in the project footprint and the impact of project-related trips on nonmotorized transportation in the project footprint and RSA. Analysts obtained data for existing and future nonmotorized facilities from on-site reviews of existing facilities, from review of publicly available information and plans, and by contacting the various jurisdictions (e.g., City of Los Angeles, Caltrans).

Freight and Passenger Rail Service

The Authority evaluated construction impacts on freight and passenger rail service qualitatively by identifying where project construction would result in disruptions to such services and how long the disruptions would last. Analysts evaluated the operational impacts on freight and passenger rail service where the project would share passenger and freight rails based on potential changes in freight service access, routing, and operating hours because of shared tracks.

Additionally, the Authority evaluated project construction impacts on passenger rail service by identifying the temporary closures of passenger rail track that would likely disrupt service. The Authority assessed the operational capacity of the corridor with introduction of HSR service, taking into account projected freight and passenger rail service per the 2018 State Rail Plan.

Aviation

Section 3.11 reviews airport master plans and potential construction and operational safety impacts on public and private airports within 2 miles of the project and concludes that the project would be consistent with airport master plans, would conform to airspace safety requirements, and would not have an impact on aviation safety. That analysis is not repeated in this section.

There are four public airports within 2 miles of the project section: Los Angeles International Airport (LAX), Long Beach Airport, Fullerton Municipal Airport, and John Wayne Airport. These airports, with the exception of Fullerton Municipal Airport, serve commercial flights.

Operations of the overall HSR system would be expected to result in some changes in the demand for air travel on a statewide and regional basis. LAX, Long Beach Airport, and John Wayne Airport provide regular commercial aviation service and are approximately 11 miles, 7 miles, and 8 miles, respectively, from the project section. These airports serve the Los Angeles and Orange County areas and would be expected to experience a reduction in demand as a result of the project. Demand for some trips otherwise expected to be made by air would be made using HSR instead. As explained in the *Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System* (Authority and FRA 2005), airports in the Los Angeles area and the San Francisco Bay Area are constrained in terms of runway and terminal capacity; without the HSR system, there would be a need for expansion of major airports. Consequently, the reduction in air travel demand would allow for better management of the limited capacity of existing airports as well as reduce the demand for construction of additional runways and terminals.

The HSR system would also provide more convenient access to airports for some travelers in general and to LAX in particular. This improved access could increase demand for air travel in some cases.

Although the HSR system would change air travel demand on a statewide and regional basis, it would also provide more convenient access to airports. The Shared Passenger Track Alternatives would not conflict with adopted aviation programs or otherwise decrease the performance or safety of aviation facilities and would allow for better management of existing constrained airport facilities.

Because the project would not have an adverse effect on aviation facilities or operations, the operational effects on aviation are not reviewed further in this section.

3.2.4.4 Method for Evaluating Impacts Under NEPA

NEPA and NEPA implementing procedures, regulations, and guidance provide the basis for evaluating project effects (as described in Section 3.1.5.4). The criteria of context and intensity are considered together when determining the severity of changes introduced by the project:

- **Context:** For the transportation analysis, the *context* would include adopted local plans, policies, and regulations; existing and planned transportation systems; and the relative sensitivity of transportation conditions to construction or operational changes.
- **Intensity:** For the analysis of transportation effects, *intensity* is determined by assessing the degree to which the proposed project would result in changes to transportation-related conditions, and inconsistency with regional and local transportation plans.

In addition, the Authority identified criteria to be used for the identification of adverse NEPA effects in evaluating construction-related and operations-related effects on the roadway network as follows:

- For roadway segments, if the Plus Project conditions would have an LOS of E or F and the project would result in an increase in V/C ratio of 0.04 (4 percent increase) or more over the baseline condition (V/C = 1.00 is equivalent to a facility operating at capacity)
- For signalized intersections, if the Plus Project conditions would have an LOS E or F and the project would result in an increase in average traffic delay of 4 seconds or more over the baseline condition
- For unsignalized intersections, if the Plus Project conditions would have an LOS E or F and the project would result in an increase in traffic delay of 5 seconds or more (measured as average delay for all-way stop or worst-movement delay for side-street-stop intersection), and if the intersection satisfies one or more traffic signal warrants for at least 1 hour of the day
- For freeway mainline segments, if the Plus Project conditions would have an LOS of E or F and the project would result in an increase in V/C ratio of 0.02 (2 percent increase) or more over the baseline condition (V/C = 1.00 is equivalent to a facility operating at capacity)
- For freeway off-ramp analysis, the impact criteria are based on the 95th percentile queue. An impact is considered substantial if the queue exceeds provided capacity (i.e., at least 5 percent of the time the queue length would be longer than the available storage distance of the off-ramp and thus would extend back to the freeway mainline).

3.2.4.5 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 (refer to Section 3.1.5.4 for further information). Accordingly, Section 3.2.9 summarizes the significance of the environmental impacts on transportation. The Authority is using the following thresholds to determine if a significant impact on transportation would occur as a result of project construction and operation.

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities

Impacts related to increases in hazards because of geometric design features or incompatible uses and impacts resulting in inadequate emergency access are evaluated in Section 3.11 of this Draft EIR/EIS.

In addition, Appendix G of the State CEQA Guidelines recommends an evaluation of whether the project would “cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.” Even when a project is inconsistent with a plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, CEQA is concerned with the physical

environmental impacts that would result from the inconsistency and not the inconsistency itself. Whether the project would conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect is discussed in each resource section of Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, of this Draft EIR/EIS. Unless otherwise stated, environmental impacts that would result from a conflict with plans, policies, or regulations adopted for the purpose of mitigating or avoiding an environmental impact are also analyzed in the other resource sections of this Draft EIR/EIS.

The following subsections list the significance thresholds for roadways, freeways, and intersections (vehicle circulation); parking; transit; nonmotorized transportation; and freight and passenger rail service.

Roadways, Freeways, and Intersections (Vehicle Circulation)

Under State 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 would result in a net increase in statewide VMT over baseline conditions, or otherwise conflict with State CEQA Guidelines Section 15064.3, Subdivision (b).

Parking

Parking conditions evolve over time as people alter their modes and patterns of travel in response to changing land uses and transportation options. Pursuant to Senate Bill 743, the adequacy of parking for a project shall not support a finding of significance. However, parking losses caused by a project or parking demand generated by a project in excess of the parking supply provided by the project could result in a significant indirect (secondary) impact on the environment if the insufficiency of parking results in secondary impacts such as on VMT, air quality, noise, safety, or land use. The criteria for the evaluation of these potential secondary impacts are the same as those used for direct (primary) impacts. The VMT criterion is the same as that described for vehicle circulation. For other relevant criteria, refer to Section 3.3, Section 3.4, Section 3.11, and Section 3.13.

Transit

The project would have a significant impact if it would conflict with a program, plan, ordinance, or policy regarding public transit, or otherwise materially decrease the performance of such facilities.

Nonmotorized Transportation

The project would have a significant impact if it would conflict with a program, plan, ordinance, or policy regarding bicycle or pedestrian facilities, or otherwise materially decrease the performance of such facilities.

Freight and Passenger Rail Service

The project would have a significant impact if it would substantially disrupt or interfere with freight operations or require greater temporal separation that would change freight rail service such that resultant diversions to truck or other freight modes would result in significant secondary impacts related to air quality, noise, GHG emissions, or traffic operations (as defined by the other applicable significance criteria in this Draft EIR/EIS).

The project would have a significant impact if temporary closures of track or passenger rail stations would substantially disrupt or interfere with passenger rail operations, such that service would need to be suspended during weekday operations.

3.2.5 Affected Environment

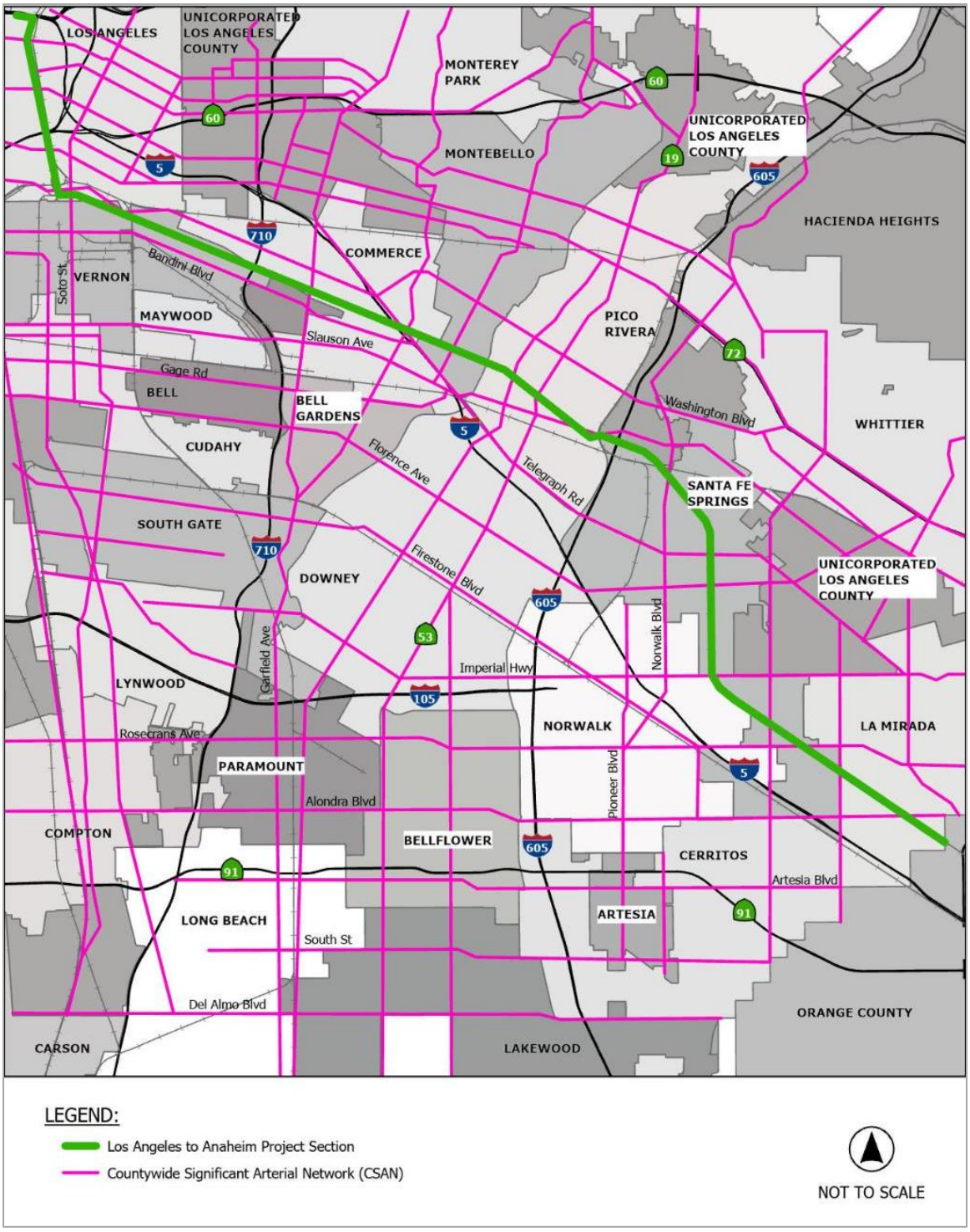
This section describes the affected environment for transportation within the RSA, including existing major roadways, traffic LOS, transit services and facilities, aviation services and facilities,

pedestrian and bicycle access, emergency access, and property access. This information provides the context for the environmental analysis and evaluation of impacts.

A summary of issues and concerns from public outreach efforts can be found in Chapter 9, Public and Agency Involvement.

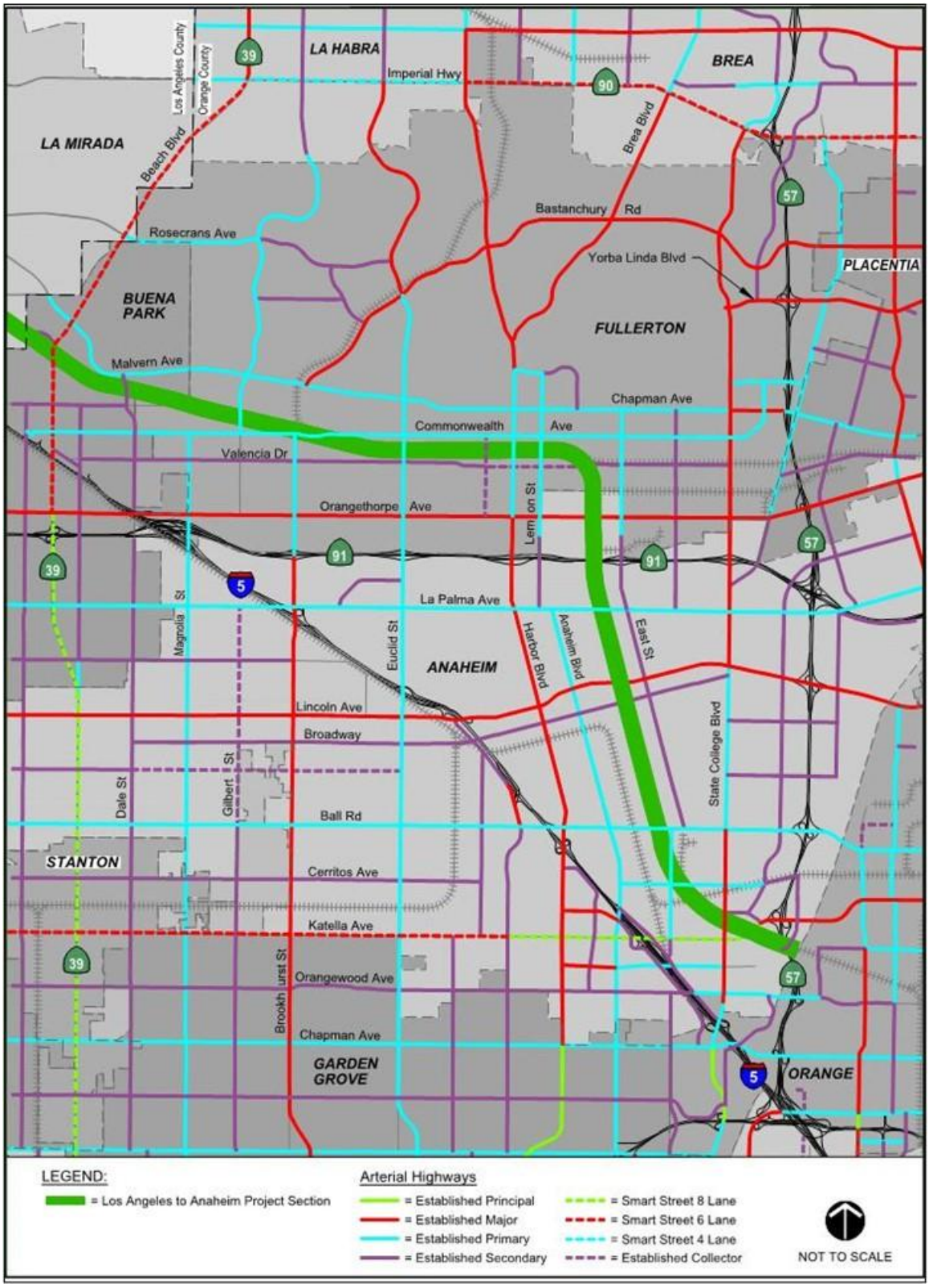
This section describes the affected transportation environment in the transportation RSA. Figure 3.2-2 illustrates regionally significant roadways within Los Angeles County as depicted on Metro's Countywide Significant Arterial Network map.

Regionally significant roadways within Orange County are established in OCTA's Master Plan of Arterial Highways, depicted on Figure 3.2-3. Smart Streets, which are identified on the figure, are arterials that have enhanced traffic-carrying capacity with the intent of minimizing cross-traffic conflict.



Source: Authority 2025

Figure 3.2-2 Los Angeles County: Countywide Significant Arterial Network



Source: Authority 2025

Figure 3.2-3 Orange County: Master Plan of Arterial Highways

3.2.5.1 Regional Truck Routes

The highway and the regionally significant roadways compose 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 use the most direct route to the particular delivery location, including local streets.

The federal Surface Transportation Assistance Act of 1982 defined a system to describe truck routes. The Surface Transportation Assistance Act truck routes within the RSA include national network and terminal access routes, including I-5, I-10, SR 60, and U.S. Highway 101.

National network truck routes are federal highways. Terminal access routes are portions of state routes or local roads that can accommodate trucks. The truck routes within the RSA include both national network and terminal access routes as follows:

- National Network Truck Routes (federal): U.S. Highway 101, I-5, I-105, I-605, I-710, SR 22, SR 57, and SR 91
- Terminal Access Truck Routes (state, local): SR 39 (concurrent with Beach Boulevard) and SR 90 (concurrent with Imperial Highway)

Truck volumes are expressed as average annual daily truck volume, which is total truck volume averaged over a 365-day year. The total truck volume includes the number of trucks with two or more axles. The total truck volumes expressed as a percentage of the total average annual daily traffic volumes are presented in Table 3.2-11.

Table 3.2-11 Average Daily Traffic Volume Along Regional Truck Routes

Truck Route	AADT (Year 2022)	Truck AADT (Year 2022)	Truck ADT %
I-605 at I-5 interchange	230,000	24,633	10.7%
I-105 at I-605 interchange	226,000	20,001	8.9%
SR 91 at Harbor Blvd	205,100	15,383	7.5%
SR 57 at SR 91 interchange	232,900	20,961	9.0%
I-5 at Katella Ave	176,500	14,120	8.0%

Source: Caltrans 2024
All data listed are currently limited to publicly available data sources.
AADT = annual average daily traffic; ADT = average daily traffic; I = Interstate; SR = State Route

3.2.5.2 Intersection and Roadway Segment Level of Service

Figure 3.2-1, sheets 1 through 8, depicts the transportation RSA. Refer to the *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025) for more information regarding the roadway's capacity, AM/PM peak LOS, and V/C ratio for each of the analyzed intersections and roadway segments in the RSA. A "G" number prefix indicates intersections/ segments outside of station areas, "N" number prefix indicates intersections/segments within the Norwalk/Santa Fe Springs HSR Station Option area, "F" number prefix indicates intersections/ segments within the Fullerton HSR Station Option area, and "A" number prefix indicates intersections/segments in the Anaheim Regional Transportation Intermodal Center (ARTIC) station area.

Of the 304 intersections analyzed in the RSA, 23 currently operate at LOS E or F in the AM peak hour and 25 are LOS E or F in the PM peak hour. The following intersections operate at LOS E or F in the AM peak hour or PM peak hour:

- G75, State College Boulevard and Vermont Avenue
- G87, I-5 southbound ramps and Washington Boulevard

- G95, Indiana Street and Bandini Boulevard
- G98, Atlantic Boulevard/I-710 northbound ramps and Bandini Boulevard
- G101, I-5 southbound ramps and Bandini Boulevard
- G113, Telegraph Road (Slauson Avenue) and I-5 northbound off-ramp
- G114, Gage Road and Telegraph Road
- G119, I-5 southbound ramps/Gage Avenue and Slauson Avenue
- G122, Rosemead Boulevard (SR 19) and Slauson Avenue
- G130, Pioneer Boulevard and I-605 northbound off-ramp
- G132, Pioneer Boulevard and Orr and Day Road
- G136, Santa Fe Springs Road and Sorensen Avenue
- G138, Valley View Avenue and Foster Road
- G162, Gilbert Street and Malvern Avenue
- G168, Garfield Avenue and E 26th Street
- G171, Pioneer Boulevard and Rivera Road
- G211, Telegraph Road and Maple Avenue
- N1, Firestone Boulevard and Imperial Highway
- N36, I-605 southbound ramps and Florence Avenue
- N49, Studebaker Road and Imperial Highway
- N51, Bloomfield Avenue and Firestone Boulevard (south)
- N52, Bloomfield Avenue and Rosecrans Avenue
- N56, Shoemaker Avenue and overcrossing (south)
- N70, Studebaker Road and Rosecrans Avenue
- N71, Pioneer Boulevard/San Antonio Drive and Rosecrans Avenue
- N73, Carmenita Road and Lakeland Road
- F9, Malden Avenue and Chapman Avenue
- F25, Lemon Street and Santa Fe Avenue
- F45, Lemon Street and Walnut Avenue
- F46, Lemon Street and Valencia Drive
- F58, Euclid Street and SR 91 westbound ramps
- A53, Lewis Street and Orangewood Avenue

Of the 253 roadway segments analyzed, 29 are LOS E or F in the AM peak hour and 37 are LOS E or F in the PM peak hour. The following roadway segments operate at LOS E or F in the AM peak hour or PM peak hour:

- G011, Lincoln Avenue, East Street to State College Boulevard
- G012, Soto Street, Washington Boulevard to E 26th Street
- G013, Downey Road, Washington Boulevard to Bandini Boulevard
- G014, E 26th Street, Downey Road to Bandini Boulevard
- G018, Garfield Avenue, Washington Boulevard to Telegraph Road
- G020, Paramount Boulevard, Slauson Avenue to Washington Boulevard
- G021, Rosemead Boulevard, Slauson Avenue to Washington Boulevard
- G026, Passons Boulevard, Slauson Avenue to Washington Boulevard
- G027, Slauson Avenue, Passons Boulevard to I-605 southbound on-ramp
- G035, Los Nietos Road, Norwalk Boulevard to Santa Fe Springs Road
- G047, Beach Boulevard, Franklin Street to Stage Road
- G069, Anaheim Boulevard, Vermont Street to Ball Road
- G071, Beach Boulevard, Malvern Avenue Stage Road
- G091, Bandini Boulevard, Atlantic Boulevard, Eastern Avenue
- G092, Soto Street, E 26th Street, Bandini Boulevard
- G093, E 26th Street, Sierra Pine Avenue, Downey Road
- N028, Carmenita Road, Imperial Highway to Orden Drive
- N034, Florence Avenue, Orr and Day Road to Pioneer Boulevard
- N062, Carmenita Road, Orden Drive to Rosecrans Avenue

- N072, Rosecrans Avenue, Studebaker Road to Pioneer Boulevard
- F001, Euclid Street, Bastanchury Road to Malvern Avenue
- F002, Euclid Street, Malvern Avenue to Commonwealth Avenue
- F003, Euclid Street, Commonwealth Avenue to Orangethorpe Avenue
- F010, Harbor Boulevard, SR 90 (Imperial Highway) to Bastanchury Road
- F015, Harbor Boulevard, Commonwealth Avenue to Orangethorpe Avenue
- F019, Lemon Street, Commonwealth Avenue to Orangethorpe Avenue
- F020, Lemon Street, south of Orangethorpe Avenue
- F035, Malvern/Chapman Avenue, Raymond Avenue to Acacia Avenue
- F036, Malvern/Chapman Avenue, Acacia Avenue to State College Boulevard
- F037, Malvern/Chapman Avenue, State College Boulevard to Commonwealth Avenue
- F059, Chapman Avenue, Commonwealth Avenue to SR 57
- F064, Brea Boulevard, Rolling Hills Drive to Bastanchury Road
- F065, Bastanchury Road, Euclid Street to Harbor Boulevard
- F066, Bastanchury Road, Harbor Boulevard to Brea Boulevard
- F069, Euclid Street, Orangethorpe Avenue to SR 91
- A022, Ball Road, State College Boulevard to Sunkist Street
- A024, Ball Road, SR 57 to Main Street
- A038, Orangewood Avenue, State College Boulevard to Rampart Street
- A052, Lewis Street, Orangewood Avenue to Chapman Avenue

3.2.5.3 Freeway Conditions

Of the three freeway mainline segments in this area that met the screening criteria discussed in Section 3.2.4, Methods for Evaluating Impacts, none operated at LOS E or F in the AM peak hour or PM peak hour.

Of the four freeway ramps in the project section that met the screening criteria discussed in Section 3.2.4, one revealed calculated queue lengths in excess of capacity:

- SR 91 eastbound Lemon Street on-ramp

3.2.5.4 Transit Conditions

Regional bus services are provided by a number of transit operators including Antelope Valley Transportation Authority, Big Blue Bus Rapid, CA Shuttle, City of Commerce Transit, FlyAway, Foothill Transit, City of Los Angeles Department of Transportation, Santa Clarita Transit, Torrance Transit, University of Southern California, Megabus, Burbank Bus, Metro Bus, Long Beach Transit, Norwalk Transit, OCTA, Sunshine Shuttle Bus, Anaheim Regional Transportation, Greyhound, and OC Bus. Local transit is discussed in each respective station area.

Bus services primarily serve Los Angeles Union Station (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 U.S. Highway 101, as presented in Table 3.2-12.

Table 3.2-12 Existing Transit: LAUS

Operator	Route	Weekday Peak Frequency (min)	Weekday Ridership (person)
Rail Lines On Site			
Metrolink	Antelope Valley Line	60	4,125
	Ventura County Line	45–60	1,990
	San Bernardino Line	25–40	6,162
	Riverside Line	45–60	1,201
	91 Line	30	1,865
	Orange County Line	45–60	4,175
Amtrak	Coast Starlight	Daily[1]	N/A
	Southwest Chief	Daily[1]	223,654/year
	Pacific Surfliner	60	1,517,425/year
	Sunset Limited	Daily[1]	77,288/year
Metro Rail	B Line	12	59,202
	D Line	12	
	A Line	8	57,660
	E Line	8	36,446
Bus Service Off Site			
Antelope Valley Transportation Authority	785	30	N/A
Big Blue Bus Rapid	Freeway Express 10	15–30	N/A
CA Shuttle	California Shuttle Bus	N/A	N/A
City of Commerce Transit	Transit Citadel Express	45	N/A
FlyAway	Union Station	30	N/A
Foothill Transit	699	7–15	358
City of Los Angeles Department of Transportation	DASH Downtown B	8	N/A
	DASH Downtown D	5–15	N/A
	DASH Lincoln Heights/Chinatown	30	N/A
	Commuter Express Union Station/ Bunker Hill Shuttle	Buses wait for each Metrolink train	N/A
	Commuter Express 431	25	N/A
	Commuter Express 534	25–30	N/A
OCTA	701	20–30	N/A
Santa Clarita Transit	794	25–60	N/A
Torrance Transit	4X	30–35	N/A

Operator	Route	Weekday Peak Frequency (min)	Weekday Ridership (person)
University of Southern California	Intercampus Route	N/A	N/A
Megabus	Bay	N/A	N/A
	Los Angeles	N/A	N/A
Metro	Dodger Stadium Express	10	N/A
	33 Overnight	10–20	14,972
	40	15–20	13,292
	70	11–15	14,327
	76	14–27	8,762
	78/378	10–15	6,416
Bus Service On Site			
Burbank Bus	Empire/Downtown	18	N/A
	NoHo/Airport	15–20	N/A
Foothill Transit	Silver Streak	8–60	4,785
	493	10–15	714
	498	10–20	581
	499	10–15	4,785
Metro	94	15–20	6,724
	169	60	1,689
	222	26–45	988
	Express 487	20–30	1,168
	Silver Line 910/950	5–11	14,030

Sources: Amtrak 2022; Antelope Valley Transit Authority 2024; Big Blue Bus 2024; Burbankbus.org 2024; City of Commerce 2024; Foothill Transit 2024; GotoBus.com 2024; LADOT 2024a, 2024b; Metro 2024; National Association of Railroad Passengers 2024; OCTA 2024b; Santa Clarita Transit 2024; Southern California Regional Rail Authority 2024; Stagecoach Group PLC 2024; Torrance Transit 2024; USC Transportation 2011
[1] The departures vary by day of week.
Amtrak = National Railroad Passenger Corporation; CA = California; LAUS = Los Angeles Union Station; Metro = Los Angeles County Metropolitan Transportation Authority; min = minutes; N/A = ridership information not available; NoHo = North Hollywood; OCTA = Orange County Transportation Authority

The ARTIC station area is served by National Railroad Passenger Corporation (Amtrak), Metrolink, OCTA, Anaheim Regional Transportation, Megabus, Greyhound, and ACCESS (OCTA's shared-ride service for people who are unable to use regular, fixed-route bus service because of a disability), as presented in Table 3.2-13.

Table 3.2-13 Existing Transit: ARTIC

Operator	Route	Description	Weekday Peak Frequency (min)	Weekday Ridership (person)
Amtrak	Pacific Surfliner	San Luis Obispo–Los Angeles–San Diego	60	1,517,425/year

Operator	Route	Description	Weekday Peak Frequency (min)	Weekday Ridership (person)
Metrolink	Orange County Line	Los Angeles Union Station–Oceanside	45-60	4,175
OCTA	43	Fullerton–Costa Mesa	17–30	6,305
	46	Los Alamitos–Orange	30	1,897
	47	Fullerton–Newport Beach	12–20	6,382
	50	Long Beach–Orange	24–40	3,396
	53	Anaheim–Irvine	11–13	5,986
	54	Garden Grove–Orange	15	3,304
	56	Garden Grove–Orange	40	1,173
	57	Brea–Newport Beach	20	9,323
	83	Anaheim–Laguna Hills	20	1,931
	430	ARTIC–Anaheim Resort area	30	18
	453	Orange Transportation Center–St. Joseph's Hospital	20–30	101
	543	Fullerton Transportation Center–Santa Ana	12	3,234
Anaheim Regional Transportation	3	Grove Line	20	N/A
	4	Harbor Boulevard Line	20	N/A
	5	Grand Plaza Line	20	N/A
	6	Disney Way Line	20	N/A
	7	Clementine Street Line	20	N/A
	8	Hotel Circle Line	20	N/A
	9	Katella Line	20	N/A
	10	Center City Line	30	N/A
	11	Ball Road Line	20	N/A
	12	Manchester Line	20	N/A
	14	Orange Line	20	N/A
	15	ARTIC Sports Complex Line	60	N/A
	17	Canyon Metrolink Line	Various	N/A
	18	Buena Park Line	On-Demand	N/A
Megabus	---	Los Angeles, Las Vegas, Oakland, San Francisco, San Jose	Various	N/A
Greyhound	---	Various	Various	N/A

Sources: Anaheim Transportation Network 2024; Greyhound 2024; Metro 2024; National Association of Railroad Passengers 2024; OCTA 2024c; Southern California Regional Rail Authority 2024; Stagecoach Group PLC 2024
Amtrak = National Railroad Passenger Corporation; ARTIC = Anaheim Regional Transportation Intermodal Center; min = minutes; N/A = ridership information not available; OCTA = Orange County Transportation Authority

The Norwalk/Santa Fe Springs Metrolink Station area is served by Metrolink, Metro, Norwalk Transit, Long Beach Transit, and the Los Angeles County Department of Public Works Sunshine Shuttle. Access Services Incorporated is the federally required Americans with Disabilities Act paratransit service provider for Los Angeles County.

The Fullerton Metrolink/Amtrak Station area is served by Amtrak, Metrolink, and OCTA.

Table 3.2-14 presents the current transit services provided along or in the vicinity of the project section alignment.

Table 3.2-14 Existing Transit Service Along the Los Angeles to Anaheim Project Section Alignment

Operator	Route	Description	Weekday Peak Frequency (min)	Weekday Ridership (person)
Long Beach Transit	172	PCH–Palo Verde	30	N/A
	173	PCH–Studebaker	30	N/A
Metro Rail	C Line	Redondo Beach–Norwalk	7–8	18,372
Metro Bus	62	Los Angeles Downtown–Hawaiian Gardens	20–30	3,204
	111	LAX–Norwalk	15–20	13,523
	115	Playa Del Rey–Norwalk	10–20	10,770
	120	El Segundo–Whittier	30	2,864
	128	Martin Luther King, Jr. Transit Center/Compton Station–Cerritos Towne Center	50	951
	460	Disneyland–6th and Los Angeles	20	3,753
	577	V.A. Medical Center–El Monte Station	Varies	862
Norwalk Transit	1	Flower and Bellflower–Rio Hondo College	30	N/A
	2	Norwalk Square–Norwalk and Imperial	40	N/A
	3	Whittier Depot–Norwalk and 166th	60	N/A
	4	Imperial and Idaho–Metro Green Line Station	20	N/A
	5	Rosecrans Ave–Green Line Station	45	N/A
	7	Green Line Station–El Monte Station	60	N/A

Operator	Route	Description	Weekday Peak Frequency (min)	Weekday Ridership (person)
OCTA	26	Fullerton–Placentia	20–30	1,116
	30	Cerritos–Anaheim	25–30	1,691
	37	La Habra–Fountain Valley	30	2,474
	38	Lakewood–Anaheim Hills	20	3,498
	43	Fullerton–Costa Mesa	17–30	6,305
	47	Fullerton–Balboa	12–20	6,382
	57	Brea–Newport Beach	20	9,323
	129	La Habra–Anaheim	60	663
	143	La Habra–Brea	60	550
	150/A	Santa Ana–Costa Mesa	40	424
	543	Fullerton Transportation Center–Santa Ana	12	3,234
Sunshine Shuttle Bus	A	Sorensen Park–Whittwood Town Center	50–55	N/A
	B	Various	45	N/A

Sources: City of Norwalk 2024; Long Beach Transit 2024; Los Angeles County Department of Public Works 2024; Metro 2024; OCTA 2024c
[1] The departures vary by day of week.
LAX = Los Angeles International Airport; Metro = Los Angeles County Metropolitan Transportation Authority; min = minutes; N/A = ridership information not available; OCTA = Orange County Transportation Authority; PCH = Pacific Coast Highway; V.A. = Veterans' Administration

3.2.5.5 Aviation

There are four airports serving the RSA: LAX, Long Beach Airport, Fullerton Municipal Airport, and John Wayne Airport. These airports, with the exception of Fullerton Municipal Airport, serve commercial flights.

Los Angeles International Airport

LAX is owned and operated by Los Angeles World Airports (Los Angeles World Airports 2016). It is the primary airport serving the Los Angeles area. LAX is west of I-405 (San Diego Freeway), approximately 20 driving miles from LAUS, and it can be directly accessed via Century Boulevard. According to the *Los Angeles World Airport 2023 Annual Comprehensive Financial Report* (Los Angeles World Airports 2023), 71 million passengers moved in and out of the airport on 243,000 flights and more than 2.5 million tons of air freight and mail were carried.

Long Beach Airport

Long Beach Airport is owned and operated by the City of Long Beach (Long Beach Airport 2016). It is north of I-405 and west of Lakewood Boulevard, approximately 25 driving miles from LAUS. The airport served around 1 million passengers and 15,700 tons of cargo in 2020 (Long Beach Airport 2020).

Fullerton Municipal Airport

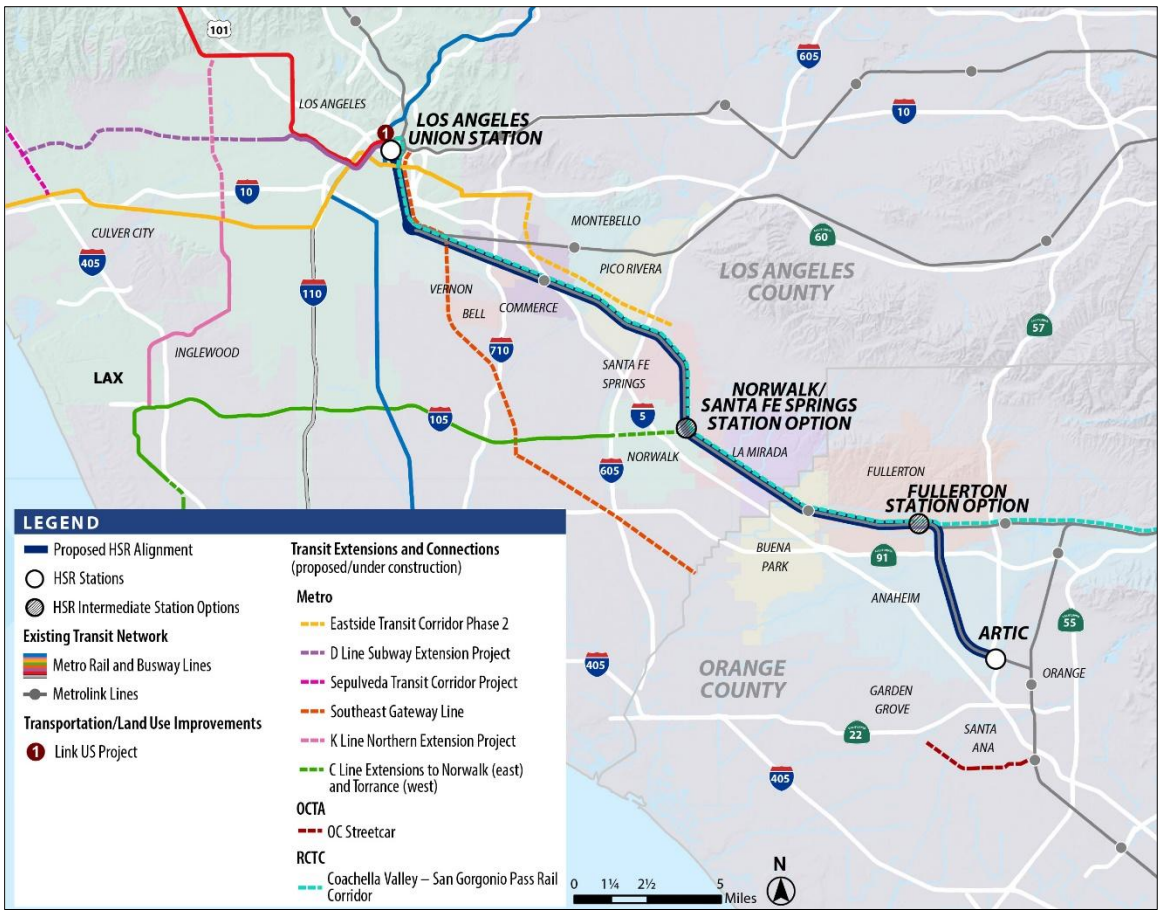
Fullerton Municipal Airport is a small general aviation airport owned and operated by the City of Fullerton. It is approximately 4 miles from the Fullerton Transportation Center (Fullerton Metrolink/ Amtrak Station), with access via Artesia Avenue from the north and Commonwealth Avenue from the south.

John Wayne Airport

John Wayne Airport is owned and operated by the County of Orange and is the only commercial airport in the county (John Wayne Airport 2013). It is in an unincorporated area of Orange County along MacArthur Boulevard, south of I-405, east of SR 55, and approximately 11 driving miles from ARTIC. John Wayne Airport served 11.3 million passengers, 304,00 aircraft operations, and 17,300 tons of air cargo in 2022 (Campbell-Hill Aviation Group, LLC 2023).

3.2.5.6 Passenger Rail Service

Conventional passenger rail service in the Metro right-of-way is provided by Amtrak intercity rail and Metrolink commuter rail, and it is operated pursuant to a series of owned track and use agreements with BNSF. Amtrak provides daily service from San Diego to LAUS and beyond to San Luis Obispo within the Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor). Approximately 1.5 million passengers used Amtrak along this corridor in 2023. Approximately 5.3 million passengers used Metrolink trains along this corridor, and 137 commuter trains and 26 Amtrak trains were projected to use the corridor in 2018 (LOSSAN Corridor Agency 2012). Figure 3.2-4 depicts existing and planned passenger rail service lines.



Sources: Caltrans 2023; Metro n.d.; U.S. DOT 2022

Figure 3.2-4 Existing and Planned Passenger Rail Service in the Los Angeles to Anaheim Project Section

Table 3.2-15 presents the current passenger rail service operating within the LOSSAN Corridor.

Table 3.2-15 Existing Passenger Rail Service

Operator	Route	Description	Weekday Peak Frequency (min)	Weekday Ridership (person)
Amtrak	Southwest Chief	Chicago–Los Angeles	Daily[1]	253,838/year
	Pacific Surfliner	San Luis Obispo–Los Angeles–San Diego	60	1,517,425/year
Metrolink	Orange County Line	Los Angeles Union Station–Oceanside	30	4,175
	91 Line	Los Angeles Union Station–Riverside Downtown	40	1,865

Sources: National Association of Railroad Passengers 2024; Southern California Regional Rail Authority 2023
[1] The departures vary by day of week.
Amtrak = National Railroad Passenger Corporation; min = minutes

3.2.5.7 Freight Rail Service

The RSA includes part of the Metro-owned West Bank between LAUS and Redondo Junction, the BNSF San Bernardino Subdivision between Redondo Junction and Fullerton Junction, as well as the commuter rail corridor owned by OCTA south of Fullerton Junction to ARTIC. BNSF has track usage rights along the OCTA commuter rail corridor. The BNSF San Bernardino Subdivision is used to connect freight rail with the regional and national freight rail network. BNSF also operates an intermodal terminal for containers and trailers at Hobart Yard (Los Angeles Intermodal Facility) and a smaller intermodal facility (Commerce Intermodal Facility); both facilities are in Commerce.

According to the 2018 *California State Rail Plan*, the average daily freight train volume within the LOSSAN Corridor from Los Angeles to Anaheim in 2013 was 32 freight trains (Caltrans 2018). In 2013, 62.1 million and 98.6 million tons of goods were moved in carload and intermodal services, respectively, per the 2018 *California State Rail Plan*.

3.2.5.8 Pedestrian Facilities

The pedestrian facilities around the existing Norwalk/Santa Fe Springs Metrolink Station include the sidewalk system on the nearby streets. There are no separate pedestrian paths or trails from the nearby neighborhoods. The station area is generally well connected with the sidewalk system. Sidewalks are available on both sides along the streets in the station vicinity, and crosswalks are provided for pedestrian movements at most of the intersections. A pedestrian walkway is provided across the corridor railroad tracks at the station site for access to the far side of the station.

The pedestrian facilities around the existing Fullerton Metrolink/Amtrak Station include the sidewalk system on the nearby streets. There are no separate pedestrian paths or trails from nearby neighborhoods. Sidewalks are available on both sides along the streets in the station vicinity, and crosswalks are provided for pedestrian movements at most intersections.

The pedestrian facilities around the existing ARTIC station include the sidewalk system on the nearby streets. There are no separate pedestrian paths or trails from nearby neighborhoods. Sidewalks are available on both sides along the streets in the station vicinity, and crosswalks are provided for pedestrian movements at most of the intersections.

3.2.5.9 Bicycle Facilities

There is a comprehensive bikeway system consisting of Class I, Class II, and Class III bicycle facilities, as defined in Table 3.2-1. Existing Class II bikeways provide direct access to and egress from Norwalk/Santa Fe Springs Metrolink Station via Bloomfield Avenue from the north and Imperial Highway, Orden Drive, and Foster Road from the southeast within the RSA.

Currently, few existing bikeway facilities provide access to the Fullerton Metrolink/Amtrak Station area (Class II via Valencia Drive from the west, Highland Avenue from the south, and Orangethorpe Avenue from the west; Class III via Richmond Avenue north of SR 91). Bicycle lockers at the existing Fullerton Metrolink/Amtrak Station are available for reservation or at a first-come-first-serve basis.

ARTIC has limited connections to the surrounding area by way of bikeway facilities, aside from a Class I bikeway along the Santa Ana River Trail/OC Loop. Bicycle lockers at the existing ARTIC are available for reservation or on a first-come-first-serve basis.

3.2.5.10 Parking Facilities

The existing parking lots at Norwalk/Santa Fe Springs Metrolink Station contain 630 spaces. A pick-up and drop-off facility is available in front of the station. Taxi and rideshare services are available at the same location.

The existing parking lots at Fullerton Metrolink/Amtrak Station contain 1,321 spaces. A pick-up and drop-off facility is available in front of the station. Taxi and rideshare services are available at the same location.

The ARTIC facility has 195 parking spaces, and there are 375 parking spaces at the former Anaheim Metrolink station stop within the Angel Stadium parking area. A pick-up and drop-off facility is available in front of the station. Taxi and rideshare services are available at the same location. Refer to the *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025) for more information.

3.2.6 Environmental Consequences

3.2.6.1 Overview

This section discusses the potential impacts related to transportation from construction and operation of the project alternatives and station options. Each resource category addresses potential impacts from the No Project Alternative and the Shared Passenger Track Alternatives. For this resource topic, any differences in the impacts for the alternatives and station options are described in the analysis. 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 project includes project features (IAMFs) that will minimize impacts on transportation during construction by requiring the contractor to develop and implement plans and actions to minimize or avoid potential construction impacts (Volume 2, Appendix 2-A). These IAMFs include implementing construction hours and parking for construction vehicles, maintaining truck routes, ensuring roadways are not affected during special events during project construction, maintaining bicycle and pedestrian access, protecting freight and passenger rail services, maintaining transit access, and meeting design standards and guidance for transportation facilities. However, temporary road closures and construction traffic, including traffic from truck deliveries and construction employee trips, would result in localized temporary impacts in a number of areas in the RSA. Permanent transportation consequences would result from the long-term presence of HSR track and systems. There would be an increase in localized trips near the stations, as well as localized consequences for intersection and freeway operations, transit service, and bicycle and pedestrian facilities.

The IAMFs differ from mitigation measures in that they are part of the project. Mitigation measures may be available to further reduce, compensate for, or offset project impacts that the analysis identifies as adverse under NEPA or concludes are significant under CEQA.

The impacts of the Shared Passenger Track Alternatives are described and organized as follows.

Construction Impacts

- Impact TR-1: Temporary Impacts on Intersections, Roadways, and Freeways from Temporary Road Closures, Relocations, and Modifications During Construction
- Impact TR-2: Permanent Impacts on Signalized Intersections from Construction of Permanent Roadway Modifications
- Impact TR-3: Permanent Impacts on Unsignalized Intersections from Construction of Permanent Roadway Modifications
- Impact TR-4: Permanent Impacts on Roadway Segments from Construction of Permanent Roadway Modifications
- Impact TR-5: Temporary Impacts on Pedestrian, Bicycle, and Transit Facilities During Construction
- Impact TR-6: Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities from Construction of Permanent Roadway Modifications
- Impact TR-7: Permanent Impacts on Freeway Mainline Segments and Ramps During Construction
- Impact TR-8: Temporary Impacts on Freight and Passenger Rail Operations During Construction

Operational Impacts

- Impact TR-9: Continuous Permanent Impacts on Vehicle Miles Traveled
- Impact TR-10: Continuous Permanent Impacts on Signalized Intersections During Operations
- Impact TR-11: Continuous Permanent Impacts on Unsignalized Intersections During Operations
- Impact TR-12: Continuous Permanent Impacts on Roadway Segments During Operations
- Impact TR-13: Continuous Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities During Operations
- Impact TR-14: Continuous Permanent Impacts on Freeway Mainline Segments and Ramps During Operations
- Impact TR-15: Continuous Permanent Impacts on Freight and Passenger Rail During Operations

3.2.6.2 No Project Alternative

The No Project Alternative is the circumstance under which the project section does not proceed. Evaluation of the No Project Alternative compares the condition of the project corridor as it currently exists with what would exist at the planning Horizon Year of 2040 without implementation of the project section.

Under the No Project Alternative, recent development trends are anticipated to continue, leading to increased congestion on regional roadways, despite planned improvements, because anticipated growth would outpace roadway expansion.

In assessing future conditions, it was assumed that currently known, programmed, and funded improvements to the statewide transportation system (highway, rail, and transit) and reasonably foreseeable local land development projects would be implemented by the year 2040. The No Project Alternative is based on a review of and consultation with the following: transportation plans such as SCAG's RTP, the State of California Office of Planning and Research, CEQAnet Database, the Federal Aviation Administration Air Carrier Activity Information System and Airport Improvement Plan grant data, the California State Transportation Commission's STIP, airport

master plans and interviews with airport officials, intercity passenger rail plans, and city and county general plans and planning officials.

Intersection and Roadway Levels of Service

Intersection and roadway segment base analyses were performed along the corridor alignment for the Horizon Year 2040 condition.

Volume-to-Capacity (V/C) Ratio

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

LOS and V/C ratios would continue to deteriorate throughout the project section. Table 3.2-16 and Table 3.2-17 summarize the intersections and roadway segments, respectively, that would exceed LOS thresholds in 2040. In 2040, in the AM peak hour, 47 intersections and 34 roadway segments are expected to operate at LOS E or F, compared to 21 intersections and 26 roadway segments in the existing conditions. In 2040 in the PM peak hour, 49 intersections and 48 roadway segments are expected to operate at LOS E or F, compared to 23 intersections and 23 roadway segments in the existing conditions. The *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025) includes the full lists of intersections in Tables 6-3, 6-11, 6-13, and 6-15, and roadway segments in Tables 6-2, 6-10, 6-12, and 6-14.

Table 3.2-16 Intersection Level of Service, Horizon Year 2040 No Project

No.	Intersection	Exceeds LOS Threshold?	
		AM Peak	PM Peak
G42	East St and La Palma Ave	No	Yes, LOS E
G44	East St and Lincoln Ave	No	Yes, LOS E
G46	East St and South St	No	Yes, LOS F
G67	Harbor Blvd and La Palma Ave	No	Yes, LOS F
G68	Harbor Blvd and Lincoln Ave	Yes, LOS E	Yes, LOS E
G73	State College Blvd and La Palma Ave	No	Yes, LOS E
G75	State College Blvd and Vermont Ave	Yes, LOS F	Yes, LOS F
G84	Downey Rd and Washington Blvd	No	Yes, LOS E
G89	Garfield Ave and Washington Blvd	Yes, LOS E	No
G92	Pioneer Blvd and Washington Blvd	Yes, LOS F	Yes, LOS E
G93	Sierra Pine Ave and Bandini Blvd	No	No
G95	Indiana St and Bandini Blvd[2]	Yes, LOS E	No
G98	Atlantic Blvd/I-710 NB ramps and Bandini Blvd[1]	Yes, LOS F	Yes, LOS F
G101	I-5 SB ramps and Bandini Blvd[2]	Yes, LOS F	Yes, LOS F
G106	Ayers Ave and E 26th St[2]	No	Yes, LOS F
G113	Telegraph Rd (Slauson Ave) and I-5 NB off-ramp[2]	Yes, LOS F	Yes, LOS F
G114	Gage Rd and Telegraph Rd[2]	Yes, LOS F	Yes, LOS F
G119	I-5 SB ramps/Gage Ave and Slauson Ave[1]	No	Yes, LOS F
G122	Rosemead Blvd (SR 19) and Slauson Ave	Yes, LOS E	Yes, LOS E
G123	Passons Blvd and Slauson Ave	Yes, LOS E	Yes, LOS F

No.	Intersection	Exceeds LOS Threshold?	
		AM Peak	PM Peak
G125	Pioneer Blvd and Slauson Ave	Yes, LOS E	Yes, LOS E
G130	Pioneer Blvd and I-605 NB off-ramp[2]	Yes, LOS F	Yes, LOS F
G132	Pioneer Blvd and Orr and Day Rd[2]	Yes, LOS F	Yes, LOS F
G136	Santa Fe Springs Rd and Sorensen Ave[2]	No	Yes, LOS F
G138	Valley View Ave and Foster Rd	Yes, LOS F	Yes, LOS F
G139	Valley View Ave and Rosecrans Ave	Yes, LOS E	No
G160	Brookhurst Rd and Valencia Dr	Yes, LOS E	No
G162	Gilbert St and Malvern Ave	Yes, LOS F	No
G165	Paramount Blvd and Washington Blvd	Yes, LOS E	No
G168	Garfield Ave and E 26th St[2]	Yes, LOS F	Yes, LOS F
G171	Pioneer Blvd and Rivera Rd[2]	Yes, LOS F	Yes, LOS F
G203	Atlantic Blvd and Sheila St	Yes, LOS F	Yes, LOS F
G208	Downey Rd and E 26th St[2]	Yes, LOS F	Yes, LOS F
G210	Eastern Ave and driveway[2]	Yes, LOS F	Yes, LOS F
G211	Telegraph Rd and Maple Ave[2]	Yes, LOS F	Yes, LOS F
N1	Firestone Blvd and Imperial Hwy [1]	Yes, LOS E	Yes, LOS E
N7	Norwalk Blvd and Imperial Hwy	Yes, LOS E	Yes, LOS F
N33	Shoemaker Ave and Telegraph Rd	Yes, LOS E	No
N36	I-605 SB ramps and Florence Ave	Yes, LOS E	No
N46	Hoxie Ave and Imperial Hwy[1]	No	Yes, LOS E
N49	Studebaker Rd and Imperial Hwy	Yes, LOS E	Yes, LOS E
N51	Bloomfield Ave and Firestone Blvd (south)	Yes, LOS E	Yes, LOS F
N56	Shoemaker Ave and overcrossing (south)[2]	No	Yes, LOS F
N70	Studebaker Rd and Rosecrans Ave	Yes, LOS E	Yes, LOS E
N71	Pioneer Blvd/San Antonio Dr and Rosecrans Ave[1]	Yes, LOS F	Yes, LOS F
N73	Carmenita Rd and Lakeland Rd	Yes, LOS E	Yes, LOS F
F9	Malden Ave and Chapman Ave[2]	Yes, LOS F	Yes, LOS F
F11	Harbor Blvd and Imperial Hwy (SR 90)	Yes, LOS F	Yes, LOS F
F12	Harbor Blvd and Bastanchury Rd	Yes, LOS F	Yes, LOS F
F15	Harbor Blvd and Chapman Ave	Yes, LOS E	Yes, LOS E
F16	Harbor Blvd and Commonwealth Ave	Yes, LOS E	No
F22	Brea Blvd and Bastanchury Rd	Yes, LOS F	No
F24	Lemon St and Commonwealth Ave	Yes, LOS E	Yes, LOS E

No.	Intersection	Exceeds LOS Threshold?	
		AM Peak	PM Peak
F25	Lemon St and Santa Fe Ave[2]	Yes, LOS F	Yes, LOS F
F26	Lemon St and Orangethorpe Ave	No	Yes, LOS E
F32	State College Blvd and Chapman Ave	No	Yes, LOS E
F33	State College Blvd and Commonwealth Ave	Yes, LOS F	Yes, LOS E
F38	Placentia Ave and Chapman Ave	No	Yes, LOS E
F39	Euclid St and Valencia Dr	Yes, LOS F	No
F45	Lemon St and Walnut Ave[2]	Yes, LOS F	Yes, LOS F
F46	Lemon St and Valencia Dr	Yes, LOS F	Yes, LOS F
F52	Brea Blvd and Imperial Hwy (SR 90)	Yes, LOS E	No
A6	State College Blvd and Ball Rd	Yes, LOS E	No
A8	State College Blvd and Cerritos Ave	No	Yes, LOS F
A9	State College Blvd and Howell Ave	Yes, LOS E	Yes, LOS F
A12	State College Blvd and Gene Autry Way	No	Yes, LOS E
A14	State College Blvd and Orangewood Ave	Yes, LOS E	Yes, LOS E
A16	Sunkist St and Ball Rd	Yes, LOS F	Yes, LOS F
A17	Sunkist St and Cerritos Ave	No	Yes, LOS F
A18	Howell Ave and Katella Ave[1]	No	Yes, LOS F
A22	SR 57 SB ramps and Orangewood Ave[1]	Yes, LOS E	Yes, LOS F
A28	Douglass Rd and Katella Ave[1]	No	Yes, LOS F
A30	Main St and Ball Rd/Taft Ave[1]	Yes, LOS E	No
A34	Main St and Orangewood Ave/Walnut Ave	Yes, LOS F	Yes, LOS E
A41	Anaheim Blvd and Ball Rd	No	Yes, LOS E
A53	Lewis St and Orangewood Ave	Yes, LOS F	Yes, LOS F
A54	Lewis St and Chapman Ave	Yes, LOS E	Yes, LOS E
A58	Manchester Ave and Chapman Ave	Yes, LOS F	No
A69	Harbor Blvd and Ball Rd	No	Yes, LOS E
A71	Harbor Blvd and I-5 SB ramps	Yes, LOS E	No
A79	Anaheim Blvd and Cerritos Ave	No	Yes, LOS F
A82	Main St and Chapman Ave	No	Yes, LOS E

[1] Delay was based on HCM 2000 signalized intersection analysis because of HCM 2010 analysis limitations.
[2] Two-way unsignalized intersection; the delay indicated is for the worst minor approach delay.
"G" intersection number prefix indicates intersections along the alignment.
"N" intersection number prefix indicates intersections within the Norwalk/Santa Fe Springs HSR Station Option area.
"F" intersection number prefix indicates intersections within Fullerton HSR Station Option area.
"A" intersection number prefix indicates intersections within ARTIC station area.
ARTIC = Anaheim Regional Transportation Intermodal Center; HCM = Highway Capacity Manual; HSR = high-speed rail; I = Interstate; LOS = level of service; NB = northbound; SB = southbound; SR = State Route

Table 3.2-17 Roadway Segment Level of Service, Horizon Year 2040 No Project

Roadway	From	To	Exceeds LOS Threshold?	
			AM Peak	PM Peak
Harbor Blvd	La Palma Ave	Lincoln Ave	Yes, LOS E	Yes, LOS E
Harbor Blvd	Lincoln Ave	Ball Rd	Yes, LOS F	Yes, LOS F
La Palma Ave	East St	State College Blvd	No	Yes, LOS F
Lincoln Ave	East St	State College Blvd	Yes, LOS F	Yes, LOS F
Soto St	E 26th St	Washington Blvd	No	Yes, LOS E
Downey Rd	Bandini Blvd	Washington Blvd	No	Yes, LOS F
E 26th St	Downey Rd	Bandini Blvd	No	Yes, LOS F
Garfield Ave	Telegraph Rd	Washington Blvd	Yes, LOS F	Yes, LOS E
Paramount Blvd	Slauson Ave	Washington Blvd	No	Yes, LOS F
Rosemead Blvd (SR 19)	Slauson Ave	Washington Blvd	Yes, LOS E	Yes, LOS F
Passons Blvd	Slauson Ave	Washington Blvd	Yes, LOS F	Yes, LOS F
Slauson Ave	Passons Blvd	I-605 SB on-ramp	Yes, LOS E	Yes, LOS E
Los Nietos Rd	Norwalk Blvd	Santa Fe Springs Rd	Yes, LOS E	Yes, LOS F
Beach Blvd (SR 39)	Franklin St	Stage Rd	No	Yes, LOS E
Anaheim Blvd	Vermont St	Ball Rd	Yes, LOS E	Yes, LOS F
Beach Blvd (SR 39)	Malvern Ave	Stage Rd	Yes, LOS E	Yes, LOS F
Bandini Blvd	Atlantic Blvd	Eastern Ave	No	Yes, LOS F
Soto St	E 26th St	Bandini Blvd	Yes, LOS F	Yes, LOS F
E 26th St	Sierra Pine Ave	Downey Rd	Yes, LOS E	Yes, LOS F
Carmenita Rd[1]	Leffingwell Rd	Imperial Hwy	No	Yes, LOS E
Carmenita Rd[1]	Imperial Hwy	Orden Dr	No	Yes, LOS E
Florence Ave[1]	Orr and Day Rd	Pioneer Blvd	Yes, LOS F	Yes, LOS F
Florence Ave[1]	Pioneer Blvd	Norwalk Blvd	No	Yes, LOS E
Florence Ave[1]	Norwalk Blvd	Bloomfield Ave	No	Yes, LOS E
Florence Ave[1]	Carmenita Rd	Telegraph Rd	Yes, LOS E	Yes, LOS E
Studebaker Rd[1]	Imperial Hwy	I-105	Yes, LOS E	No
Carmenita Rd[1]	Orden Dr	Rosecrans Ave	Yes, LOS E	No
Rosecrans Ave[1]	Studebaker Rd	Pioneer Blvd	Yes, LOS E	Yes, LOS E
Euclid St[2]	Bastanchury Rd	Malvern Ave	Yes, LOS F	Yes, LOS F
Euclid St[2]	Malvern Ave	Commonwealth Ave	Yes, LOS E	Yes, LOS E
Euclid St[2]	Commonwealth Ave	Orangethorpe Ave	Yes, LOS E	Yes, LOS E
Highland Ave[2]	Malvern Ave	Chapman Ave	No	Yes, LOS E

Roadway	From	To	Exceeds LOS Threshold?	
			AM Peak	PM Peak
Highland Ave[2]	Commonwealth Ave	Valencia Dr	No	Yes, LOS F
Highland Ave[2]	Valencia Dr	Orangethorpe Ave	No	Yes, LOS E
Harbor Blvd[2]	Imperial Hwy (SR 90)	Bastanchury Rd	Yes, LOS F	Yes, LOS F
Harbor Blvd[2]	Commonwealth Ave	Orangethorpe Ave	Yes, LOS F	Yes, LOS F
Lemon St[2]	Commonwealth Ave	Orangethorpe Ave	Yes, LOS F	Yes, LOS F
Lemon St[2]	south of Orangethorpe Ave	---	Yes, LOS F	Yes, LOS F
State College Blvd[2]	south of Orangethorpe Ave	---	No	Yes, LOS E
Chapman Ave[2]	Harbor Blvd	Raymond Ave	No	Yes, LOS E
Chapman Ave[2]	Raymond Ave	Acacia Ave	Yes, LOS E	Yes, LOS F
Chapman Ave[2]	Acacia Ave	State College Blvd	Yes, LOS F	Yes, LOS F
Chapman Ave[2]	State College Blvd	Commonwealth Ave	Yes, LOS F	Yes, LOS F
Chapman Ave[2]	Commonwealth Ave	SR 57	Yes, LOS F	Yes, LOS F
Imperial Hwy (SR 90)[2]	Harbor Blvd	Puente St	Yes, LOS E	Yes, LOS E
Brea Blvd[2]	Rolling Hills Dr	Bastanchury Rd	Yes, LOS F	Yes, LOS F
Bastanchury Rd[2]	Euclid St	Harbor Blvd	Yes, LOS F	Yes, LOS F
Bastanchury Rd[2]	Harbor Blvd	Brea Blvd	Yes, LOS F	Yes, LOS F
Euclid St[2]	Orangethorpe Ave	SR 91	Yes, LOS F	Yes, LOS F
Brea Blvd[2]	Harbor Blvd	Bastanchury Rd	Yes, LOS E	Yes, LOS E
Ball Rd[3]	Harbor Blvd	Anaheim Blvd	No	Yes, LOS E
Ball Rd[3]	State College Blvd	Sunkist St	Yes, LOS F	Yes, LOS F
Ball Rd[3]	SR 57	Main St	Yes, LOS E	Yes, LOS F
Orangewood Ave[3]	State College Blvd	Rampart St	Yes, LOS F	Yes, LOS F
Orangewood Ave[3]	Rampart St	SR 57	Yes, LOS E	Yes, LOS F
Orangewood Ave[3]	SR 57	Eckhoff St	Yes, LOS E	Yes, LOS E
Chapman Ave[3]	The City Dr	I-5 SB on-ramp/NB off-ramp	No	Yes, LOS E
State College Blvd[3]	Manchester Ave	Chapman Ave	No	Yes, LOS E
Lewis St[3]	Orangewood Ave	Chapman Ave	Yes, LOS F	Yes, LOS F

[1] Roadway segments within the Norwalk/Santa Fe Springs HSR Station Option area.
[2] Roadway segments within the Fullerton HSR Station Option area.
[3] Roadway segment within the ARTIC station area.
ARTIC = Anaheim Regional Transportation Intermodal Center; HSR = high-speed rail; I = Interstate; LOS = level of service; NB = northbound; SB = southbound; SR = State Route

Highway Element with Future Conditions Projects

Table 3.2-18 depicts the future conditions projects within the project section, listed in the fiscally constrained SCAG 2020 RTP/SCS, including amendments related to the 2014 Federal Transportation Improvement Program and 2014 STIP.

Regional Bus Service and Local Fixed Guideways

The transit services described in Section 3.2.5.4, Transit Conditions, would continue to serve the existing station areas at ARTIC, Norwalk/Santa Fe Springs Metrolink Station, and Fullerton Amtrak/Metrolink Station. Beyond the existing bus network, several bus service projects are being studied or are in the process of design. None of these projects in this area are reflected in the SCAG 2020 RTP/SCS.

Several local fixed guideway projects included in the SCAG 2020 RTP/SCS could result in improvements to regional bus service. These include the Metro Southeast Gateway Line (formerly known as West Santa Ana Transit Corridor), Metro C Line extension, Metro D Line Extension, and OCTA Santa Ana-Garden Grove Fixed Guideway Project (formerly known as Orange County Streetcar). Amtrak, Metrolink, OCTA, Anaheim Regional Transportation, Megabus, and Greyhound would continue to serve the existing ARTIC area.

Table 3.2-18 Future Conditions Project List

Project #[3]	Project Type	Lead Agency	Cities	Location	Project Description	Estimated Completion Date
1NL04-LAF1535	Bicycle improvement	City	Los Angeles	Citywide	Bicycle wayfinding signage program. Wayfinding signs to direct bicyclists, and educate motorists, to the locations of dedicated bike paths, lanes and routes, destinations, and transit hubs throughout Los Angeles.	N/A[1]
LA9919160	Street improvement	City	Commerce	Slauson Avenue	Add dedicated right-turn lane; upgrade signal, traffic signs, lighting, pavement markings and striping	N/A[1]
LA0G807	Street improvement	City	Commerce	Garfield Ave: Telegraph Rd to Gage Ave	Pavement rehabilitation and ADA improvements	N/A[1]
LAF5108	Street improvement	City	Commerce	Garfield Ave/Washington Blvd multimodal intersection	Add dedicated turn lanes, sidewalks, crosswalks, curb ramps, and pedestrian traffic signals	N/A[1]
LA0G349	Street improvement	City	Commerce	Commerce Way: Eastern Ave to Washington Blvd	Raised median modifications, landscaping, irrigation	N/A[1]
LA9919091	Street improvement	City	Bell	Atlantic Ave and I-5	Curb/gutter improvements, directional signage, median upgrades, pedestrian facilities, landscaping, street lights	N/A[1]
LA9919223	Pedestrian improvement	City	Pico Rivera	Citywide	Updating signage along major corridors	N/A[1]
LA0G945	Pedestrian improvement	City	Pico Rivera	Rosemead Blvd at Beverly Blvd	New turn lanes; restricted parking	N/A[1]
LA0G1105	Bridge improvement	City	Pico Rivera	Telegraph Rd over San Gabriel Bridge	Demolish 4-lane existing bridge; build 3-lane bridge	N/A[1]
LA0G1106	Bridge improvement	City	Pico Rivera	Washington Blvd over Rio Hondo Bridge	Replacing existing 6-lane bridge with an 8-lane bridge increasing capacity	N/A[1]

Project #[3]	Project Type	Lead Agency	Cities	Location	Project Description	Estimated Completion Date
LAF7519	Pedestrian improvement	City	Whittier	UPRR Corridor: Mills Ave to Leffingwell Rd	Implement a 2-mile class I bike/ pedestrian path on a city-controlled easement along the UPRR corridor	N/A[1]
LA0G1688	Street improvement	City	Whittier	Whittier Blvd: La Curata St to Pacific Pl	Reconstruction of curb ramps, passageways, and sidewalks	N/A[1]
LAF7311	Traffic signal upgrade	City	Downey	Citywide	Synchronize traffic signals along existing transit routes. Install new fiber optic communication along 5.5 miles of arterial streets to connect signals to the central traffic management center. Install and integrate transit priority system with the traffic signal system.	N/A[1]
LA0G1518	Street improvements	City	Downey	Paramount Blvd at Imperial Hwy	Addition of turn lanes; widening of intersection; striping, signage, and pavement markings	N/A[1]
LA0G1517	Street improvements	City	Downey	Lakewood Blvd at Imperial Hwy	Addition of turn lanes, modification to traffic signals; striping and signage	N/A[1]
LA0G1516	Street improvements	City	Downey	Lakewood Blvd at Firestone Blvd	Addition of turn lanes, modification to traffic signals; striping and signage	N/A[1]
LA0G1515	Street improvements	City	Downey	Lakewood Blvd at Florence Ave	Addition of turn lanes; relocation of overhead utilities; striping, signage, and pavement	N/A[1]
LAF7118	Bridge improvements	City	Downey	Florence Ave Bridge over San Gabriel River	Rehabilitate existing bridge; improve approaches; new shoulder and landscaping	N/A[1]
LA0F063	Grade separation	Metro	Santa Fe Springs	Rosecrans Ave	---	2025
1HO707	Freeway improvement	Caltrans	La Mirada/Norwalk/ Santa Fe Springs	I-5 from SR 19 to I-710	I-5 high-occupancy vehicle lanes from SR 19 to I-710—one lane in each direction	N/A[1]
LAF1219	Bridge widening	City	Norwalk	Firestone Blvd at San Gabriel River	Widen existing bridge	N/A[1]

Project #[3]	Project Type	Lead Agency	Cities	Location	Project Description	Estimated Completion Date
LA0G1509A	Street improvement	City	Norwalk	Firestone Blvd: Studebaker Rd to Imperial Highway	Street widening, narrowing of median, installation of bike lane	N/A[1]
LA0G1064	Street improvement	City	Norwalk	Bloomfield Ave at Imperial Hwy	Additional turn lanes, modify existing median and traffic signal	N/A[1]
LA0G1342	Traffic signal upgrade	City	Norwalk	Imperial Hwy: San Gabriel River to Shoemaker Rd	Traffic signal synchronization	N/A[1]
LA0G1066	Street improvement	City	Norwalk	Studebaker Rd at Alondra Rd	Additional turn lane; modify existing median, traffic signals, and relocation streetlights	N/A[1]
LA0G1065	Street improvement	City	Norwalk	Pioneer Blvd at Imperial Highway	Additional turn lane; modify existing median and traffic signal	N/A[1]
LA0G1063	Street improvement	City	Norwalk	Studebaker Rd at Rosecrans Ave	Additional turn lanes; modify existing median and traffic signal	N/A[1]
LA0G1442	Traffic signal upgrade	City	Norwalk	Alondra Blvd: Puma Ave to Shoemaker Ave	Traffic signal upgrade	A[1]
LA0G1439	Traffic signal upgrade	City	Norwalk	Studebaker Rd: Rosecrans Ave to Cecilia St	Traffic signal upgrade	A[1]
LA0G1438	Traffic signal upgrade	City	Norwalk	Firestone Blvd and Rosecrans Ave	Traffic signal upgrade	A[1]
LA0G1437	Traffic signal upgrade	City	Norwalk	San Antonio Dr/Norwalk Blvd Rosecrans Ave to Civic Center Dr	Traffic signal upgrade	N/A[1]
LA0G1435	Traffic signal upgrade	City	Norwalk	Studebaker Rd: Alondra Blvd to Rosecrans Ave	Traffic signal upgrade	N/A[1]
LA0G1433	Traffic signal upgrade	City	Norwalk	Rosecrans Ave: Studebaker Rd to Carmenita Rd	Traffic signal upgrade	N/A[1]
ORA000809	Grade separation	OCTA	Fullerton	Raymond Ave	New bridge for BNSF Metrolink Rail	N/A[1]
ORA000115	Street improvement	City	Fullerton	SR 90 Imperial Hwy	Imperial Hwy, Los Angeles County to Harbor Blvd: restripe 4 to 6 lanes	N/A[1]

Project #[3]	Project Type	Lead Agency	Cities	Location	Project Description	Estimated Completion Date
ORA020113	Parking expansion	Metro	Fullerton	Fullerton Train Station	New parking structure: 500 spaces	N/A[1]
ORA120526	Street improvement	OCTA	Fullerton	State College Blvd: Orangethorpe Ave to Kimberly Ave	Widen from 4 to 6 lanes	N/A[1]
ORA120531	Fixed bus route	Metro	Fullerton/Anaheim/ Orange/Costa Mesa	Harbor Blvd: between Fullerton and Costa Mesa	Structures and added buses	N/A[1]
2M0735B	Freeway improvement	Caltrans	Anaheim/Placentia	SR 57 NB: Lincoln Ave to Orangethorpe Ave	Add 1 mixed-flow lane and interchange improvements at SR 91	N/A[1]
ORA120531	Fixed bus route	Metro	Fullerton/Anaheim/ Orange/Costa Mesa	Harbor Blvd: between Fullerton and Costa Mesa	Structures and added buses	N/A[1]
2M0735B	Freeway improvement	Caltrans	Anaheim/Placentia	SR 57 NB: Lincoln Ave to Orangethorpe Ave	Add 1 mixed-flow lane and interchange improvements at SR 91	N/A[1]
ORA040602	Grade separation	OCTA	Anaheim	State College Blvd	New bridge for BNSF Metrolink Rail	N/A[1]
ORA120332	Freeway improvement	Caltrans	Anaheim	SR 91 WB: I-5 to SR 57	1 mixed-flow lane addition	N/A[1]
ORA02925	Grade separation	OCTA	Anaheim	N Tustin Ave Overpass	Add bridge for rail	N/A[1]
ORA02925	Grade separation	OCTA	Anaheim	Lakeview Ave	New bridge for BNSF Metrolink Rail	N/A[1]
ORA151509	Pedestrian improvement	City	Anaheim	West St and Citron St	Construction of sidewalk gap closures	N/A[1]
ORA190902	Pedestrian improvement	City	Anaheim	Citywide	Build ADA-accessible sidewalk gaps within 0.5 mile of school entrances	N/A[1]

Sources: Caltrans 2017a, 2017b; SCAG 2020c, 2023

[1] Project is programmed in Southern California Association of Governments 2016 Regional Transportation Plan/Sustainable Communities Strategy but funding is not programmed.

[2] The project number comes from the relevant capital improvement plan.

ADA = Americans with Disabilities Act; BNSF = BNSF Railway; Caltrans = California Department of Transportation; I = Interstate; Metro = Los Angeles County Metropolitan Transportation Authority; N/A = not available or unable to be determined; NB = northbound; OCTA = Orange County Transportation Authority; SR = State Route; UPRR = Union Pacific Railroad; WB = westbound

Aviation

There are several aviation projects in the vicinity of the project section, including seven at LAX, one at Long Beach Airport, and five at John Wayne Airport, that will be completed in the future. These projects and their descriptions are provided in Table 3.2-19.

Table 3.2-19 Airport Projects

Project Name	Description
LAX Airfield and Terminal Modernization Project	This project would add two new terminals, called Concourse 0 and Terminal 9, for a total of 23 new gates. The project would also include an infill station for the under-construction LAX Automated People Mover at the proposed Terminal 9. The project would include airfield and roadway improvements with the goals of reducing tarmac wait times, enhancing passenger experience, and reducing congestion on roadways that access LAX terminals.
LAX Landside Access Modernization Program	The program includes the LAX Train (Automated People Mover), Intermodal Transportation Facilities, a Consolidated Rent-A-Car Center, improvements to the Central Terminal area, and a connection to Metro Green Line. Together, these projects will relieve traffic congestion and improve the travel experience. These projects seek to: ▪ Relieve traffic congestion within the Central Terminal area and the surrounding street network ▪ Create new convenient locations for passenger pick-up, drop-off, and parking outside of the Central Terminal area ▪ Give passengers a fast and reliable way to get to their flights ▪ Reduce vehicle emissions and improve air quality
LAX Midfield Satellite Concourse: North/ Baggage Optimization Project	A new $1.6 billion concourse addition to LAX's Tom Bradley International Terminal will feature 12 aircraft gates as well as a Baggage Optimization Project that will expand capacity for the Tom Bradley International Terminal and the new facility.
LAX Receiving Station X	In cooperation with the Los Angeles Department of Water and Power, Los Angeles World Airports is building a new $157.8 million power receiving station, Receiving Station X, that will address persistent power reliability, redundancy, and capacity issues at LAX.
LAX Terminals 2 and 3	Terminals 2 and 3, home to Delta Air Lines, Aeromexico, and WestJet, are currently undergoing a $2.3 billion modernization that broke ground in April 2019. The project includes a new headhouse for Terminals 2 and 3, the complete replacement of the Terminal 3 concourse and original 1961 satellite, a connection behind security between Terminal 3 and Tom Bradley International Terminal, and connection to the Automated People Mover train system.
LAX Terminals 4 and 5	Terminals 4 and 5, home to American Airlines, JetBlue and Spirit Airlines, are undergoing a $1.6 billion modernization slated to complete in 2027 that will create a centralized location for ticketing and screening and baggage claim with enhanced amenities for guests, as well as provide direct connection to the Automated People Mover train system.
Northside Development	The Northside Development, also known as the bow tie, is an approximately 70-acre section of land north of Westchester Parkway in which Los Angeles World Airports will be developing commercial and open space in the coming years. The commercial area includes 901,000 square feet of allowable development for a variety of commercial applications. Nearly 13 acres of land designated for recreational areas will also be built as part of the community benefits of the project.

Project Name	Description
Long Beach Airport's Modernization Program	The airport launched the second phase of terminal improvements following the completion of Phase 1 in 2012, which included a new passenger concourse, parking structure, and other improvements. Phase 2 focuses on presecurity improvements to enhance the overall experience for visitors and passengers, which include renovating facilities and spaces and improving overall functional flow. Construction of Phase 2 began in 2020, with most elements completed in 2024. Other elements designed as a part of Phase 2 were delayed as a result of budget constraints; the terminal roadway improvements project is anticipated to be completed by end of 2024, with other improvements continuing into early 2025

Sources: Los Angeles World Airports 2017; Long Beach Airport 2023, John Wayne Airport 2017; LGB Road Improvements 2024
LAX = Los Angeles International Airport; Metro = Los Angeles County Metropolitan Transportation Authority

Freight Rail

In the year 2040, under the No Project Alternative, freight train volume along the San Bernardino Subdivision between LAUS and Fullerton Junction is estimated to be 165 freight trains each weekday (Authority 2019).[4]

The High Desert Operational Efficiency Project is a Caltrans-sponsored project that will improve the efficiency of freight operations on the BNSF Cajon Subdivision and within the LOSSAN Corridor. The project, originally proposed in Lenwood (also potentially referred to as Barstow), is now proposed in Hesperia and unincorporated areas of San Bernardino County within BNSF right-of-way, extending for approximately 11.2 miles between railroad mile post 41.8 to the north and mile post 53.0 to the south. The project includes the construction of two 22,500-foot-long staging tracks and an 11-mile extension of the existing Main Track 1, matching the lengths of Main Tracks 2 and 3 between control point Martinez and control point Thorn.

These improvements will allow freight trains to be staged or held outside and east of the LOSSAN Corridor to alleviate freight rail congestion during routine maintenance in the LOSSAN Corridor and during periods of construction in the LOSSAN Corridor. The High Desert Operational Efficiency Project will allow freight to move more efficiently between the Los Angeles Basin and the High Desert Freight Corridor. In addition, the third main track will allow freight and passenger trains to more easily pass one another, alleviating delays and improving operations.

A CEQA Notice of Exemption (State Clearinghouse No. 2024040820) was filed for the High Desert Operational Efficiency Project on April 18, 2024, with the project determined to qualify for a Statutory Exemption related to specified mass transit projects, pursuant to State CEQA Guidelines Section 15275. The project was awarded $100,467,000 in funding through the State of California's Port and Freight Infrastructure Program (California State Transportation Agency 2023) and $30,770,000 in funding through the state's Trade Corridor Enhancement Program (California Transportation Commission 2025). The Port and Freight Infrastructure Program is overseen by the California State Transportation Agency, with assistance provided by Caltrans. The Trade Corridor Enhancement Program is a state program overseen by the California Transportation Commission. The High Desert Operational Efficiency Project is expected to complete construction by July 2027 (California State Transportation Agency 2023).

[4] For LAUS to Fullerton, existing conditions are provided by BNSF, based on data from August 2016; 2040 Horizon Year projections are based on 2 percent annual growth. This is consistent with the 2018 California State Rail Plan (page 28), which anticipated growth to compound annually at a rate of 1.7 percent and 2.9 percent for carload and intermodal services, respectively.

Conventional Passenger Rail

Commuter rail transit at LAUS is provided by Metrolink, and intercity rail service is provided by Amtrak. These trains serve LAUS via numbered tracks and platforms. Amtrak and Metrolink currently also serve the existing Norwalk/Santa Fe Springs Metrolink Station and Fullerton Metrolink/Amtrak Station areas, as well as ARTIC, as presented in Table 3.2-13. In the existing condition, a shared-use agreement outlines the operating rights of freight and passenger rail within the Los Angeles to Fullerton corridor, including train volume caps based on completion of capital improvement projects that had been identified during preparation of the agreement (ATSF and RCTC 1992). In the No Project Alternative, passenger rail trains would continue to operate in the project section consistent with relevant contractual operating agreements between BNSF and other operators. Changes to passenger train volumes would likely require a renegotiation of the operating agreements. Any renegotiated shared-use agreement would continue to govern freight and passenger rail operating rights and include consideration of any proposed improvements to corridor capacity.

Vehicle Miles Traveled

Annual roadway VMT was calculated from the Authority's 2024 Business Plan (Authority 2024a) in the No Project condition for Horizon Year 2040. Under the No Project Alternative, the annual VMT statewide is anticipated to be 97,525,790,530 miles.

3.2.6.3 Project Impacts

Construction and operation of the Shared Passenger Track Alternatives could result in temporary and permanent impacts on transportation resources. These include potential impacts on vehicular delay, bicycle and pedestrian operations, transit operations, and freight and passenger rail operations.

Construction of the Shared Passenger Track Alternatives would include project components within the project footprint, as described in Chapter 2. In addition to construction of HSR structures and associated facilities, the Shared Passenger Track Alternatives would include construction of grade separations, two Metrolink station relocations, and modifications at two BNSF freight yards. The Norwalk/Santa Fe Springs Metrolink Station and the Fullerton Amtrak/Metrolink Station would be modified to facilitate pass-through HSR operations. At ARTIC, HSR platforms and station facilities would be added. One HSR station option is considered, in either Norwalk/Santa Fe Springs or Fullerton, which would consist of adding HSR station platforms and facilities to the existing Metrolink or Metrolink/Amtrak stations, respectively.

Construction of the Shared Passenger Track Alternatives could affect transportation resources, as summarized below:

- Temporary activities during project construction would involve building numerous improvements to overcrossing and undercrossing structures on the corridor, as well as new viaduct aerial structure segments and stations.
- Short- or long-term roadway closures to build the proposed improvements would occur.
- Traffic would be rerouted temporarily to parallel routes.
- The sequence of construction of these improvements could affect the amount of delay incurred for each closure operation, because overlapping detour routes could compound delays to parallel routes.
- Delays on parallel routes could affect adjacent intersections or roadways that are upstream of construction, which could further compound delay to vehicles, transit, pedestrians, and bicycles.
- Construction of new and relocated storm drains, wet utilities, and dry utilities could also result in temporary delays, some of which may exceed 30 minutes per vehicle.
- These effects could be considered direct and temporary for signalized intersections.

Operation of the Shared Passenger Track Alternatives could affect transportation resources, as described below:

- Operation of the project could result in a shift from additional vehicles on roadways to HSR, reducing daily auto trips and corresponding vehicle delay and congestion.
- Future intercity auto travel using freeways could divert to HSR service, relieving projected congestion on some regional routes.
- The reduction in future intercity trips could also improve the ability of regional roadways, freeways, and airports to accommodate freight traffic.
- Various signalized intersections, unsignalized intersections, and roadway segments along the project alignment and around HSR station areas could experience declines in LOS, because of additional trips to and from station areas generated by HSR operations.
- The SR 57 on-ramp queue length at the westbound Katella Avenue interchange could exceed the available storage capacity during the AM peak hour.
- Combined with the freight staging provided by Caltrans' High Desert Operational Efficiency Project, the proposed addition of the fourth mainline track throughout the project corridor and other improvements, such as grade separations and freight yard and track modifications, would improve overall efficiency of the corridor for freight and passenger rail operators.

The following sections separately describe each construction and operational impact for the Shared Passenger Track Alternatives.

Construction Impacts

Construction of the project 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: Temporary Impacts on Intersections, Roadways, and Freeways from Temporary Road Closures, Relocations, and Modifications During Construction

Shared Passenger Track Alternative A

In the Existing Plus Construction scenario, access to and circulation within the project site may be temporarily affected during construction. The project would be built at various locations during different time periods over an anticipated 5.5-year period; therefore, the access restrictions and other circulation impacts would occur in the project vicinity over that period. Although the preliminary construction schedule assumes the grade separations would all be built simultaneously, this is a worst-case scenario, and alternative access would be provided.

The project could lead to temporary disruption of transportation system operations because of 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 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-related trips would also result in increased trips into and out of the project construction site locations, which may affect freeway facilities.

The roadways that would experience temporary construction-related traffic effects from lane closures, road closures, and detours are included in Table 3.2-20. Temporary increases in traffic would occur along these roads and the surrounding network. During construction of the new or modified grade separations, access may be prohibited because of construction activities and temporary and permanent closures. Traffic would be detoured to other crossing locations, adding vehicle volumes and delays to intersections near those locations. Detours through freeway ramp intersections would result in temporarily increased delays at those locations.

Table 3.2-20 Temporary Construction Roadway Closures

Roadway	Status During Construction
Downey Rd/ Grande Vista Ave	Construction of a new lead track bridge overpass at Downey Rd/Grande Vista Ave would require temporary short-term lane closures and roadway closures during construction of bridge abutments, support segments, and decking. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Downey Rd would likely turn left at Washington Blvd, turn right at Soto St, turn right at Olympic Blvd, and turn left at Grande Vista Ave to reach their final destination. Southbound Grande Vista Ave would follow a similar detour path.
E 26th St (Vernon)/ Pennington Wy	E 26th St would be intermittently closed from east of UPRR San Pedro Subdivision to west of Atlantic Blvd during construction and permanently closed when relocation is complete.
Indiana St	Indiana St may experience occasional closures during reconstruction of E 26th St until the permanent closure of E 26th St.
Bonnie Beach Pl	Bonnie Beach Pl may experience occasional closures during reconstruction of E 26th St until the permanent closure of E 26th St.
Ayers Ave	Ayers Ave may experience occasional closures during reconstruction of E 26th St until the permanent closure of E 26th St.
Atlantic Blvd	Construction of a wider bridge at Atlantic Blvd would require temporary short-term lane closures and roadway closures. Pier foundation, column, and pier cap construction may require short-term lane closures. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Atlantic Blvd would likely turn right at Bandini Blvd, turn left at Eastern Ave, turn left at Washington Blvd, and turn right at Atlantic Blvd to reach their final destination. Southbound Atlantic Blvd would follow a similar detour path.
Eastern Ave	Construction of a new viaduct (Commerce Flyover) and widening of the existing bridge overpass at Eastern Ave would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Additionally, Eastern Ave would experience intermittent lane closures or full closures to trench and relocate utilities into the right-of-way. Detoured vehicles for northbound Eastern Ave would likely turn left at Bandini Blvd, turn right at Atlantic Blvd, turn right at Washington Blvd, and turn left at Eastern Ave to reach their final destination. Southbound Eastern Ave would follow a similar detour path.
E 26th St (Commerce)	Occasional closures would occur during modification of Commerce Yard.
Bandini Blvd	During construction of the Commerce Flyover and modifications to Commerce Yard, Bandini Blvd would experience intermittent lane closures or full closures to trench and relocate utilities into the right-of-way. Detoured vehicles for eastbound Bandini Blvd would likely turn right at Washington Blvd, turn right at Telegraph Rd, turn right at Garfield Ave, and turn left at Bandini Blvd to reach their final destination. Westbound Bandini Blvd would follow a similar detour path.
Rio Hondo access road	Occasional temporary short-term closures would occur during modification of the existing railroad bridge over Rio Hondo channel.
Rio Hondo Bike Path	Occasional temporary short-term closures would occur during modification of the existing railroad bridge over Rio Hondo channel.

Roadway	Status During Construction
SR 19 (Rosemead Blvd)	Re-profiling the roadway and building a single-track bridge overpass at Rosemead Blvd (SR 19) would require temporary long-term full closures during construction of support segments and decking. Temporary long-term local access detour to the surrounding property would be needed. Depending on the time of day and day of week for these long-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Rosemead Blvd (SR 19) would likely turn left at Slauson Ave, turn right at Paramount Blvd, turn right at Washington Blvd, and turn left at Rosemead Blvd (SR 19) to reach their final destination. Southbound Rosemead Blvd (SR 19) would follow a similar detour path.
Passons Blvd	Widening of the existing bridge at Passons Blvd would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Passons Blvd would likely turn left at Slauson Ave, turn right at Rosemead Blvd (SR 19), turn right at Washington Blvd, and turn left at Passons Blvd to reach their final destination. Southbound Passons Blvd would follow a similar detour path.
San Gabriel River Bike Path	Occasional temporary short-term closures would occur during modification of the existing railroad bridge over San Gabriel River.
Pioneer Blvd and Rivera Rd	Construction of a new undercrossing at Pioneer Blvd would require temporary long-term full closures. A temporary long-term local access detour to the surrounding properties and the community west of I-605 would be needed. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Pioneer Blvd would likely turn right at Los Nietos Rd, turn left at Norwalk Blvd, turn left at Slauson Ave, and turn right at Pioneer Blvd to reach their final destination. Southbound Pioneer Blvd would follow a similar detour path. Construction of a new Rivera Rd overpass at Pioneer Blvd would require temporary long-term full closures. A temporary long-term local access detour to the surrounding properties and the community west of I-605 would be needed. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle.
Norwalk Blvd and Los Nietos Rd	Construction of a new undercrossing at Norwalk Blvd would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for through traffic and local access to the surrounding properties would be needed. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Construction delays for the Norwalk Blvd undercrossing may be compounded by construction of the Los Nietos Rd undercrossing, because the two roadways would need to be lowered at the same time. Detoured vehicles for northbound Norwalk Blvd would likely turn left at Telegraph Rd, turn right at Pioneer Blvd, turn right at Orr and Day Rd/ Pioneer Blvd, turn right at Slauson Ave, and turn left at Norwalk Blvd to reach their final destination. Southbound Norwalk Blvd would follow a similar detour path. Construction of a new undercrossing at Los Nietos Rd would require temporary long-term full closures during construction of support segments and decking. A temporary long-term detour for local access to the surrounding properties would be needed. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Construction delays for the Los Nietos Rd undercrossing may be compounded by construction of the Norwalk Blvd undercrossing, because the two roadways would need to be lowered at the same time. Detoured vehicles for eastbound Los Nietos Rd would likely continue on Pioneer Blvd, turn right on Slauson Ave, turn right on Sorensen Ave, turn left on Santa Fe Springs Rd, and turn left at Los Nietos Rd to reach their final destination. Westbound Los Nietos Rd would follow a similar detour path.

Roadway	Status During Construction
Santa Fe Springs Rd	Widening of the existing bridge overpass at Santa Fe Springs Rd would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Santa Fe Springs Rd would likely turn left at Telegraph Rd, turn right at Norwalk Blvd, turn right at Los Nietos Rd, and turn left at Santa Fe Springs Rd to reach their final destination. Southbound Santa Fe Springs Rd would follow a similar detour path.
Telegraph Rd	Widening of the existing bridge overpass at Santa Fe Springs Rd would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Santa Fe Springs Rd would likely turn left at Telegraph Rd, turn right at Norwalk Blvd, turn right at Los Nietos Rd, and turn left at Santa Fe Springs Rd to reach their final destination. Southbound Santa Fe Springs Rd would follow a similar detour path.
Florence Ave	Construction of a bridge overpass at Florence Ave would require temporary short-term lane closures or roadway closures. Pier foundation, column, and pier cap construction may require long-term lane closures. Detoured vehicles for eastbound Florence Ave would likely turn left at Bloomfield Ave, turn right at Telegraph Rd, turn right at Shoemaker Ave, and turn left at Florence Ave to reach their final destination. Westbound Florence Ave would follow a similar detour path.
Lakeland Rd	Construction of the viaduct overpass at Lakeland Rd would require temporary short-term lane closures or roadway closures. Pier foundation, column, and pier cap construction may require long-term lane closures. Detoured vehicles for eastbound Lakeland Rd would likely turn left at Bloomfield Ave, turn right at Florence Ave, turn right at Shoemaker Ave, and turn left at Lakeland Rd to reach their final destination. Westbound Lakeland Rd would follow a similar detour path.
Imperial Hwy	Construction of the viaduct overpass at Imperial Hwy would require temporary short-term lane closures or roadway closures. Pier foundation, column, and pier cap construction may require long-term lane closures. Detoured vehicles for eastbound Imperial Hwy would likely turn right at Bloomfield Ave, turn left at Rosecrans Ave, turn left at Carmenita Rd, and turn right at Imperial Hwy to reach their final destination. Westbound Imperial Hwy would follow a similar detour path.
Carmenita Rd	Re-profiling roadway and widening the existing bridge overpass at Carmenita Rd would require temporary long-term full closures. Pier foundation, column, and pier cap construction may require long-term lane closures. Detoured vehicles for northbound Carmenita Rd would likely turn right at Rosecrans Ave, turn left at Valley View Ave, turn left at Imperial Hwy, and turn right at Carmenita Rd to reach their final destination. Southbound Carmenita Rd would follow a similar detour path.
Valley View Ave	Construction of a single-track bridge overpass at Valley View Ave would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Valley View Ave would likely turn right at Alondra Blvd, turn left at La Mirada Blvd, turn left at Rosecrans Ave, and turn right at Valley View Ave to reach their final destination. Southbound Valley View Ave would follow a similar detour path.

Roadway	Status During Construction
Alondra Blvd and Stage Rd	Reconstruction of the overcrossing at Alondra Blvd would require long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for local access to the surrounding properties would be needed. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for eastbound Alondra Blvd would likely turn left at Valley View Ave, turn right at Rosecrans Ave, and turn right at La Mirada Blvd to reach their final destination. Westbound Alondra Blvd would follow a similar detour path. Reconstruction of the retaining wall structure on the south side of Stage Rd between Coyote Creek and Alondra Blvd would require long-term lane closures or roadway closures during construction of the retaining wall and backfilling. A temporary long-term detour for local access to the surrounding property would be needed. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for eastbound Stage Rd would likely turn left at Valley View Ave, turn right at La Mirada Blvd, and turn left at Beach Blvd (SR 39) to reach their final destination. Westbound Stage Rd would follow a similar detour path.
SR 39 (Beach Blvd)	Widening of the existing bridge overpass at Beach Blvd (SR 39) would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Beach Blvd (SR 39) would likely turn right at Commonwealth Ave, turn left at Gilbert St, turn left at Malvern Ave, and turn right at Beach Blvd (SR 39) to reach their final destination. Southbound Beach Blvd (SR 39) would follow a similar detour path.
Dale St and Artesia Ave	Construction of a new bridge overpass at Gilbert St would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Gilbert St would likely turn left at Commonwealth Ave, turn right at Dale St, turn right at Malvern Ave, and turn left at Gilbert St to reach their final destination. Southbound Gilbert St would follow a similar detour path. Re-profiling roadway and reconstruction of the roadway on the south side and retaining wall structure on the north side of Artesia Ave between Fullerton Municipal Airport and Gilbert St would require long-term full closures during construction of the roadway, retaining wall, and backfilling. A temporary long-term detour for local access to the surrounding properties would be needed. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for eastbound Artesia Ave would likely turn right at Dale St, turn left at Commonwealth Ave, and turn left at Gilbert St to reach their final destination. Westbound Artesia Ave would follow a similar detour path.
Commonwealth Ave	Re-profiling the roadway and widening the existing bridge overpass at Commonwealth Ave would require temporary long-term full roadway closures during construction of the structure. A temporary long-term detour for local access to the surrounding properties would be needed. The skew angle at this particular structure would likely result in a more lengthy and complex construction period than typical undercrossing structures. Depending on the duration of closure operations, delays would likely exceed 30 minutes per vehicle. Detoured vehicles for eastbound Commonwealth Ave would likely turn left at Gilbert St, turn right at Malvern Ave, turn right at Euclid St, and turn left at Commonwealth Ave to reach their final destination. Westbound Commonwealth Ave would follow a similar detour path.

Roadway	Status During Construction
Euclid St	Demolishing the existing roadway bridge overpass and building a new bridge at Euclid St would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Euclid St would likely turn right at Orangethorpe Ave, turn left at Harbor Blvd, turn left at Commonwealth Ave, and turn right at Euclid St to reach their final destination. Southbound Euclid St would follow a similar detour path.
Highland Ave and Walnut Ave	Demolishing the existing roadway bridge overpass and building a new bridge at Highland Ave would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Depending on the time of day and day of week for these short-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Highland Ave would likely turn left at Valencia Drive, turn right at Euclid St, turn right at Commonwealth Ave, and turn left at Highland Ave to reach their final destination. Southbound Highland Ave would follow a similar detour path. Reconstruction of the roadway on the south side and retaining wall structure on the north side of Walnut Ave between Richman Ave and Highland Ave would require long-term full closures during construction of the roadway, retaining wall, and backfilling. A temporary long-term detour for local access to the surrounding properties would be needed. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Construction at Walnut St was designed to allow most trucks to be able to access abutting businesses, but larger trucks (e.g., intermodal freight) may not be able to adequately access loading zones along this segment during construction. Detoured vehicles for eastbound Walnut Ave would likely continue on Valencia Drive, turn right at Highland Ave, and then turn either left or right on Walnut Ave to reach their final destination. Westbound Walnut Ave would follow a similar detour path.
Harbor Blvd	Widening of the existing bridge to support the new Metrolink/Amtrak platform and building a new bridge overpass at Harbor Blvd would require temporary short-term lane closures or roadway closures during construction of support segments and decking. Pier foundation, column, and pier cap construction may require short-term lane closures. Depending on the duration of these closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound Harbor Blvd would likely turn right at Orangethorpe Ave, turn left at Lemon St, turn left at Chapman Ave, and turn right at Harbor Blvd to reach their final destination. Southbound Harbor Blvd would follow a similar detour path.
Lewis St	Re-profiling the roadway, widening the existing undercrossing, and building a new storage tracks bridge overpass at Lewis St would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for through traffic and local access to the surrounding properties would be needed and applied to connected minor streets such as Cerritos Ave. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Construction delays for the Lewis St undercrossing may be compounded by construction of the Cerritos Ave undercrossing, because the two roadways would need to be lowered at the same time. Detoured vehicles for northbound Lewis St would likely turn left at Cerritos Ave, turn right at Haster St, and turn right at Ball Rd to reach their final destination. Southbound Lewis St would follow a similar detour path.

Roadway	Status During Construction
Cerritos Ave	Construction of a new undercrossing at Cerritos Ave would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for through traffic and local access to the surrounding properties would be needed and applied to connected minor streets such as Lewis St and Vernon St. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Construction delays for the Cerritos Ave undercrossing may be compounded by construction of the Lewis St undercrossing, because the two roadways would need to be lowered at the same time. Detoured vehicles for eastbound Cerritos Ave would likely continue on Anaheim Blvd, turn right on Ball Rd, turn right on State College Blvd, and turn left at Cerritos Ave to reach their final destination. Westbound Cerritos Ave would follow a similar detour path.
State College Blvd	Construction of a new undercrossing at State College Blvd would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for through traffic and local access to the surrounding properties would be needed and applied to connected minor streets such as Howell Ave. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for northbound State College Blvd would likely continue on Katella Avenue, turn right on Lewis St, turn right on Cerritos Ave, and turn left at State College Blvd to reach their final destination. Southbound State College Blvd would follow a similar detour path.
Katella Ave	Re-profiling the roadway and reconstructing the undercrossing at Katella Ave would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for through traffic and local access to the surrounding properties would be needed and applied to connected minor streets such as Stadium Crossing and Howell Ave. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Detoured vehicles for eastbound Katella Ave would likely turn right at State College Blvd, turn left at Orangewood Ave, turn left at Main St, and turn right at Katella Ave to reach their final destination. Westbound Katella Ave would follow a similar detour path.
Douglass Rd	Re-profiling the roadway and reconstructing the undercrossing at Douglass Rd would require temporary long-term lane closures or roadway closures during construction of support segments and decking. A temporary long-term detour for local access to the surrounding properties would be needed and applied to connected minor streets. Pier foundation, column, and pier cap construction may require long-term lane closures. Depending on the duration of these long-term closure operations, delays may exceed 30 minutes per vehicle. Access to Angel Stadium would be preserved, because multiple entrance and egress routes leading to stadium parking are available. Detoured vehicles for southbound Douglass Rd would likely turn right at Katella Ave and turn left at Stadium Crossing to reach Angel Stadium. Detoured vehicles exiting Angel Stadium continuing to Douglass Rd would likely turn right at Stadium Crossing and turn left at Douglass Rd to reach their final destination.

I = Interstate; SR = State Route; UPRR = Union Pacific Railroad

The project includes IAMFs to avoid and minimize impacts. These IAMFs include requiring the protection of roadways during construction (**TR-IAMF#1**), which will preserve detours and alternate routes around construction. Preparation of preconstruction transportation plans in coordination with local and regional authorities will allow local agencies to determine safe and efficient alternate emergency access vehicle routes around or through the construction area, among many other issues (**TR-IAMF#2**). Off-street parking areas will be identified for construction throughout the construction period to minimize impacts on public on-street parking areas (**TR-IAMF#3**). Limitation of construction material deliveries and the number of construction employees arriving and departing the site during peak periods will minimize impacts on traffic congestion on

roadways during times of day when heavy travel is expected (**TR-IAMF#6**). Use of truck routes for construction materials delivery will reduce temporary noise and vibration impacts on sensitive receptors (**TR-IAMF#7**). Maintaining roadway capacity during special events (**TR-IAMF#8**) will preserve roadway capacity.

Shared Passenger Track Alternative B

Potential impacts for Shared Passenger Track Alternative B would be similar to those described for Shared Passenger Track Alternative A in terms of temporary access and circulation impacts during construction. Whereas Shared Passenger Track Alternative A proposes construction of the light maintenance facility (LMF) at 26th Street, Shared Passenger Track Alternative B would instead include an LMF at 15th Street. The 15th Street LMF would have an overall size of 52 acres, slightly larger than the 49 acres required by the 26th Street LMF. Additionally, as described in Section 2.10.5.3, Trench Construction, of Chapter 2, the 15th Street LMF yard lead tracks would need to cross under the Olympic Boulevard roadway overcrossing in three shallow trenches. Excavation would be required to a depth of approximately 15 feet to account for soil improvements and construction of formwork for the cast-in-place structures. Roadway traffic above on the Olympic Boulevard overpass could be subject to short-term closures, as needed, during construction. Therefore, construction of the 15th Street LMF would result in slightly different temporary impacts in the vicinity of the LMF site, because it covers a larger area compared to the 26th Street LMF and requires a larger amount of excavation and associated haul trips. Nonetheless, all temporary closures and detours described in Table 3.2-20 would occur during construction of Shared Passenger Track Alternative B. The same IAMFs discussed under Shared Passenger Track Alternative A will similarly avoid or minimize these potential effects during construction of Shared Passenger Track Alternative B, including **TR-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#3**, **TR-IAMF#6**, **TR-IAMF#7**, and **TR-IAMF#8**.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, temporary access and circulation impacts on intersections, roadways, or freeways would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR platform, station facilities, and additional parking would be in the same area that would be modified by the Shared Passenger Track Alternatives but could result in slightly different traffic shifts in the station area because of additional materials deliveries for construction of HSR facilities. Temporary closures and detours identified in Table 3.2-20 would be the same, although potentially of longer duration to accommodate construction of HSR station elements. Incorporation of **TR-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#3**, **TR-IAMF#6**, **TR-IAMF#7**, **TR-IAMF#8** will avoid or minimize adverse effects.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, temporary circulation impacts on intersections, roadways, or freeways would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR station elements, which would include a platform over Highland Avenue and HSR station facilities and additional parking along Walnut Avenue, would require up to an additional 10 acres of temporary disturbance beyond what would be required for the Shared Passenger Track Alternatives. Therefore, inclusion of the Fullerton HSR Station Option would result in slightly different traffic shifts in the station area because of additional haul trucks and materials deliveries for construction of HSR facilities. Temporary closures and detours described in Table 3.2-20 would be the same, although potentially of longer duration to accommodate construction of HSR station elements. Incorporation of **TR-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#3**, **TR-IAMF#6**, **TR-IAMF#7**, and **TR-IAMF#8** will avoid and minimize adverse effects.

CEQA Conclusion

Construction of both Shared Passenger Track Alternatives, as well as inclusion of either HSR station option, would require temporary roadway or lane closures that could increase congestion and intersection delay. Incorporation of **TR-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#3**, **TR-IAMF#6**, **TR-**

IAMF#7, and **TR-IAMF#8** will avoid and minimize potential effects. With respect to CEQA, such effects are not considered significant because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-2: Permanent Impacts on Signalized Intersections from Construction of Permanent Roadway Modifications

Shared Passenger Track Alternative A

In the Existing Plus Project scenario, project construction would require permanent changes to the roadway network, including, but not limited to, closures of some street segments; vertical realignments (i.e., lowered) at nine existing grade separations (SR 19 [Rosemead Boulevard]), Carmenita Road, Alondra Boulevard, Dale Street, Gilbert Street, Commonwealth Avenue, Lewis Street, Katella Avenue, and Douglass Road); and full grade separations of five existing at-grade crossings (Pioneer Boulevard, Norwalk Boulevard, Los Nietos Road, Cerritos Avenue, and State College Boulevard), which would involve lowering the roadway to cross under a new railroad bridge. Refer to Chapter 2 for more details on the proposed roadway modifications.

The construction-period closures related to the grade separations were analyzed based on the estimated shifts in area traffic that would occur because of construction-related roadway closures. Intersection LOS analysis was performed for the Existing Plus Project condition. The analysis provides the effects of traffic rerouting patterns at the signalized intersections that would need to accommodate permanently detoured traffic.

Permanent roadway closures and roadway modifications associated with project construction would cause shifts in travel patterns. Table 3.2-21 lists impacts at two signalized intersection locations (G98, Atlantic Boulevard/I-710 northbound ramps and Bandini Boulevard, and G44, East Street and Lincoln Avenue) that exceed thresholds for the Existing Plus Project condition. It should be noted that two currently unsignalized intersections (G170, Pioneer Boulevard and Wheelock Circle, and G211, Telegraph Road and Maple Avenue) would be upgraded to signalized intersections as part of the project components in the Existing Plus Project condition, which would result in an improvement in overall LOS at these intersections.

Table 3.2-21 Signalized Intersections: Existing Plus Project Impacts

No.	Intersection	Peak Hour	Existing Year 2015		Existing Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G98	Atlantic Blvd/I-710 NB ramps and Bandini Blvd	AM	87.8	**F***	109.3	**F***	21.5
		PM	87.9	**F***	103.6	**F***	15.7
G44	East St and Lincoln Ave	AM	33.2	C	53.7	D	20.5
		PM	40.7	D	68.6	**E***	28.0

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas.
I = Interstate; LOS = level of service; NB = northbound; sec = seconds; Y/N = yes or no

These permanent effects from construction are illustrated on Figure 3.2-5 for Existing Plus Project.

Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects by requiring that the contractor repair any structural damage to public roadways caused by HSR construction or construction access, returning any damaged sections to the equivalent of their original pre-HSR construction access condition or better. **TRAN-MM#1, Modify Traffic Signal Controls**; **TRAN-MM#2, Restripe Intersections**; and **TRAN-MM#4, Add Exclusive Turn Lanes to Intersections**, as described in Section 3.2.7, Mitigation Measures, if implemented by the Authority, would reduce adverse effects at the signalized intersections presented in Table 3.2-21.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A in terms of signalized intersection delay after construction of permanent roadway modifications. The permanent roadway modifications that would occur in the vicinity of the 15th Street LMF (closure of a cul-de-sac at 16th Street) would not result in delay differences at signalized intersections, and LOS at these intersections under Shared Passenger Track Alternative B would be the same as under Shared Passenger Track Alternative A. Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4**, if implemented, would reduce adverse effects identified in Table 3.2-21.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts related to signalized intersection delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Norwalk/Santa Fe Spring HSR Station Option does not require additional permanent roadway modifications and, therefore, there would be no differences in impacts at signalized intersections.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts related to signalized intersection delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Fullerton HSR Station Option would involve a slightly different realignment of Walnut Avenue, because the HSR station option would include additional improvements along the northern side of Walnut Avenue, west of Harbor Boulevard, to provide transit stops and pedestrian crossings. However, the aforementioned additional improvements would not result in differences in impacts at signalized intersections

CEQA Conclusion

The construction-period closures associated with the grade separations built as part of either Shared Passenger Track Alternative would result in adverse LOS effects in the Existing Plus Project scenario at two signalized intersections (G98, Atlantic Boulevard/I-710 northbound ramps and Bandini Boulevard, and G44, East Street and Lincoln Avenue). Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** will further avoid and minimize potential effects. With respect to CEQA, such effects are not considered significant because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-3: Permanent Impacts on Unsignalized Intersections from Construction of Permanent Roadway Modifications

Shared Passenger Track Alternative A

As discussed in Impact TR-2, in the Existing Plus Project scenario, project construction would require permanent modifications to the roadway network, including, but not limited to, closures of some street segments, modifications of existing grade separations, and fully grade separating five existing at-grade crossings by lowering the roadway to cross under a new railroad bridge (refer to Chapter 2 for more details on roadway modifications). Shifts in area traffic because of construction-period closures related to the grade separations would increase delay at some unsignalized intersections within the RSA.

Table 3.2-22 lists effects at one unsignalized intersection location that exceeds threshold for Existing Plus Project conditions. A complete listing of intersections that would result in LOS E or F, or that would improve in LOS as a result of the project section, is presented in the *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025). These permanent effects are illustrated on Figure 3.2-5 for the Existing Plus Project condition.

Table 3.2-22 Unsignalized Intersections: Existing Plus Project Impacts

No.	Intersection	Peak Hour	Existing Year 2015		Existing Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G95	Indiana St and Bandini Blvd	AM	33.3	D	41.8	**E***	8.5
		PM	30.1	D	>180[1]	**F***	>35[2]

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
[1] Control delay in No Project or Plus Project scenario is greater than 180 seconds.
[2] Control delay increase exceeds 35 seconds.
LOS = level of service; sec = seconds; Y/N = yes or no

Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#3, Add Signal to Intersection to Improve Level of Service/Operation**, as described in Section 3.2.7, if implemented, would reduce adverse effects at the unsignalized intersection presented in Table 3.2-22.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A in terms of unsignalized intersection delay after construction of permanent roadway modifications. The permanent roadway modifications that would occur in the vicinity of the 15th Street LMF (closure of a cul-de-sac at 16th Street) would not result in differences in impacts at unsignalized intersections. Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#3**, if implemented, would reduce adverse effects at the unsignalized intersection presented in Table 3.2-22.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts related to unsignalized intersection delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Norwalk/Santa Fe Springs HSR Station Option does not require additional permanent roadway modifications and, therefore, there would be no differences in impacts at unsignalized intersections

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts related to unsignalized intersection delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Fullerton HSR Station Option would involve a slightly different realignment of Walnut Avenue, but the modification would not result in differences in impacts at unsignalized intersections.

CEQA Conclusion

The construction-period closures associated with the grade separations built as part of either Shared Passenger Track Alternative would result in adverse LOS effects in the Existing Plus Project scenario at one unsignalized intersection (G95, Indiana Street and Bandini Boulevard). Incorporation of **TR-IAMF#1** and **TRAN-MM#3** will avoid and minimize potential effects. With respect to CEQA, such effects are not considered significant, because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-4: Permanent Impacts on Roadway Segments from Construction of Permanent Roadway Modifications

Shared Passenger Track Alternative A

In the Existing Plus Project scenario, permanent roadway closures and roadway modifications associated with project construction (as discussed further under Impact TR-2) would cause shifts in travel patterns. Table 3.2-23 provides impacts on roadway segments for Existing Plus Project conditions. A complete listing of roadway segments that would result in LOS E or F, or that would

improve in LOS as a result of the project section, is presented in the *Los Angeles to Anaheim Project Section Transportation Technical Report* (Authority 2025). These permanent effects are illustrated on Figure 3.2-5 for Existing Plus Project.

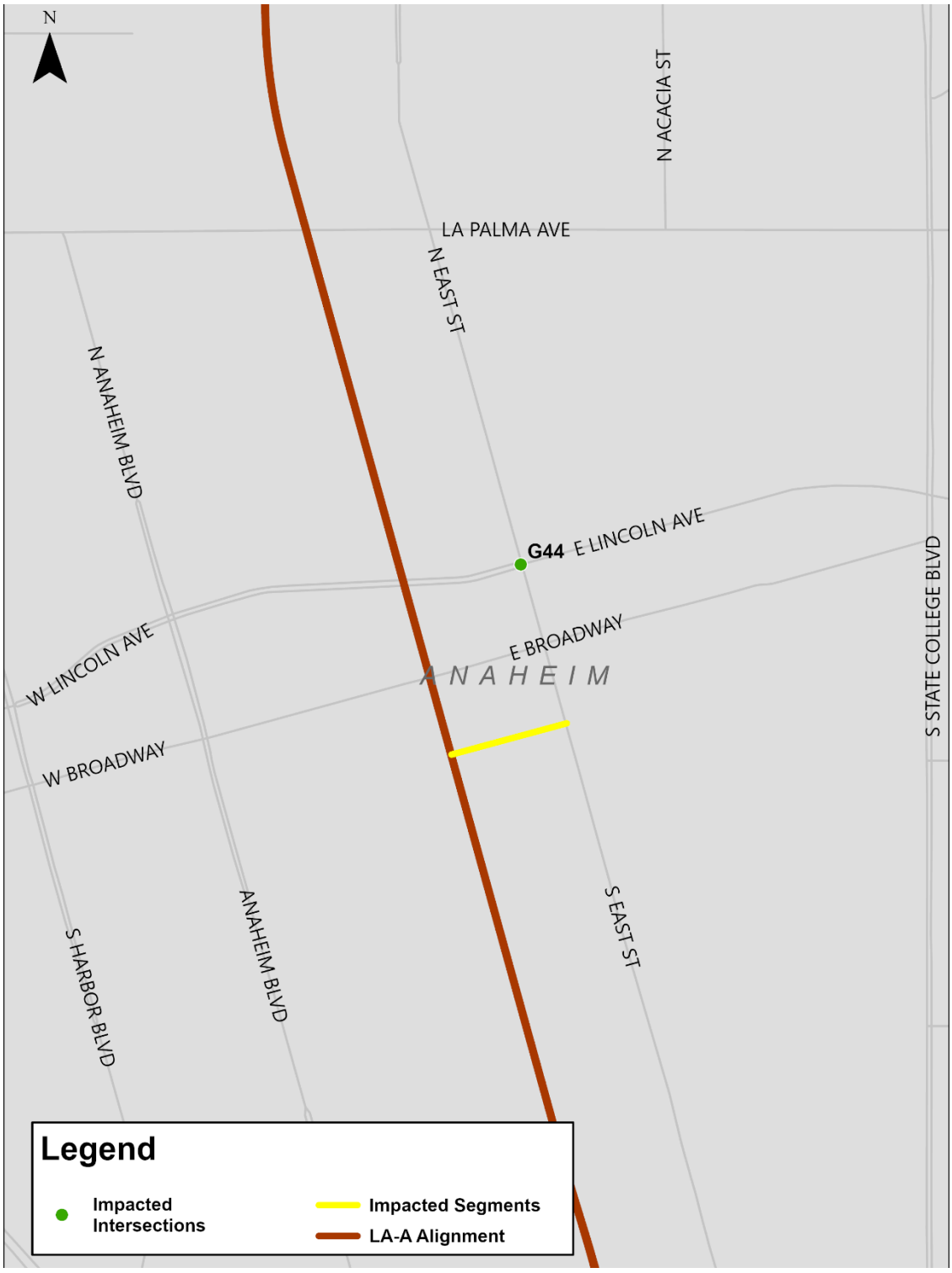
Table 3.2-23 Roadway Segment Impacts: Existing Year 2015 Impacts

Roadway	Segment Limits		Peak Hour	Existing Year 2015		Existing Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.92	**E***	0.13
			PM	0.83	D	1.00	**E***	0.17
Santa Ana St	West of East St	---[1]	AM	0.56	A	1.00	**E***	0.44
			PM	0.54	A	1.06	**F***	0.52

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
[1] The dashes are defined as "not applicable."
LOS = level of service; V/C = volume to capacity ratio; Y/N = yes or no

Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-5 Existing Plus Project Impacts, Sheet 1 of 2



Source: Authority 2025
"G" intersection number prefix indicates intersections outside of station areas.

Figure 3.2-5 Existing Plus Project Impacts, Sheet 2 of 2

Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#5, Add New Lanes to Roadway**, as described in Section 3.2.7, if implemented, would reduce adverse effects at the roadway segments presented in Table 3.2-23.

Shared Passenger Track Alternative B

The impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A in terms of roadway segment V/C ratio changes during construction. The permanent roadway modifications that would occur in the vicinity of the 15th Street LMF (closure of a cul-de-sac at 16th Street) would not result in differences in impacts at roadway segments. Incorporation of **TR-IAMF#1** will partially avoid and minimize adverse effects. **TRAN-MM#5**, if implemented, would reduce adverse effects at the roadway segments presented in Table 3.2-23.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts related to roadway segment delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Norwalk/Santa Fe Spring HSR Station Option does not require additional permanent roadway modifications and, therefore, there would be no differences in impacts at roadway segments.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts related to roadway segment delay after construction of permanent roadway modifications would be the same as those of the Shared Passenger Track Alternatives. The Fullerton HSR Station Option would involve a slightly different realignment of Walnut Avenue, but the modification would not result in differences in impacts at roadway segments.

CEQA Conclusion

Permanent roadway closures and roadway modifications associated with construction of either Shared Passenger Track Alternative would cause shifts in travel patterns that result in adverse LOS effects along two roadway segments. Incorporation of **TR-IAMF#1** and **TRAN-MM#5** will avoid and minimize potential effects. With respect to CEQA, such effects are not considered significant, because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-5: Temporary Impacts on Pedestrian, Bicycle, and Transit Facilities During Construction

Shared Passenger Track Alternative A

In the Existing Plus Construction scenario, pedestrian and bicycle travel may be temporarily affected by temporary roadway or lane closures during project construction. Detoured vehicular traffic would likely result in longer delays at pedestrian and bicycle crossings because of the increase in vehicle demand at traffic signals and other traffic-control devices. Table 3.2-20 identifies the roadways that would experience temporary construction-related traffic effects from lane closures, road closures, and detours. Construction would require temporary construction easements, which would result in the temporary closure of pedestrian or bicycle facilities. Any closure or removal of pedestrian facilities, bicycle lanes, and paths during construction would be temporary. As described in more detail in Section 3.15, construction activities would affect access or circulation at several existing and planned bicycle facilities, but alternative access would be provided to ensure connectivity and safety.

Project-related construction staging and traffic would have temporary impacts on bus transit, such as temporary closure and relocation of bus stops, temporary rerouting of bus lines because of roadway closures, and temporary closures and relocation of sidewalks, crosswalks, and curb ramps used to access bus stops. The construction-related activities would lead to temporary delays of buses because of changes in vehicle circulation and increased travel time along roadways and at HSR station areas. Temporary construction easements would require the temporary closure of parking areas, bus stops, or roadway travel lanes. Roadway closures would

only occur periodically at night or on weekends, as necessary, which would reduce the potential effect on transit service when it is heaviest during the day on weekdays. Bus stops would be temporarily relocated to nearby locations so that service would not be disrupted. Table 3.2-20 identifies the roadways that would experience temporary construction-related traffic effects from lane closures, road closures, and detours. The following transit lines would be affected (grouped by the locations of major project construction elements):

- New railroad bridge at Atlantic Boulevard: Metro 260/261
- Commerce Yard modifications (Bandini Boulevard utility relocation): City of Commerce Transit 700
- New railroad bridge and roadway vertical realignment at SR 19 (Rosemead Boulevard): Metro 266
- New railroad bridge at Passons Boulevard: Montebello Bus Line 60
- Pioneer Boulevard grade separation: Norwalk Transit System 1
- New railroad bridge at Santa Fe Springs: Norwalk Transit System 7
- New railroad bridge at Telegraph Road: Metro 120, Norwalk Transit System 3
- New viaduct over Imperial Boulevard: Norwalk Transit System 4
- New bridge at Alondra Boulevard: Metro 460
- New bridge at SR 39 (Beach Boulevard): OCTA 29, 29A; Metro 460
- Fullerton braced trench (Artesia Boulevard, Dale Street): OCTA 29A, 123
- New railroad bridge at Commonwealth Avenue: OCTA 26
- New railroad bridge at Euclid Street: OCTA 37
- Fullerton Metrolink/Amtrak Station modifications (Highland Avenue, Walnut Avenue, Harbor Boulevard): OCTA 43, 543, 123, 47
- State College Boulevard grade separation: OCTA 57
- Vertical realignment of Katella Avenue: OCTA 15/50
- Vertical realignment of Douglass Road: 53/553

Several IAMFs will avoid or minimize these potential temporary effects on pedestrian and bicycle facilities and transit during construction of the project. **TR-IAMF#2** will minimize impacts on bicyclists and transit, because the construction transportation plan will include methods to minimize construction traffic overall. To minimize construction impacts specifically on bicyclists and pedestrians, the contractor will prepare specific CMPs (**TR-IAMF#4** and **TR-IAMF#5**) to address maintenance of pedestrian and bicycle access during construction activities. To maintain pedestrian and bicycle access, the contractor will provide a technical memorandum (**TR-IAMF#12**), which will describe how pedestrian and bicycle accessibility and safety will be provided and maintained across the HSR corridor, to and from stations, and on station property. Incorporation of **TR-IAMF#13** will ensure that the Authority coordinates with transit agencies so that bus routes serving the existing and relocated passenger rail stations will be maintained and rerouted during construction. Incorporation of these IAMFs will avoid and minimize potential impacts, so that construction will not conflict with plans and policies regarding pedestrian and bicyclist safety, as described in Table 3.2-2. Additionally, access and connectivity will be maintained to avoid a decrease in the performance of pedestrian and bicycle facilities.

To minimize conflicts with transit during construction, the contractor will prepare a specific CMP (**TR-IAMF#11**) to maintain transit access and safe and adequate access for these users during construction.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A. Construction of the 15th Street LMF would not result in additional roadway closures or detours beyond those listed in Table 3.2-20 that would result in additional impacts on pedestrians, bicyclists, or transit routes. The LMF would require permanent closure of 16th Street, but it is a cul-de-sac that does not have existing or planned bicycle routes. Several IAMFs will avoid or minimize potential temporary effects during construction of the project, including **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13**.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR platform, station facilities, and additional parking could result in slightly different shifts in traffic in the vicinity of the HSR station option site because of additional materials deliveries for construction of HSR facilities. For instance, all temporary closures and detours within the station area at Imperial Highway and other associated roadways described in Table 3.2-20 would be the same but could occur for a longer duration to build the HSR station elements. Bus routes and stops (such as the Norwalk Transit System 4 route at Imperial Highway and Bloomfield Avenue), pedestrian and bicycle lane routes, and crossings at Imperial Highway and other associated roadways could potentially require temporary relocation to provide continued service during construction, for potentially a longer time period. Several IAMFs will avoid or minimize potential temporary effects during construction of the HSR station option, including **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13**.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR platform over Highland Avenue and HSR station facilities and additional parking along Walnut Avenue would include a greater area of temporary disturbance and additional supply deliveries, which could result in slightly different shifts in traffic in the vicinity of the HSR station option site. All temporary closures and detours described in Table 3.2-20 for Highland Avenue, Walnut Avenue, and Harbor Avenue would be the same, although the duration could be longer to build the HSR station elements. Bus routes and stops (such as the OCTA 43, 543, 123, and 47 routes along the foregoing roadways), pedestrian and bicycle lane routes, crossings, and access for these roadways could potentially require temporary relocation to provide continued services during construction, for potentially a longer time period. Several IAMFs will avoid or minimize potential temporary effects during construction of the HSR station option, including **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13**.

CEQA Conclusion

Incorporation of **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13** will minimize temporary transportation impacts on pedestrian, bicycle, and transit facilities. For pedestrian facilities and transit, construction would not result in a conflict in adopted plans or a material decrease in the performance of those facilities, and the impact would be less than significant. Therefore, these impacts would be less than significant.

Impact TR-6: Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities from Construction of Permanent Roadway Modifications

Shared Passenger Track Alternative A

Project construction would permanently modify roadways throughout the project section in the Existing Plus Project scenario. Vertical realignments would be required at nine existing grade separations (SR 19 (Rosemead Boulevard), Carmenita Road, Alondra Boulevard, Dale Street, Gilbert Street, Commonwealth Avenue, Lewis Street, Katella Avenue, and Douglass Road). Five existing at-grade crossings (Pioneer Boulevard, Norwalk Boulevard, Los Nietos Road, Cerritos Avenue, and State College Boulevard) would be fully grade separated, with the roadway lowered

under a new railroad bridge (refer to Table 2-14 of Chapter 2 for more details on roadway modifications). The project is designed to maintain the current width and layout of the roadways to the extent feasible, and the existing pedestrian and bicycle facilities at the foregoing roadway locations would be rebuilt during construction to ensure that safe and accessible connections are provided. In the two areas where the project components would necessitate modifications to the roadways (along Artesia Avenue and Walnut Avenue in Fullerton), the modified roads would still allow for sufficient space to accommodate reinstallation of existing or implementation of planned bicycle facilities. Along Artesia Avenue, the City of Fullerton has planned Class II bicycle lanes from Dale Place to Gilbert Street; the width of the roadway following project implementation would still provide sufficient space to accommodate two vehicle lanes and two Class II lanes. With respect to Walnut Avenue, the project components would not affect the roadway width from Richman Avenue to Highland Avenue, where the City of Fullerton has planned for future widening of the existing Class II bicycle lanes. Where the project design includes narrowing of Walnut Avenue east of Harbor Boulevard, the city's existing sharrows and wayfinding signs would be reinstalled. Accordingly, the project design does not prevent the reinstallation of the existing or implementation of future bicycle facilities identified in plans adopted by municipalities. Overall, Shared Passenger Track Alternative A would not permanently reconfigure or modify any existing or preclude any planned bicycle facilities and, therefore, would not conflict with any adopted plans or policies on bicycle facilities.

After construction of the grade separations, bus lines that currently cross the at-grade railroad crossings at Pioneer Boulevard, Norwalk Boulevard, Los Nietos Road, Cerritos Avenue, and State College Boulevard would operate with less delay. Passing trains and active grade-crossing safety equipment would no longer cause travel delays at these locations. This would be a beneficial effect of the project.

To maintain pedestrian and bicycle access, project design plans will include specifications for vehicle lanes, passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls (**TR-IAMF#12**). These will address how pedestrian and bicycle accessibility will be provided and maintained. Existing bicycle and pedestrian facilities would be replaced on completion of construction. All new and replaced facilities would be designed with specifications for passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be similar to those described for Shared Passenger Track Alternative A. A portion of 16th Street would be permanently closed during construction of the 15th Street LMF, but no transit routes operate within the area, and all bicycle and pedestrian facilities would be replaced on completion of construction. No existing or planned bicycle facilities would be permanently reconfigured or modified. Incorporation of **TR-IAMF#12** will ensure that pedestrian and bicycle accessibility will be provided and maintained.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR platform, station facilities, and additional parking would result in minor differences in permanent roadway modifications (addition of a new access road through the site and new signalized intersection) but it would not result in any differences in permanent impacts on existing or planned pedestrian, bicycle, or transit facilities in the station area. Incorporation of **TR-IAMF#12** will ensure that pedestrian and bicycle accessibility will be provided and maintained.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be similar to those described for the Shared Passenger Track Alternatives within the station area. Construction of the HSR platform over Highland Avenue and HSR station facilities and additional parking along Walnut Avenue would result in minor differences in the permanent roadway modifications (slightly different changes along the Walnut Avenue realignment) but it would not result in any differences

in permanent impacts on existing or planned pedestrian, bicycle, or transit facilities in the station area. The Fullerton HSR Station Option would provide new and enhanced pedestrian connections to the station area and across the railroad corridor, which would be a beneficial effect of the project. Incorporation of **TR-IAMF#12** will ensure that pedestrian and bicycle accessibility will be provided and maintained.

CEQA Conclusion

Incorporation of **TR-IAMF#12** will ensure that pedestrian and bicycle accessibility will be provided and maintained. The impact under CEQA would be less than significant because the project would not conflict with adopted policies, plans, or programs regarding pedestrian, bicycle, and transit facilities, or otherwise materially decrease the performance of such facilities. With the permanent roadway modifications, the project would provide safe and accessible bike and pedestrian facilities and improve transit performance. No existing bicycle facilities would be permanently reconfigured or modified, and no planned bicycle facilities would be precluded from future implementation. Therefore, CEQA does not require mitigation.

Impact TR-7: Permanent Impacts on Freeway Mainline Segments and Ramps During Construction

Shared Passenger Track Alternative A

In both the Existing Plus Construction and Existing Plus Project scenarios, there would not be impacts related to changes in V/C ratios for freeway segments or to freeway ramp queue lengths. As discussed in Table 3.2-4, permanent impacts during construction include changes in traffic that would occur as a result of permanent modifications to roadways. Given that no modifications to freeway segments or ramps would occur, Shared Passenger Track Alternative A would not result in permanent impacts to such facilities during construction.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A during construction. No modifications to freeway facilities are proposed. Therefore, no impacts on freeway segments or ramps are anticipated during project construction.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives. No modifications to freeway facilities are proposed, and no impacts on freeway segments or ramps are anticipated during project construction. Therefore, construction of this HSR station option would not result in additional or different impacts at the station site.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives. No modifications to freeway facilities are proposed, and no impacts on freeway segments or ramps are anticipated during project construction. Therefore, construction of this HSR station option would not result in additional or different impacts at the station site.

CEQA Conclusion

This threshold is not applicable to CEQA because automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA.

Impact TR-8: Temporary Impacts on Freight and Passenger Rail Operations During Construction

Shared Passenger Track Alternative A

Shared Passenger Track Alternative A would maintain some of the existing tracks within the corridor and would shift or realign the existing tracks in some locations. Construction of HSR station facilities and modifications to existing passenger rail stations would require building in

certain areas currently used for freight and passenger rail service and may require the temporary closure of tracks.

Where tracks would be shifted or realigned, the work would be minor and consist of moving the existing track and then reconnecting it to the rest of the mainline. For more extensive track realignments, the new tracks would be built first in the new and permanent location while the existing tracks would remain in place and operational. Once construction of the relocated track is completed, the new tracks would be connected to the existing tracks at the project limits, and the original tracks would be removed. For all types of track construction activities, including reconnecting lines, temporary closures would be required. While specific work windows would be defined through coordination with freight and passenger rail agencies during subsequent phases of or following project design, pursuant to industry standard practices, the work would be scheduled to be completed during windows in which potential disruptions to existing freight and passenger rail service would be minimized. The closure windows could be as short as a few hours for minor work or would be scheduled to occur intermittently across 1 to 2 days for more extensive track work. During track closures, freight and passenger rail services could be temporarily rerouted onto one of the other open tracks within the corridor, if needed. It should also be noted that Caltrans' High Desert Operational Efficiency Project, which is expected to complete construction by July 2027 and is described in more detail in Section 2.6.1.5 of Chapter 2 and in Section 3.2.6.2, No Project Alternative, will provide staging capacity for freight during HSR project construction. The staging tracks will allow freight trains to be staged outside of the LOSSAN Corridor, instead of having to stage them on tracks within the constrained project section, thereby minimizing delay for all passenger and freight operators in the project corridor during construction (Authority 2019, 2024b).

In some areas with heavy construction activities, such as for the new grade separations, shoofly tracks would be built, which would allow existing freight and passenger trains to bypass the construction areas entirely. On completion of the new mainline tracks, the temporary shoofly tracks would be removed. Shoofly tracks are only feasible in areas with unconstrained right-of-way with adequate space and are not feasible in constrained areas. Within the construction areas, speed restrictions may be imposed on freight and passenger rail operations until the work is complete. Scheduling of specific work windows for construction activities would also minimize the effect of the closures on businesses that rely on freight rail access. The project contractor will repair any structural damage to railways that may occur during the construction period and return any damaged sections to their original structural condition (**TR-IAMF#9**).

Construction of the 26th Street LMF would occur off the mainline tracks and would not affect freight or passenger rail service. When the LMF tracks are completed, they would be connected to the mainline tracks, which would require a short, temporary closure as described above.

Construction occurring in the vicinity of the passenger rail stations would also require the same temporary track closures, rerouting, or speed restrictions described above, but would not require the temporary closure of any passenger rail stations. The following passenger rail stations would be affected:

- Modifications to the Norwalk/Santa Fe Springs Metrolink Station would not affect the existing station during construction, because construction would occur within the new reconfigured site location (where the Metrolink platforms and parking would be shifted), while the existing tracks and station would remain open and operational. When construction of the modified Norwalk/Santa Fe Springs Metrolink Station is complete, a short-term closure would be required to connect the new tracks to the existing tracks. The parking lot on the western side of the corridor would remain open, while portions of the parking lots along the eastern side of the corridor would be used for temporary construction easements and would ultimately be converted to new Metrolink parking areas. Some portions of the eastern parking lots could remain open during construction, but with decreased parking availability, there could, therefore, be temporary increased vehicle congestion and queuing around the existing station.

- Modifications to the Fullerton Metrolink/Amtrak Station would require a portion of the southernmost platform to be closed to build the new Metrolink/Amtrak center platform. However, the existing tracks would remain in place and operational during construction, and Metrolink would continue to serve the remaining eastern portion of the platform; during peak periods, there could be passenger congestion at the shortened platform. When construction of the new Metrolink/Amtrak center platform and new southernmost track is complete, a short-term closure would be required to connect the new tracks to the existing tracks. The existing parking structure on the northern side of the corridor would be unaffected, but some of the parking along the southern side of the corridor would be removed during construction (approximately 27 spaces, as well as a small number of on-street parking spaces). The existing parking structure on the northern side of the corridor has 1,321 spaces. It is expected to have sufficient capacity to accommodate passengers, and there are also multiple paid parking structures nearby in downtown Fullerton, as well as free parking options. Therefore, temporary increased vehicle congestion and queuing around the existing station are not anticipated.
- Construction of the HSR platforms and station facilities at ARTIC would not affect existing passenger rail operations. Construction of the new platforms and tracks would occur south of the existing platforms and tracks, which would remain open and operational during construction. When construction of the HSR platforms and tracks is complete, a short-term closure would be required to connect the new tracks to the existing tracks. Portions of the surface parking lots immediately south of the existing Metrolink tracks and to the west and east of SR 57 would be displaced as a result of construction activities associated with the new ARTIC HSR tracks and platform. However, a new parking structure adjacent to SR 57 and Katella Avenue would be built, providing 1,350 HSR parking spaces and 626 replacement parking spaces to account for the displaced existing ARTIC parking spaces, for a total of 1,976 parking spaces. To minimize disruptions to the existing surface parking lots, construction would be staged such that the new parking structure would be completed and opened prior to the closure and removal of existing surface parking areas.
- Construction of the relocated Commerce and Buena Park Metrolink Stations would not affect existing passenger rail operations or parking at the existing stations. The existing stations would remain open and operational until the relocated stations are fully built and in operation. The new locations for the relocated Commerce and Buena Park Metrolink Stations would provide parking spaces at a 1:1 ratio compared to the stations' existing parking stalls (140 and 313 parking spaces, respectively). Although not considered in this document, the station relocations would not preclude cities from expanding parking to accommodate future Metrolink ridership needs. When the relocated stations are complete, there would be short-term closures of the track to tie the new tracks to the existing tracks.

Overall, construction of HSR is anticipated to have minimal impacts on freight and passenger rail operations, because service could be maintained with limited disruptions through the scheduling of specific work windows and staging for freight trains provided by the High Desert Operational Efficiency Project. To prevent construction from adversely affecting existing and planned rail service within the corridor or transit service at passenger rail stations, the Authority will incorporate **TR-IAMF#13**. Through implementation of **TR-IAMF#13,** the Authority will work closely with all agencies that provide freight and passenger rail services, bus services, or maintain operating rights within the corridor to ensure that the design, construction, and operation of the project section do not adversely affect existing and planned rail service.

The contractor will also identify specific measures in the CMP, as required by **TR-IAMF#11**, to maintain passenger rail access and provide safe and adequate access for passenger rail users during construction. In addition, the CMP will include methods to minimize construction traffic. Traffic controls developed as part of the CMP will include provisions for maintaining traffic flow and access and minimizing operations hazards through alternative access and detour provisions, routes for construction traffic, and scheduled transit access. The contractor will establish construction truck routes, restrictions on construction hours, and construction parking as part of the CMP.

Nonetheless, because specific work windows for track construction activities have not yet been defined, the avoidance or minimization of potential disruptions to freight and passenger rail weekday services cannot be ensured at this time. **TRAN-MM#6, Prepare Track Construction Work Window Plan**, will reduce disruptions to freight and passenger rail service. As described in Section 3.2.7, **TRAN-MM#6** will reduce adverse effects on freight and passenger rail services during project construction by requiring the Authority to coordinate with freight and passenger rail agencies and operators to identify specific work windows for track construction activities that minimize disruption to freight and passenger rail services within the project corridor to the maximum extent feasible.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A during construction, because the same modifications to freight and passenger railroad facilities would be required. Construction of the 15th Street LMF would occur off the mainline tracks and would not affect freight or passenger rail service. When the LMF tracks are completed, they would be connected to the mainline tracks, which would require a short, temporary closure as described above for Shared Passenger Track Alternative A. The Authority will incorporate **TR-IAMF#13** and **TR-IAMF#11** to ensure the Authority works closely with all agencies that provide freight and passenger rail services, bus services, or maintain operating rights within the corridor and ensure the contractor identifies specific measures in the CMP to maintain passenger rail access and provide safe and adequate access for passenger rail users during construction activities. **TRAN-MM#6** will reduce adverse effects on freight and passenger rail services during project construction.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives within the station area, because freight and passenger trains would continue to operate on the existing tracks through the existing Norwalk/Santa Fe Springs Metrolink Station during construction. Therefore, construction of this HSR station option would not result in additional or different impacts at the station site. The Authority will incorporate **TR-IAMF#13** and **TR-IAMF#11**. **TRAN-MM#6** will reduce adverse effects on freight and passenger rail services during project construction.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives within the station area, because freight and passenger trains would continue to operate on the existing tracks through the existing Fullerton Amtrak/Metrolink Station during construction. Therefore, construction of this HSR station option would not result in additional or different impacts at the station site. The Authority will incorporate **TR-IAMF#13** and **TR-IAMF#11**. **TRAN-MM#6** will reduce adverse effects on freight and passenger rail services during project construction.

CEQA Conclusion

The impact under CEQA related to temporary impacts on freight and passenger rail operations during construction would be potentially significant before mitigation. With incorporation of **TR-IAMF#13**, the Authority will work closely with all agencies that provide freight and passenger rail services or maintain operating rights within the corridor to ensure that the design, construction, and operation of the project section do not adversely affect existing and planned rail service. Additionally, the contractor will identify specific measures in the CMP to maintain passenger rail access and provide safe and adequate access for passenger rail users during construction through implementation of **TR-IAMF#11**. Implementation of **TRAN-MM#6** will further reduce impacts on freight and rail operations from project construction. This mitigation requires the Authority to coordinate with freight and passenger rail agencies and operators to identify specific work windows during which track construction activities could occur, minimizing disruptions to freight and passenger rail services within the project corridor. **TRAN-MM#6** will also require the identification of shoofly track locations in areas where heavy construction is

anticipated, restrictions on concurrent or adjacent track construction activities, and speed restrictions. With implementation of **TRAN-MM#6**, the impact under CEQA related to temporary impacts on passenger and freight rail operations during construction would be less than significant.

Operational Impacts

Operation of the project 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. The following sections discuss how operation of the Shared Passenger Track Alternatives would affect transportation access and mobility during project operation.

Impact TR-9: Continuous Permanent Impacts on Vehicle Miles Traveled During Operation

Shared Passenger Track Alternative A

Total VMT would be reduced, overall, with the HSR project in operation, and VMT reductions would be expected to improve with each year of operation. The reduction in statewide VMT is provided in Table 3.2-24.[5] The reduction in VMT represents the total number of vehicle miles driven that would be removed from regional roadways. The project 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.

Table 3.2-24 Reduction in Statewide Annual Vehicle Miles Traveled: Horizon Year 2040

Scenario	Annual VMT: Horizon Year 2040		
	No Project	Plus Project	Difference
Statewide Total	97,525,790,530	95,658,503,838	(1,867,286,692)

Source: Authority 2025
VMT = vehicle miles traveled

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A in terms of VMT during operation, because the location of the LMF would not affect ridership on the system or vehicle trips on regional roadways.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, there would be a smaller reduction in VMT during operation compared to the Shared Passenger Track Alternatives. Inclusion of the HSR station option would induce latent demand and result in more people making vehicle trips to access the HSR station option area, which would not occur under the Shared Passenger Track Alternatives. However, there would still be a net reduction in VMT. Table 3.2-25 provides the reduction in VMT with inclusion of the Norwalk/Santa Fe Springs HSR Station Option.

[5] Refer to Appendix 1-A, Changes in Project Benefits and Impacts, of the Draft EIR/EIS for more information on the VMT methodology.

Table 3.2-25 Reduction in Statewide Annual Vehicle Miles Traveled (with Norwalk/Santa Fe Springs High-Speed Rail Station Option): Horizon Year 2040

Scenario	Annual VMT: Horizon Year 2040		
	No Project	Plus Project	Difference
Statewide Total	97,525,790,530	97,086,923,954	(438,866,576)

Source: Authority 2025
VMT = vehicle miles traveled

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, there would be a smaller reduction in VMT during operation compared to the Shared Passenger Track Alternatives. Inclusion of the HSR station option would induce latent demand and result in more people taking vehicle trips to access the HSR station option area, which would not occur under the Shared Passenger Track Alternatives. However, there is still a net reduction in VMT. Table 3.2-26 provides the reduction in VMT with inclusion of the Fullerton HSR Station Option.

Table 3.2-26 Reduction in Statewide Annual Vehicle Miles Traveled (with Fullerton High-Speed Rail Station Option): Horizon Year 2040

Scenario	Annual VMT: Horizon Year 2040		
	No Project	Plus Project	Difference
Statewide Total	97,525,790,530	97,050,734,457	(475,056,073)

Source: Authority 2025
VMT = vehicle miles traveled

CEQA Conclusion

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

Impact TR-10: Continuous Permanent Impacts on Signalized Intersections During Operations

Shared Passenger Track Alternative A

In the Horizon Year 2040 Plus Project scenario, the project would provide benefits to the regional transportation system by diverting intercity trips from the road to HSR, thereby reducing vehicle trips on the freeways. 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 project 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 effects would be caused by the additional trips to and from the station area related to HSR station operations, as well as ambient growth of permanently relocated trips that would result from changes in the roadway network.

As summarized in Table 3.2-27, 20 signalized intersections would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario. In all scenarios, two intersections (G170, Pioneer Boulevard and Wheelock Circle, and G211, Telegraph Road and Maple Avenue) would be upgraded to a signalized intersection in the Plus Project condition, which would result in an improvement in overall LOS.

Table 3.2-27 Signalized Intersections: Horizon Year 2040 Impacts for Shared Passenger Track Alternatives A and B

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G44	East St and Lincoln Ave	AM	41.6	D	71.3	**E***	29.7
		PM	70.1	**E***	79.7	**E***	9.6
G89	Garfield Ave and Washington Blvd	AM	60.3	**E***	67.8	**E***	7.5
		PM	49.1	D	55	D	5.9
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	AM	49.3	D	56.1	**E***	6.8
		PM	46.4	D	46.9	D	0.5
N49	Studebaker Rd and Imperial Hwy	AM	66.2	**E***	70.5	**E***	4.3
		PM	74.1	**E***	77.1	**E***	3
N51	Bloomfield Ave and Firestone Blvd (south)	AM	72.9	**E***	77.8	**E***	4.9
		PM	104.6	**F***	104.7	**F***	0.1
N58	Carmenita Rd and Rosecrans Ave	AM	46	D	46	D	0
		PM	50.3	D	55.9	**E***	5.6
F10	Malden Ave and Commonwealth Ave	AM	15.6	B	19.5	B	3.9
		PM	48.3	D	99.4	**F***	>35
F11	Harbor Blvd and Imperial Hwy (SR 90)	AM	101.9	**F***	105.2	**F***	3.3
		PM	83.9	**F***	88.3	**F***	4.4
F15	Harbor Blvd and Chapman Ave	AM	71.2	**E***	80.3	**F***	9.1
		PM	63.4	**E***	74	**E***	10.6
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	151.2	**F***	>35
		PM	23.6	C	161.3	**F***	>35
F23	Lemon St and Chapman Ave	AM	42.3	D	46.6	D	4.3
		PM	49.7	D	55	**E***	5.3
F24	Lemon St and Commonwealth Ave	AM	62.2	**E***	69.4	**E***	7.2
		PM	70.6	**E***	75.8	**E***	5.2
F26	Lemon St and Orangethorpe Ave	AM	49	D	62.8	**E***	13.8
		PM	76.8	**E***	96.2	**F***	19.4
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	65.8	**E***	14.1
		PM	35.2	D	40.6	D	5.4
F29	Raymond Ave and Chapman Ave	AM	32.6	C	36.8	D	4.2
		PM	52	D	63.5	**E***	11.5

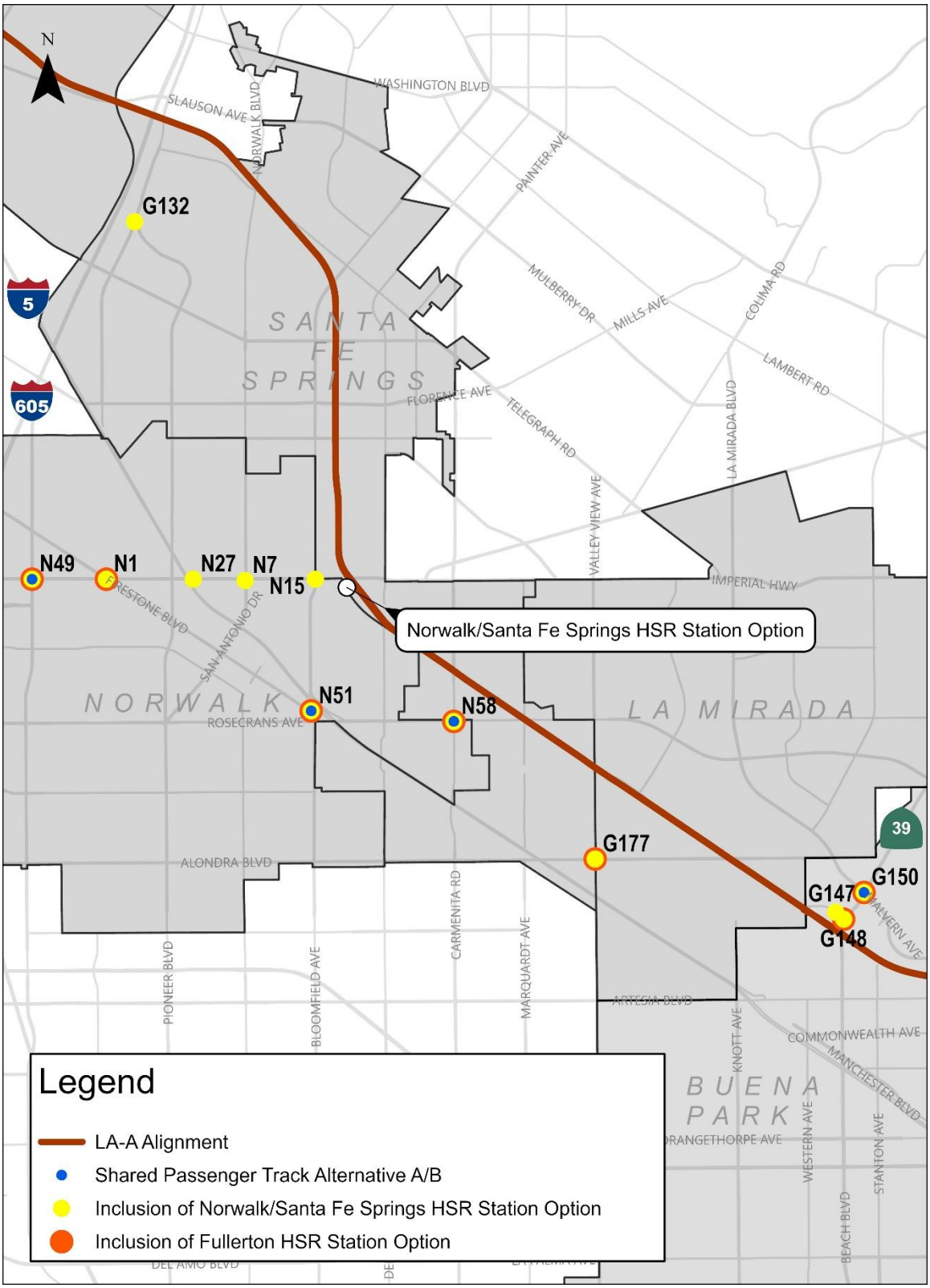
No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
F32	State College Blvd and Chapman Ave	AM	40.9	D	46.2	D	5.3
		PM	70.2	**E***	90	**F***	19.8
F48	SR 57 SB ramps and Nutwood Ave[1]	AM	53.6	D	59.6	**E***	6
		PM	34.5	C	39.4	D	4.9
A14	State College Blvd and Orangewood Ave	AM	60.5	**E***	58.5	**E***	-2
		PM	61.2	**E***	69	**E***	7.8
A17	Sunkist St and Cerritos Ave	AM	25.2	C	25.2	C	0
		PM	140.6	**F***	148.4	**F***	7.8
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	29.8	C	0
		PM	156.8	**F***	161.2	**F***	4.4

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.
[1] Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations.
EB = eastbound; LOS = level of service; SB = southbound; sec = seconds; SR = State Route

Permanent effects under all scenarios (Shared Passenger Track Alternatives A and B, as well as with inclusion of the Norwalk/Santa Fe Springs and Fullerton HSR Station Options) are illustrated on Figure 3.2-6 for Horizon Year 2040, sheets 1 through 3. If implemented, **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** would reduce adverse effects at the intersections presented in Table 3.2-27.

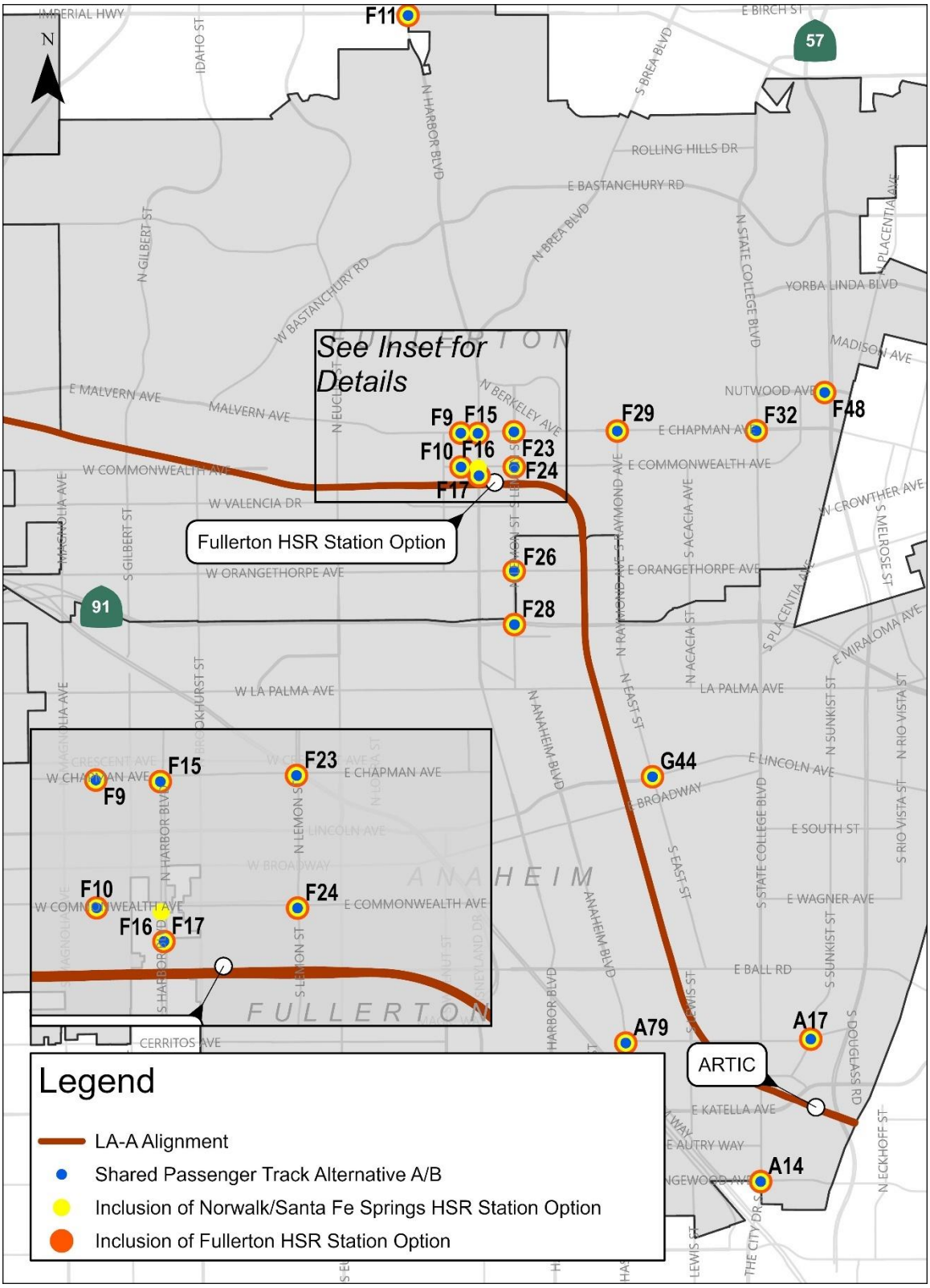
Source: Authority 2025

Figure 3.2-6 Horizon Year 2040 Intersection Impacts, Sheet 1 of 3



Source: Authority 2025

Figure 3.2-6 Horizon Year 2040 Intersection Impacts, Sheet 2 of 3



Source: Authority 2025

Figure 3.2-6 Horizon Year 2040 Intersection Impacts, Sheet 3 of 3

In Horizon Year 2040, there would be an increase in passenger trains passing through the eight at-grade crossings in Anaheim, with the addition of up to four HSR trains per hour. These eight at-grade-crossing locations are Orangethorpe Avenue, La Palma Avenue, Sycamore Street, Broadway, Santa Ana Street, South Street, Vermont Avenue, and Ball Road. The Authority studied the potential effect on gate-down time at these locations that would result from introducing HSR service (STV 2025) and determined that each HSR train crossing would be similar in duration to current Metrolink or Amtrak crossings at the foregoing locations. Future HSR crossings would primarily occur as isolated events (as opposed to multitrain gate-down-time events), because of the anticipated clockface schedule with which the passenger trains would operate. The clockface schedule is expected to result in 15-minute peak headways to account for the two HSR trains, one Metrolink train, and one Amtrak train per hour per direction. Additionally, the at-grade crossings are far enough from adjacent traffic signals to prevent queues from backing up to the traffic signals. Furthermore, in the rare instance that a multitrain gate-down-time event occurs through an HSR train and BNSF train passing in immediate succession, such instances would not exacerbate existing gate down times from multitrain events involving BNSF and passenger rail trains that already occur. Overall, the addition of HSR train operations would not lead to additional traffic delays at adjacent intersections. Section 3.11 provides additional information regarding gate-down time, specifically in relation to emergency vehicle response.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A in terms of impacts on signalized intersections, because the location of the LMF would not result in different impacts. According to the Institute of Transportation Engineers Trip Generation Manual, an LMF does not generate a significant number of trips that would result in an impact. If implemented, **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** would reduce adverse effects at the intersections presented in Table 3.2-27.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-28, inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in LOS impacts at the following additional intersections: G84, G94, G96, G98, G148, G177, N1, N7, N15, N27, and F16. Overall, inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in LOS impacts at 11 more intersections beyond those identified for the Shared Passenger Track Alternatives, for a total of 31 affected intersections.

Table 3.2-28 Signalized Intersections: Horizon Year 2040 Impacts with Inclusion of Norwalk/Santa Fe Springs High-Speed Rail Station Option

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G44	East St and Lincoln Ave	AM	41.6	D	71.3	**E***	29.7
		PM	70.1	**E***	79.7	**E***	9.6
G84	Downey Rd and Washington Blvd	AM	43.4	D	43.4	D	0
		PM	55.5	**E***	101.4	**F***	45.5
G89	Garfield Ave and Washington Blvd	AM	60.3	**E***	60.3	**E***	0
		PM	49.1	D	>180	**F***	>55[1]
G94	Downey Rd and Bandini Blvd	AM	42.7	D	42.7	D	0
		PM	41	D	>180	**F***	>55[1]

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G96	Bonnie Beach Pl and Bandini Blvd	AM	16.4	B	25.3	C	8.9
		PM	18.4	B	134.8	**F***	>55[1]
G98	Atlantic Blvd/I-710 NB ramps and Bandini Blvd[1]	AM	112.4	**F***	>180	**F***	>55[1]
		PM	102.1	**F***	124.3	**F***	22.2
G148	Beach Blvd (SR 39) and Stage Rd[1]	AM	20	C	78.5	**E***	>55[1]
		PM	22.3	C	73.7	**E***	51.4
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	AM	49.3	D	63.1	**E***	13.8
		PM	46.4	D	49.6	D	3.2
G177	Valley View Ave and Alondra Blvd	AM	50.4	D	58.7	**E***	8.3
		PM	47.6	D	51.7	D	4.1
N1	Firestone Blvd and Imperial Hwy[1]	AM	62.5	**E***	128.9	**F***	>55[1]
		PM	62.8	**E***	58.9	**E***	-3.9
N7	Norwalk Blvd and Imperial Hwy	AM	55.3	**E***	71	**E***	15.7
		PM	173.1	**F***	>180	**F***	25.5
N15	Bloomfield Ave and Imperial Hwy	AM	47	D	61.5	**E***	14.5
		PM	49.2	D	76.5	**E***	27.3
N27	I-5 NB on-ramp and Imperial Hwy	AM	44.2	D	70.1	**E***	25.9
		PM	25	C	29.4	C	4.4
N49	Studebaker Rd and Imperial Hwy	AM	66.2	**E***	130.2	**F***	>55[1]
		PM	74.1	**E***	143.3	**F***	>55[1]
N51	Bloomfield Ave and Firestone Blvd (south)	AM	72.9	**E***	77.8	**E***	4.9
		PM	104.6	**F***	104.7	**F***	0.1
N58	Carmenita Rd and Rosecrans Ave	AM	46	D	46	D	0
		PM	50.3	D	56	**E***	5.7
F10	Malden Ave and Commonwealth Ave	AM	15.6	B	30.4	C	14.8
		PM	48.3	D	144.3	**F***	>55[1]
F11	Harbor Blvd & Imperial Hwy (SR 90)	AM	101.9	**F***	105.2	**F***	3.3
		PM	83.9	**F***	88.3	**F***	4.4
F15	Harbor Blvd and Chapman Ave	AM	71.2	**E***	88.9	**F***	17.7
		PM	63.4	**E***	83.7	**F***	20.3
F16	Harbor Blvd and Commonwealth Ave	AM	71.7	**E***	76.9	**E***	5.2
		PM	41.8	D	45.3	D	3.5

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	>180	**F***	>55[1]
		PM	23.6	C	>180	**F***	>55[1]
F23	Lemon St and Chapman Ave	AM	42.3	D	46.6	D	4.3
		PM	49.7	D	55	**E***	5.3
F24	Lemon St and Commonwealth Ave	AM	62.2	**E***	69.4	**E***	7.2
		PM	70.6	**E***	75.8	**E***	5.2
F26	Lemon St and Orangethorpe Ave	AM	49	D	62.8	**E***	13.8
		PM	76.8	**E***	96.2	**F***	19.4
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	65.8	**E***	14.1
		PM	35.2	D	40.6	D	5.4
F29	Raymond Ave and Chapman Ave	AM	32.6	C	36.8	D	4.2
		PM	52	D	63.5	**E***	11.5
F32	State College Blvd and Chapman Ave	AM	40.9	D	46.2	D	5.3
		PM	70.2	**E***	90	**F***	19.8
F48	SR 57 SB ramps and Nutwood Ave[1]	AM	53.6	D	59.6	**E***	6
		PM	34.5	C	39.4	D	4.9
A14	State College Blvd and Orangewood Ave	AM	60.5	**E***	58.5	**E***	-2
		PM	61.2	**E***	69	**E***	7.8
A17	Sunkist St and Cerritos Ave	AM	25.2	C	25.2	C	0
		PM	140.6	**F***	148.4	**F***	7.8
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	29.8	C	0
		PM	156.8	**F***	161.2	**F***	4.4

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.
[1] Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations.
I = Interstate; EB = eastbound; LOS = level of service; NB = northbound; SB = southbound; sec = seconds; SR = State Route

These permanent effects are illustrated on Figure 3.2-6, sheets 1 through 3. If implemented, **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** would reduce adverse effects at the intersections presented in Table 3.2-28.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-29, inclusion of the Fullerton HSR Station Option would result in LOS impacts at three more intersections (intersection numbers G148, G177, and N1) beyond those identified for the Shared Passenger Track Alternatives, for a total of 23 affected intersections.

Table 3.2-29 Signalized Intersections: Horizon Year 2040 Impacts with Inclusion of Fullerton High-Speed Rail Station Option

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G44	East St and Lincoln Ave	AM	41.6	D	76.3	**E***	34.7
		PM	70.1	**E***	84.2	**F***	14.1
G89	Garfield Ave and Washington Blvd	AM	60.3	**E***	67.8	**E***	7.5
		PM	49.1	D	55	D	5.9
G148	Beach Blvd (SR 39) and Stage Rd[1]	AM	20	C	55.1	**E***	35.1
		PM	22.3	C	53.6	D	31.3
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	AM	49.3	D	57.8	**E***	8.5
		PM	46.4	D	50	D	3.6
G177	Valley View Ave and Alondra Blvd	AM	50.4	D	55.3	**E***	4.9
		PM	47.6	D	50.8	D	3.2
N1	Firestone Blvd and Imperial Hwy[1]	AM	62.5	**E***	136.3	**F***	>35
		PM	62.8	**E***	61.9	**E***	-0.9
N49	Studebaker Rd and Imperial Hwy	AM	66.2	**E***	70.5	**E***	4.3
		PM	74.1	**E***	77.1	**E***	3
N51	Bloomfield Ave and Firestone Blvd (south)	AM	72.9	**E***	77.8	**E***	4.9
		PM	104.6	**F***	104.7	**F***	0.1
N58	Carmenita Rd and Rosecrans Ave	AM	46	D	46	D	0
		PM	50.3	D	56	**E***	5.7
F10	Malden Ave and Commonwealth Ave	AM	15.6	B	24.4	C	8.8
		PM	48.3	D	126	**F***	>35
F11	Harbor Blvd and Imperial Hwy (SR 90)	AM	101.9	**F***	105.2	**F***	3.3
		PM	83.9	**F***	88.3	**F***	4.4
F15	Harbor Blvd and Chapman Ave	AM	71.2	**E***	85.4	**F***	14.2
		PM	63.4	**E***	78.6	**E***	15.2
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	>180	**F***	>35
		PM	23.6	C	>180	**F***	>35
F23	Lemon St and Chapman Ave	AM	42.3	D	46.6	D	4.3
		PM	49.7	D	55	**E***	5.3
F24	Lemon St and Commonwealth Ave	AM	62.2	**E***	69.4	**E***	7.2
		PM	70.6	**E***	75.8	**E***	5.2
F26	Lemon St and Orangethorpe Ave	AM	49	D	62.8	**E***	13.8

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
		PM	76.8	**E***	96.2	**F***	19.4
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	65.8	**E***	14.1
		PM	35.2	D	40.6	D	5.4
F29	Raymond Ave and Chapman Ave	AM	32.6	C	36.8	D	4.2
		PM	52	D	63.5	**E***	11.5
F32	State College Blvd and Chapman Ave	AM	40.9	D	46.2	D	5.3
		PM	70.2	**E***	90	**F***	19.8
F48	SR 57 SB ramps and Nutwood Ave[1]	AM	53.6	D	59.6	**E***	6
		PM	34.5	C	39.4	D	4.9
A14	State College Blvd and Orangewood Ave	AM	60.5	**E***	58.5	**E***	-2
		PM	61.2	**E***	69	**E***	7.8
A17	Sunkist St and Cerritos Ave	AM	25.2	C	25.2	C	0
		PM	140.6	**F***	148.4	**F***	7.8
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	29.8	C	0
		PM	156.8	**F***	161.2	**F***	4.4

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.
[1] Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations.
EB = eastbound; LOS = level of service; SB = southbound; sec = seconds; SR = State Route

These permanent effects are illustrated on Figure 3.2-6, sheets 1 through 3. If implemented, **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** would reduce adverse effects at the intersections presented in Table 3.2-29.

CEQA Conclusion

With implementation of the Shared Passenger Track Alternatives, both with and without inclusion of either HSR station option, a number of signalized intersections would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario. If implemented, **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4** would reduce adverse effects at the signalized intersections identified above. With respect to CEQA, such effects are not considered significant, because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-11: Continuous Permanent Impacts on Unsignalized Intersections During Operations

Shared Passenger Track Alternative A

As discussed under Impact TR-10, the project would provide benefits to the regional transportation system by diverting intercity trips from the road to HSR, thereby reducing vehicle trips on the freeways. Although the project would improve the regional transportation system, it would also result in impacts on some unsignalized intersections. As summarized in Table 3.2-30, two unsignalized intersections would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario.

Table 3.2-30 Unsignalized Intersections: Horizon Year 2040 Impacts for Shared Passenger Track Alternatives A and B

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G210	Eastern Ave and Driveway[1]	AM	84.9	**F***	98.5	**F***	13.6
		PM	>180	**F***	145.1	**F***	-34.9
F9	Malden Ave and Chapman Ave[1]	AM	162.3	**F***	>180	**F***	17.7
		PM	>180	**F***	>180	**F***	0

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.
[1] Two-way unsignalized intersection. The delay presented is for the worst minor approach delay.
LOS = level of service; sec = seconds

These permanent effects are illustrated on Figure 3.2-6 for Horizon Year 2040, sheets 1 through 3. If implemented, **TRAN-MM#3** would reduce adverse effects at the intersections presented in Table 3.2-30.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A in terms of unsignalized intersection delay during operation, because the location of the LMF would not result in different impacts. According to the Institute of Transportation Engineers Trip Generation Manual, an LMF does not generate a significant number of trips that would result in an impact. If implemented, **TRAN-MM#3** would reduce adverse effects at the intersections presented in Table 3.2-30.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-31, inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in LOS impacts at the following additional unsignalized intersections: G95, G97, G114, G118, G132, and G147. Therefore, inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in LOS impacts at six more unsignalized intersections beyond those identified for the Shared Passenger Track Alternatives, for a total of eight affected intersections.

Table 3.2-31 Unsignalized Intersections: Horizon Year 2040 Impacts with Inclusion of Norwalk/Santa Fe Springs High-Speed Rail Station Option

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G95	Indiana St and Bandini Blvd[1]	AM	39.6	**E***	64.2	**F***	24.6
		PM	31.7	D	>180	**F***	>35[1]
G97	Ayers Ave and Bandini Blvd[1]	AM	16	C	16.1	C	0.1
		PM	18.5	C	50.3	**F***	31.8
G114	Gage Rd and Telegraph Rd[1]	AM	53.9	**F***	53.9	**F***	0
		PM	94.8	**F***	164.8	**F***	>35[1]

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G118	Chapin Rd and Union St[2]	AM	10	A	10	A	0
		PM	16.7	C	54.7	**F***	>35[1]
G132	Pioneer Blvd and Orr and Day Rd[1]	AM	133	**F***	133	**F***	0
		PM	>180	**F***	>180	**F***	>35[1]
G147	Dodds Ave (east) and Stage Rd[1]	AM	16	C	92.3	**F***	>35[1]
		PM	15.1	C	>180	**F***	>35[1]
G210	Eastern Ave and Driveway[1]	AM	84.9	**F***	98.5	**F***	13.6
		PM	>180[1]	**F***	145.1	**F***	-34.9
F9	Malden Ave and Chapman Ave[1]	AM	162.3	**F***	>180	**F***	>35[1]
		PM	>180	**F***	>180	**F***	>35[1]

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.
[1] Two-way unsignalized intersection. The delay presented is for the worst minor approach delay.
[2] Four-way unsignalized intersection.
LOS = level of service; sec = seconds

These permanent effects are illustrated on Figure 3.2-6 for Horizon Year 2040, sheets 1 through 3. If implemented, **TRAN-MM#3** would reduce adverse effects at the intersections presented in Table 3.2-31.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be similar to those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-32, the same two unsignalized intersections would have adverse effects, but the delays during the AM peak period would be slightly greater.

Table 3.2-32 Unsignalized Intersections: Horizon Year 2040 Impacts with Inclusion of Fullerton High-Speed Rail Station Option

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G210	Eastern Ave and Driveway[1]	AM	84.9	**F***	98.5	**F***	13.6
		PM	>180	**F***	145.1	**F***	-34.9
F9	Malden Ave and Chapman Ave[1]	AM	162.3	**F***	>180	**F***	17.7
		PM	>180	**F***	>180	**F***	0

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.
[1] Two-way unsignalized intersection. The delay presented is for the worst minor approach delay.
LOS = level of service; sec = seconds

These permanent effects are illustrated on Figure 3.2-6 for Horizon Year 2040, sheets 1 through 3. If implemented, **TRAN-MM#3** would reduce adverse effects at the intersection presented in Table 3.2-32.

CEQA Conclusion

With implementation of the Shared Passenger Track Alternatives, both with and without inclusion of either HSR station option, a number of unsignalized intersections would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario. If implemented, **TRAN-MM#3** would reduce adverse effects at the unsignalized intersections identified above. With respect to CEQA, such effects are not considered significant, because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-12: Continuous Permanent Impacts on Roadway Segments During Operations

Shared Passenger Track Alternative A

As discussed under Impact TR-10, the project would provide benefits to the regional transportation system by diverting intercity trips from the road to HSR, thereby reducing vehicle trips on the freeways. Although the project would improve the regional transportation system, it would also result in impacts on some roadway segments along the alignment and in the vicinity of HSR stations.

Table 3.2-33 lists the roadway segments that would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario.

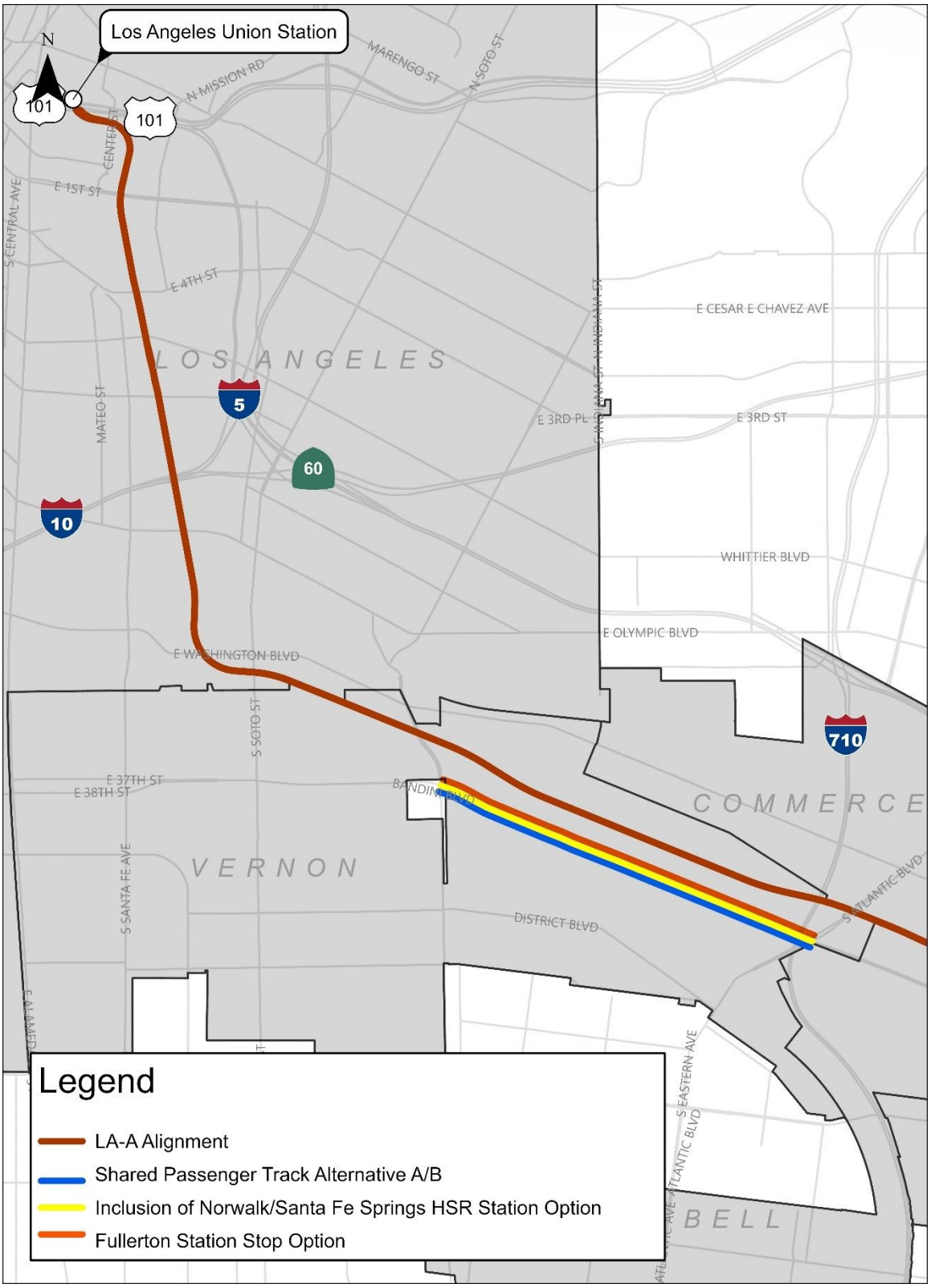
Table 3.2-33 Major Roadway Segments: Horizon Year 2040 Impacts for Shared Passenger Track Alternatives A and B

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.88	D	0.09
			PM	0.83	D	1	**F***	0.17
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.87	D	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	**E***	0.99	**E***	0.08
			PM	0.87	D	0.95	**E***	0.08
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.87	D	0.91	**E***	0.04
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.95	**E***	0.99	**E***	0.04
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	**F***	1.1	**F***	0.03
			PM	1.03	**F***	1.07	**F***	0.04
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	**E***	1.02	**F***	0.03
			PM	0.95	**E***	0.99	**E***	0.04
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	**F***	1.59	**F***	0.04
			PM	1.67	**F***	1.71	**F***	0.04

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.95	**E***	0.06
			PM	0.82	D	0.89	D	0.07
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	**F***	1.23	**F***	0.04
			PM	1.23	**F***	1.27	**F***	0.04
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	**F***	1.45	**F***	0.21
			PM	1.41	**F***	1.61	**F***	0.20
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	**F***	1.33	**F***	0.17
			PM	1.45	**F***	1.61	**F***	0.16
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.99	**E***	0.10
			PM	0.92	**E***	1.02	**F***	0.10
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	**E***	1.05	**F***	0.10
			PM	1.12	**F***	1.22	**F***	0.10
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	**F***	1.51	**F***	0.12
			PM	1.75	**F***	1.87	**F***	0.12
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	**F***	1.43	**F***	0.04
			PM	1.75	**F***	1.79	**F***	0.04
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.93	**E***	0.10
			PM	0.83	D	0.93	**E***	0.10
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	**F***	1.07	**F***	0.04
			PM	1.19	**F***	1.23	**F***	0.04
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	**E***	0.95	**E***	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.9	D	0.70
			PM	0.3	A	1	**F***	0.70

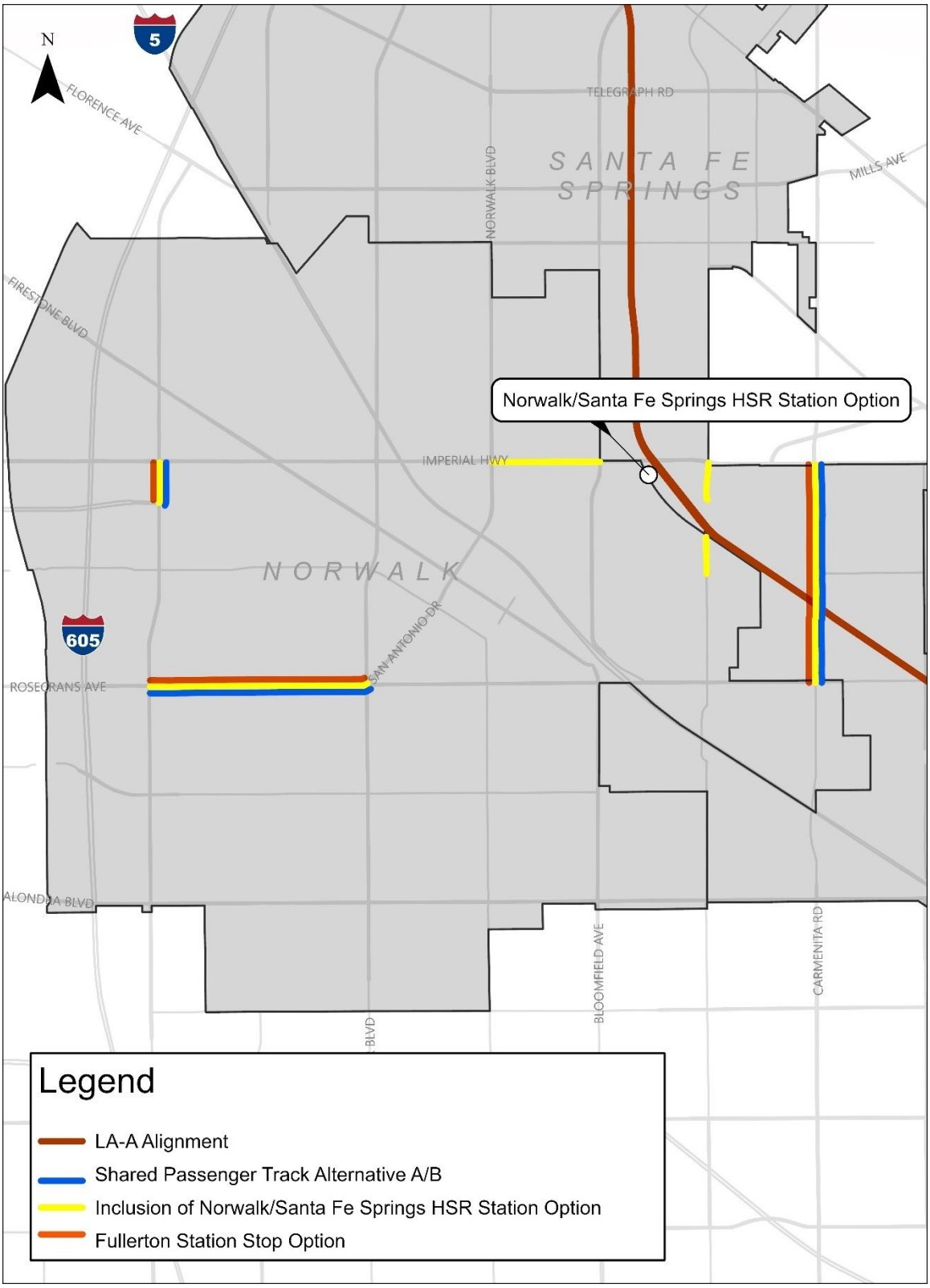
* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
I- = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio

Overall, Shared Passenger Track Alternative A would result in adverse effects along 20 roadway segments. These permanent effects are illustrated on Figure 3.2-7, sheets 1 through 3, for Horizon Year 2040. If implemented, **TRAN-MM#5** would reduce adverse effects on the roadway segments presented in Table 3.2-33.



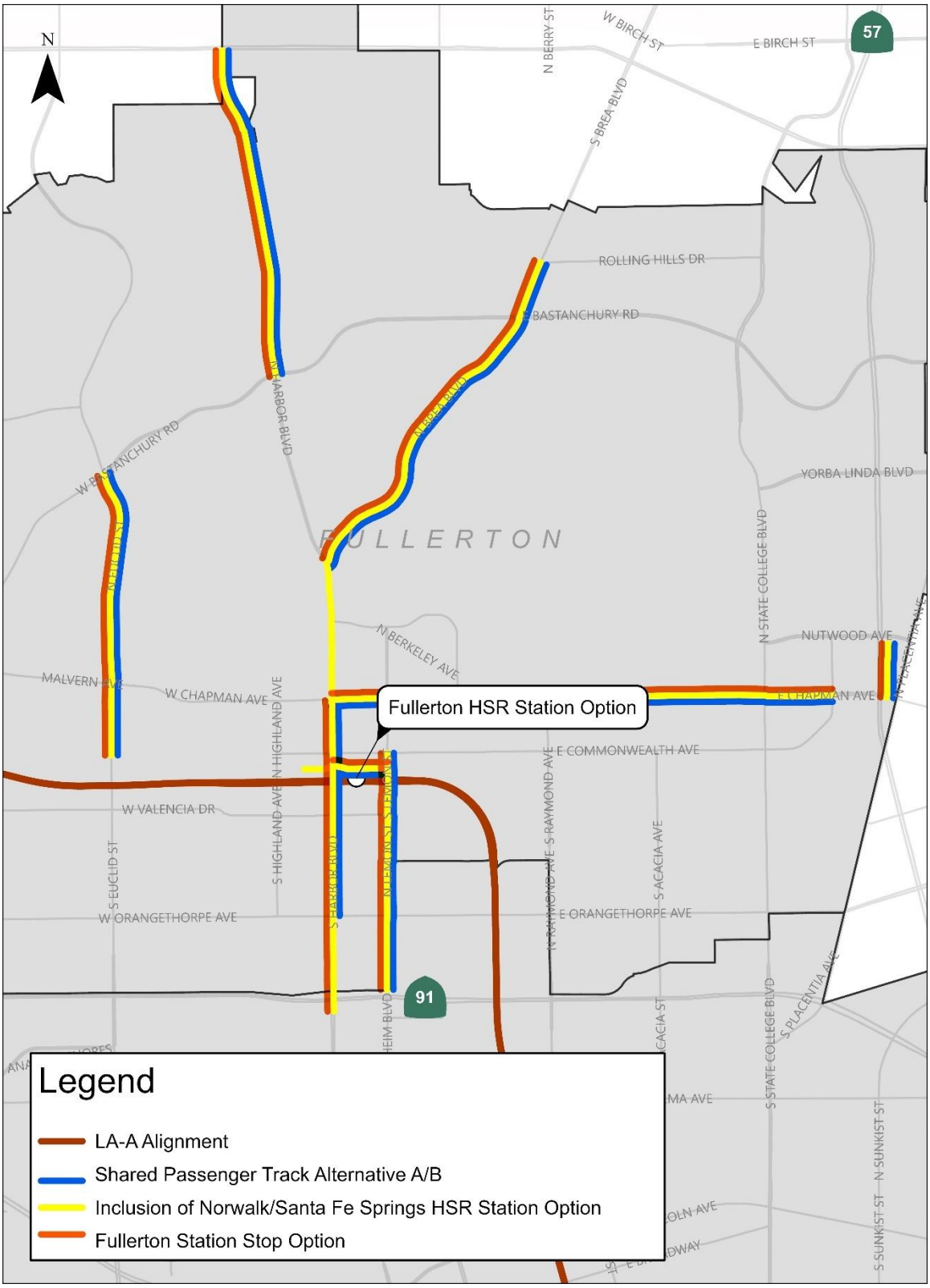
Source: Authority 2025

Figure 3.2-7 Horizon Year 2040 Roadway Segment Impacts, Sheet 1 of 3



Source: Authority 2025

Figure 3.2-7 Horizon Year 2040 Roadway Segment Impacts, Sheet 2 of 3



Source: Authority 2025

Figure 3.2-7 Horizon Year 2040 Roadway Segment Impacts, Sheet 3 of 3

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A (refer to Figure 3.2-7) in terms of roadway segment V/C ratio during operation, because the location of the LMF would not result in different impacts. According to the Institute of Transportation Engineers Trip Generation Manual, an LMF does not generate a significant number of trips that would result in an impact. If implemented, **TRAN-MM#5** would reduce adverse effects on the roadway segment presented in Table 3.2-33.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-34, the following additional roadway segments would experience V/C ratio increases above the threshold: Imperial Highway, between Norwalk Boulevard and Bloomfield Avenue; Shoemaker Road, between Imperial Highway and Foster Road; Harbor Boulevard, between Brea Boulevard and Berkeley Avenue; Harbor Boulevard, between Berkeley Avenue and Chapman Avenue; Harbor Boulevard, from Orangethorpe Avenue to Orangefair Avenue; and Santa Fe Avenue, between Malden Avenue and Harbor Boulevard. The foregoing roadway segments would otherwise be unaffected without the HSR station option.

Table 3.2-34 Major Roadway Segments: Horizon Year 2040 Impacts with Inclusion of Norwalk/Santa Fe Springs High-Speed Rail Station Option

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.92	**E***	0.13
			PM	0.83	D	1.08	**F***	0.25
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.87	D	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Imperial Hwy	Norwalk Blvd	Bloomfield Ave	AM	0.59	A	0.91	**E***	0.32
			PM	0.61	B	0.93	**E***	0.32
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	**E***	0.99	**E***	0.08
			PM	0.87	D	0.95	**E***	0.08
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.87	D	0.91	**E***	0.04
Shoemaker Ave	Imperial Hwy	Foster Rd	AM	0.4	A	0.9	D	0.50
			PM	0.5	A	1.00	**F***	0.50
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.95	**E***	0.99	**E***	0.04
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	**F***	1.1	**F***	0.03
			PM	1.03	**F***	1.07	**F***	0.04
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	**E***	1.02	**F***	0.03
			PM	0.95	**E***	0.99	**E***	0.04

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	**F***	1.59	**F***	0.04
			PM	1.67	**F***	1.71	**F***	0.04
Harbor Blvd	Brea Blvd	Berkeley Ave	AM	0.9	D	0.95	**E***	0.05
			PM	0.81	D	0.85	D	0.04
Harbor Blvd	Berkeley Ave	Chapman Ave	AM	0.89	D	0.95	**E***	0.06
			PM	0.82	D	0.89	D	0.07
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.95	**E***	0.06
			PM	0.82	D	0.89	D	0.07
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	**F***	1.27	**F***	0.08
			PM	1.23	**F***	1.31	**F***	0.08
Harbor Blvd	Orangethorpe Ave	Orangefair Ave	AM	0.75	C	0.79	C	0.04
			PM	0.88	D	0.93	**E***	0.05
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	**F***	1.45	**F***	0.21
			PM	1.41	**F***	1.61	**F***	0.2
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	**F***	1.33	**F***	0.17
			PM	1.45	**F***	1.61	**F***	0.16
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.99	**E***	0.1
			PM	0.92	**E***	1.02	**F***	0.1
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	**E***	1.05	**F***	0.1
			PM	1.12	**F***	1.22	**F***	0.1
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	**F***	1.51	**F***	0.12
			PM	1.75	**F***	1.87	**F***	0.12
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	**F***	1.43	**F***	0.04
			PM	1.75	**F***	1.79	**F***	0.04
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.93	**E***	0.1
			PM	0.83	D	0.93	**E***	0.1
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	**F***	1.07	**F***	0.04
			PM	1.19	**F***	1.23	**F***	0.04
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	**E***	0.95	**E***	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Santa Fe Ave	Malden Ave	Harbor Blvd	AM	0.2	A	1	**E***	0.8
			PM	0.2	A	1	**E***	0.8

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.9	D	0.7
			PM	0.3	A	1	**E***	0.7

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
I- = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio

Overall, inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in LOS impacts along six more roadway segments beyond those identified for the Shared Passenger Track Alternatives, for a total of 26 roadway segments with adverse effects. These permanent effects are illustrated on Figure 3.2-7, sheets 1 through 3, for Horizon Year 2040. If implemented, **TRAN-MM#5** would reduce adverse impacts on the roadway segments presented in Table 3.2-34.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives. As summarized in Table 3.2-35, one additional roadway segment would experience V/C ratio increases above the threshold: Harbor Boulevard, from Orangethorpe Avenue to Orangefair Avenue.

Table 3.2-35 Major Roadway Segments: Horizon Year 2040 Impacts with Inclusion of Fullerton High-Speed Rail Station Option

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.88	D	0.09
			PM	0.83	D	1	**F***	0.17
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.87	D	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	**E***	0.99	**E***	0.08
			PM	0.87	D	0.95	**E***	0.08
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.87	D	0.91	**E***	0.04
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	**E***	0.99	**E***	0.04
			PM	0.95	**E***	0.99	**E***	0.04
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	**F***	1.1	**F***	0.03
			PM	1.03	**F***	1.07	**F***	0.04
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	**E***	1.02	**F***	0.03
			PM	0.95	**E***	0.99	**E***	0.04
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	**F***	1.59	**F***	0.04
			PM	1.67	**F***	1.71	**F***	0.04

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.95	**E***	0.06
			PM	0.82	D	0.89	D	0.07
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	**F***	1.23	**F***	0.04
			PM	1.23	**F***	1.27	**F***	0.04
Harbor Blvd	Orangethorpe Ave	Orangefair Ave	AM	0.75	C	0.79	C	0.04
			PM	0.88	D	0.93	**E***	0.05
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	**F***	1.45	**F***	0.21
			PM	1.41	**F***	1.61	**F***	0.20
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	**F***	1.33	**F***	0.17
			PM	1.45	**F***	1.61	**F***	0.16
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.99	**E***	0.10
			PM	0.92	**E***	1.02	**F***	0.10
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	**E***	1.05	**F***	0.10
			PM	1.12	**F***	1.22	**F***	0.10
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	**F***	1.51	**F***	0.12
			PM	1.75	**F***	1.87	**F***	0.12
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	**F***	1.43	**F***	0.04
			PM	1.75	**F***	1.79	**F***	0.04
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.93	**E***	0.10
			PM	0.83	D	0.93	**E***	0.10
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	**F***	1.07	**F***	0.04
			PM	1.19	**F***	1.23	**F***	0.04
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	**E***	0.95	**E***	0.04
			PM	0.99	**E***	1.03	**F***	0.04
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.9	D	0.70
			PM	0.3	A	1	**F***	0.70

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).
I- = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio

Overall, inclusion of the Fullerton HSR Station Option would result in LOS impacts along one more roadway segment beyond those identified for the Shared Passenger Track Alternatives, for a total of 21 roadway segments with adverse effects. These permanent effects are illustrated on Figure 3.2-7, sheets 1 through 3, for Horizon Year 2040. If implemented, **TRAN-MM#5** would reduce adverse impacts on the roadway segments presented in Table 3.2-35.

CEQA Conclusion

With implementation of the Shared Passenger Track Alternatives, both with and without inclusion of either HSR station option, several roadway segments would exceed the impact threshold in the Horizon Year 2040 Plus Project scenario. If implemented, **TRAN-MM#5** would reduce adverse impacts on the roadway segments identified above. With respect to CEQA, such effects are not considered significant because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-13: Continuous Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities During Operations

Shared Passenger Track Alternative A

In the Horizon Year 2040 Plus Project condition, the project would be fully operational, and transit and nonmotorized (i.e., bicycles and pedestrians) trips around the proposed HSR station at ARTIC would increase because of the addition of passengers and HSR workers traveling to station areas.

At ARTIC, in the peak hour, the project would generate approximately 350 nonmotorized trips in Horizon Year 2040, which would increase the number of pedestrians and bicyclists using the sidewalks and bicycle facilities in the vicinity of the station. Existing and planned pedestrian and bicycle facilities serving the vicinity of ARTIC are expected to adequately meet project demand because Shared Passenger Track Alternative A would provide on-site facilities to support these trips. Additionally, as discussed further under Impact TR-6, the project is designed to maintain the current width and layout of the roadways to the extent feasible. Therefore, the majority of existing pedestrian and bicycle facilities along roadway locations proposed for construction activities would be rebuilt to their existing specifications, ensuring safe and accessible connections are provided during project operation. In the two areas where the project components would necessitate modifications to the roadways (along Artesia Avenue and Walnut Avenue in Fullerton), Shared Passenger Track Alternative A would either provide sufficient space to accommodate planned bicycle facilities (along Artesia Avenue) or avoid areas planned for future bicycle facilities (from Richman Avenue to Highland Avenue along Walnut Avenue) or allow for existing facilities to be reinstalled (east of Harbor Boulevard along Walnut Avenue).

HSR riders at the ARTIC station would create new demands for transit systems because of transfers from HSR to reach destinations served by these other systems. At ARTIC, the project would generate approximately 668 bus passengers per day in Horizon Year 2040 (refer to Table 6-75 in the *Los Angeles to Anaheim Project Section Transportation Technical Report*).[6] Based on such projections, it is not anticipated that the increases in HSR-induced ridership for other transit services would require the construction of substantial additional transit infrastructure. In addition, the introduction of new riders would have a net benefit by increasing farebox revenue for bus service providers with excess capacity. Systems that operate at capacity may require changes in service levels and additional vehicles. However, bus providers plan for their future needs and build the facilities to meet their system rider demands, as feasible, given funding availability. With respect to ARTIC, the introduction of HSR-induced ridership was included as part of the project operational components in the 2010 *Anaheim Regional Transportation Intermodal Center Draft Environmental Impact Report* (City of Anaheim 2010). Therefore, the

[6] Although Table 6-75 in the *Los Angeles to Anaheim Project Section Transportation Technical Report* also identifies ridership associated with passenger rail, such passengers are not categorized as transit ridership in this Draft EIR/EIS. The passenger rail ridership identified in Table 6-75 is associated with a mix of intercity and regional passenger rail services that proceed along the LOSSAN Corridor, which is a part of the national rail network, regulated by the FRA. On the other hand, riders of passenger rail services that would be considered transit ridership are those that ride trains proceeding along rail fixed-guideway public transportation systems, which are subject to the FTA, rather than the FRA. Examples of passenger rail transit services include subway and light rail lines.

capability of ARTIC transit providers to accommodate HSR-induced ridership was generally accounted for by the City of Anaheim in its environmental analysis and planning of the station.

Additionally, as discussed further under Impact TR-10, there would be an increase in passenger trains passing through the eight at-grade crossings in Anaheim in Horizon Year 2040, with the addition of up to four HSR trains per hour, which could potentially affect bus services at adjacent intersections. However, the Authority studied the potential effect on gate-down time at these locations that would result from introducing HSR service (STV 2025) and determined that each HSR train crossing would be similar in duration to current Metrolink or Amtrak crossings at the foregoing locations, largely because of the anticipated clockface schedule for passenger rail service that would prevent multitrain gate-down-time events for passenger rail trains. In the rare instance that a multitrain gate-down-time event occurs with an HSR train and BNSF train passing in immediate succession, such instances would not exacerbate existing gate down times of multitrain events involving BNSF and passenger rail trains that already occur. Therefore, HSR service is not anticipated to affect bus services at adjacent intersections in Anaheim. Overall, project operations may increase ridership on other transit systems but would not materially harm the ability of other transit providers to serve their customers and would not conflict with adopted policies, plans, or programs regarding public transit or otherwise materially decrease the performance of such facilities.

To maintain pedestrian and bicycle access at the station area, project design plans will include specifications for vehicle lanes, passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls (**TR-IAMF#12**). These will address how pedestrian and bicycle accessibility will be provided and maintained. All reconstructed roadways would replace all bicycle and pedestrian facilities on completion of construction. All new and replaced facilities would be designed with specifications for passenger loading zones, sidewalks, crosswalks, bike lanes, trails, bus stops, parking, and intersection controls. Incorporation of this IAMF will accommodate the increased number of pedestrians and bicyclists accessing the HSR station during operation. Therefore, there would not be a conflict with plans and policies regarding pedestrian and bicyclist safety, as described in Table 3.2-2. The Authority would also implement **TR-IAMF#13**, which will ensure that the Authority works closely with all agencies that provide bus service to existing and planned rail stations to define roles and responsibilities, including operational and maintenance responsibilities, to prevent effects on existing and planned bus routes servicing rail stations within the project corridor.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A, because the location of the LMF would not result in different impacts on pedestrian, bicycle, or transit facilities.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, there would be additional pedestrian, bicyclist, and transit activity at the HSR station option but the impacts would be similar to those described for the Shared Passenger Track Alternatives. The Norwalk/Santa Fe Springs HSR Station Option would generate approximately 158 nonmotorized (i.e., bicycles and pedestrians) trips during peak hours in Horizon Year 2040, which would increase the number of pedestrians and bicyclists using the sidewalks and bicycle facilities in the vicinity of the station. The Norwalk/Santa Fe Springs HSR Station Option would provide facilities on site to support these additional trips.

The Norwalk/Santa Fe Springs HSR Station Option would generate approximately 164 additional bus passengers per day in Horizon Year 2040 (refer to Table 6-75 in the *Los Angeles to Anaheim Project Section Transportation Technical Report*). Such an increase in ridership on other transit systems would not materially harm the ability of other transit providers to serve their customers and is not anticipated to require the construction of substantial additional transit infrastructure.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, there would be additional pedestrian, bicyclist, and transit activity at the HSR station option, but the impacts would be similar to those described for the Shared Passenger Track Alternatives. The Fullerton HSR Station Option would generate approximately 283 nonmotorized (i.e., bicycles and pedestrians) trips during peak hours in Horizon Year 2040, which would increase the number of pedestrians and bicyclists using the sidewalks and bicycle facilities in the vicinity of the station. The Fullerton HSR Station Option would provide facilities on site to support these additional trips.

The Fullerton HSR Station Option would generate approximately 290 additional bus passengers per day in Horizon Year 2040 (refer to Table 6-75 in the *Los Angeles to Anaheim Project Section Transportation Technical Report*). Such an increase in ridership on other transit systems would not materially harm the ability of other transit providers to serve their customers and is not anticipated to require the construction of substantial additional transit infrastructure. In addition, the introduction of HSR service was acknowledged in OCTA's *Directions 2045 Long Range Transportation Plan* as generally supporting OCTA's long-range transportation goals (OCTA 2023a). Therefore, OCTA, which currently provides multiple local fixed routes with bus stops at the Fullerton Metrolink/Amtrak Station, has generally accounted for HSR-induced ridership within its service area as part of its previous long-range planning efforts.

CEQA Conclusion

The project would not conflict with adopted policies, plans, or programs regarding pedestrian, bicycle, or transit facilities or otherwise materially decrease the performance of such facilities. Incorporation of **TR-IAMF#12** will ensure that safe and accessible bike and pedestrian facilities are provided at station areas, which will maintain or enhance nonmotorized access. Facilities would be designed to the latest standards and guidance and would provide adequate access. The project would not materially harm the ability of other transit services to serve their customers. The impact would be less than significant.

Impact TR-14: Continuous Permanent Impacts on Freeway Mainline Segments and Ramps During Operations

Shared Passenger Track Alternative A

No freeway mainline segments are forecast to experience continuous permanent impacts in Horizon Year 2040 Plus Project conditions, compared to Horizon Year 2040 No Project conditions, given that, based on traffic modeling forecasts presented in the *Los Angeles to Anaheim Project Section Transportation Technical Report*, trips would not increase on freeways as a result of HSR operations (Authority 2025).

In the Horizon Year 2040 Plus Project condition, one on-ramp queue length is anticipated to exceed the transportation impact threshold in the AM peak hour, as presented in Table 3.2-36.

Table 3.2-36 Freeway Service On-Ramp Queue Lengths: Horizon Year 2040 Impacts

Fwy	Direction	Interchange	Peak Hour	Available Queue Storage (feet)	No Project Queue Length (feet)	Plus Project Queue Length (feet)	Queue Length Increase (feet)	Exceeds Thresholds? (Y/N)
SR 57	SB	WB Katella Ave	AM	1,430	810	1,490[1]	680	Y
			PM	1,430	1,620	2,300[1]	680	N

[1] Queue length exceeds the available queue storage.
SB = southbound; SR = State Route; WB = westbound; Y/N = yes or no

If implemented, **TRAN-MM#7, Add Lane to State Route 57/Westbound Katella Avenue Southbound On-Ramp**, would provide sufficient capacity to accommodate the additional 680-foot queue length for vehicles exiting onto SR 57 from Katella Avenue during peak hours.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A during operation, because the location of the LMF would not result in different impacts on freeway segments or ramps. If implemented, **TRAN-MM#7** would reduce adverse effects at the on-ramp location presented in Table 3.2-36.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives, because no additional freeway mainline segments or freeway ramps are forecasted to experience a substantial change or have an exceedance of queue lengths.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives, because no additional freeway mainline segments or freeway ramps are forecasted to experience a substantial change or have an exceedance of queue lengths.

CEQA Conclusion

In the Horizon Year 2040 Plus Project condition, the Shared Passenger Track Alternatives are anticipated to result in one on-ramp queue length exceeding the transportation impact threshold in the AM peak hour. If implemented, **TRAN-MM#7** would reduce adverse effects at the on-ramp location presented above. With respect to CEQA, such effects are not considered significant, because automobile delay, as measured by LOS and other similar metrics, is no longer the metric by which transportation impacts are evaluated under CEQA.

Impact TR-15: Continuous Permanent Impacts on Freight Rail and Passenger Rail System Capacity During Operations

Shared Passenger Track Alternative A

As described in Chapter 2, the project would add a fourth mainline track from LAUS to Fullerton Junction, with two tracks to be used by BNSF and two tracks to be shared between BNSF and passenger operators. Under Shared Passenger Track Alternative A, there would be up to two HSR trains per hour in each direction. In 2023, the Authority conducted operational analysis to determine the theoretical capacity of the corridor, assuming two HSR trains per hour per direction and considering projected freight and passenger rail volumes based on the 2018 California State Rail Plan (Authority 2023c). The analysis found that with these train volumes and the addition of the fourth mainline track, implementation of HSR would not put any constraints on the current passenger operator agreements within the corridor or preclude plans for growth identified in the 2018 California State Rail Plan. Additionally, the project would improve overall efficiency along the corridor, in part, by building five new full grade separations (refer to Section 2.6.3.6, State Highway or Local Roadway Modifications, of Chapter 2) and by modifying tracks at Commerce Yard and Fullerton Junction to separate freight and passenger train operations. Furthermore, minor alterations to the proposed crossover layouts in Montebello and Fullerton to minimize freight and passenger train conflicts would provide sufficient freight train slots per day—equivalent to one train per hour per direction on the two shared tracks. Therefore, Shared Passenger Track Alternative A would maintain current and projected freight and passenger train volumes within the corridor.

Because of the amount and speed of both HSR and Metrolink operations and the need to maintain established service as scheduled, the one freight train per hour per direction would only be able to access the shared tracks during certain windows in peak hours in the morning and evening. Freight trains would be able to operate with fewer restrictions outside peak hours, especially during late night and early morning hours. The adopted FRA rules concerning the sharing of HSR with conventional freight and passenger services (FRA 2018) allow for the blending of HSR with heavier freight rail.

Although freight train windows on the shared tracks may be constrained compared to existing conditions, existing and forecasted 2040 freight levels can be accommodated in the areas where HSR, Metrolink, and freight rail would share tracks, because adequate durations of track access would be available to complete track moves to serve freight customers, based on review of data on freight operations in the corridor. Additionally, the High Desert Operational Efficiency Project (described in more detail in Section 2.6.1.5 of Chapter 2 and in Section 3.2.6.2) would provide staging capacity for freight trains during HSR operation. The High Desert Operational Efficiency staging tracks allow freight trains to be staged outside of the LOSSAN Corridor, instead of having to stage them on tracks within the constrained project section. Freight trains held on the High Desert Operational Efficiency tracks would be scheduled so they are in the correct operating window when they reach Fullerton Junction, minimizing delay for all passenger and freight operators in the corridor.

The container parking areas at Hobart Yard would be modified, but the displaced parking would be replaced and relocated adjacent to the new consolidated storage area. This modification would not affect BNSF's ability to load and unload containers. Because the project would not limit BNSF's operations and, therefore, would not cause diversions to truck or other rail modes, there would not be secondary impacts related to air quality, GHG emissions, noise, and traffic congestion.

The Authority will incorporate **TR-IAMF#13**, which will further define the roles and responsibilities within the shared corridor, including operational and maintenance responsibilities. Overall, HSR operations would not affect the ability of either other passenger rail operators or BNSF to maintain current or planned service levels.

Finally, as discussed further in Section 3.18, Regional Growth, under Impact RG-2, additional demand for freight rail services within the project corridor beyond planned growth already anticipated by the Authority and other operators and agencies would not occur as a consequence of Shared Passenger Track Alternative A.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those described for Shared Passenger Track Alternative A during operation; the location of the LMF sites would not affect rail operations, because the lead tracks and LMF tracks would be off the mainline. The Authority will incorporate **TR-IAMF#13** to ensure HSR operations do not affect the ability of other passenger rail operators or BNSF to maintain current or planned service levels.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives within the station area, because the HSR station option would not affect freight or passenger rail operations. HSR trains would stop at the HSR station platforms but because there is sufficient capacity within the corridor, HSR operations would not affect other passenger rail operators' ability to maintain current or planned service levels.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those described for the Shared Passenger Track Alternatives within the station area, because the HSR station option would not affect freight or passenger rail operations. HSR trains would stop at the HSR station platform but because there is sufficient capacity within the corridor, HSR operations would not affect other passenger rail operators' ability to maintain current or planned service levels.

CEQA Conclusion

The addition of the fourth mainline track from LAUS to Fullerton Junction would allow for two HSR trains per hour per direction, which would accommodate projected freight and passenger rail volumes within the corridor, as determined by the Authority's operational capacity analysis. The project would also include, but not be limited to, five full grade separations and other track

modifications to improve overall efficiency along the corridor. The project design incorporates **TR-IAMF#13** to ensure HSR operations do not affect the ability of other passenger rail operators or BNSF to maintain current or planned service levels. Therefore, the impact related to continuous permanent disruption to freight and passenger rail system capacity during operations would be less than significant under CEQA.

3.2.7 Mitigation Measures

The Authority has identified the following transportation mitigation measures for impacts under NEPA, which address adverse traffic delay effects. These are considered NEPA effects, not CEQA impacts. NEPA requires a reasonably complete discussion of mitigation measures for identified adverse effects. NEPA does not require that the Authority commit to potential mitigation measures. As discussed below, the Authority may, at its discretion, adopt or decline to adopt mitigation measures to address traffic delay effects.

3.2.7.1 TRAN-MM#1: Modify Traffic Signal Controls

TRAN-MM#1 will be implemented prior to construction of HSR and will modify traffic signal phasing sequence to improve operations at signalized intersections during construction and operation of HSR. If implemented, **TRAN-MM#1** would reduce adverse effects at all the affected intersections discussed in Section 3.2.6.3, Project Impacts, and would reduce impacts to completely below the impact threshold for the following intersections:

- G44 East Street and Lincoln Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add northbound left-turn and southbound left-turn protected phases
  - Add southbound right-turn overlap phase
  - Add westbound right-turn overlap phase
  - Add eastbound right-turn overlap phase
- F26 Lemon Street and Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add southbound right-turn overlap phase
  - Add westbound right-turn overlap phase
  - Add eastbound right-turn overlap phase

3.2.7.2 TRAN-MM#2: Restripe Intersections

TRAN-MM#2 will be implemented prior to construction of HSR and will restripe intersections to improve LOS and intersection operations during construction and operation of HSR. If implemented, **TRAN-MM#2** would reduce adverse effects at all the affected intersections discussed in Section 3.2.6.3 and would reduce impacts to completely below the impact threshold for the following intersections:

- G44 East Street and Lincoln Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert westbound through-right lane to through lane
- G89 Garfield Avenue and Washington Boulevard (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert westbound shared through and right-turn lane to an exclusive through lane

- G96 Bonnie Beach Place and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Convert southbound right-turn lane to left-/right-turn lane
- G98 Atlantic Boulevard/I-710 northbound ramps and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Convert westbound right-turn lane (to I-710) to through-right lane
  - Convert northbound through lane (to Atlantic Boulevard) to left-turn lane (to I-710)
- G148 Beach Boulevard (SR 39) and Stage Road (inclusion of Norwalk/Santa Fe Springs HSR Station Option and inclusion of Fullerton HSR Station Option):
  - Convert westbound through lane to an additional right-turn lane
  - Convert westbound exclusive right-turn lane to a shared through and right-turn lane
- G177 Valley View Avenue and Alondra Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option and inclusion of Fullerton HSR Station Option):
  - Convert southbound shared through and right-turn lane to an exclusive through lane
- N1 Firestone Boulevard and Imperial Highway (inclusion of Norwalk/Santa Fe Springs HSR Station Option and inclusion of Fullerton HSR Station Option):
  - Convert southbound shared through and left-turn lane to an exclusive through and left turn-lane
  - Convert northbound shared through and left-turn lane to an exclusive through and left-turn lane
- N15 Bloomfield Avenue and Imperial Highway (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Convert shared lane on the westbound approach to through lane
  - Convert through lane on the southbound approach to shared through-right lane
- N27 I-5 northbound on-ramp and Imperial Highway (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Convert shared lane to right-turn lane on the eastbound and north approaches
  - Convert shared through-left lane to exclusive left-turn lane for northbound approach
- N49 Studebaker Road and Imperial Highway (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert one westbound shared through and right-turn lane to an exclusive through and right-turn lane
- N51 Bloomfield Avenue and Firestone Boulevard (south) (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound left lane to shared left and shared right lane
- N58 Carmenita Road and Rosecrans Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert one westbound shared through and right-turn lane to an exclusive through and right-turn lane

- F10 Malden Avenue and Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert northbound shared through and left-turn to an exclusive left-turn lane
  - Convert exclusive northbound right-turn to shared through and right-turn lane
- F11 Harbor Boulevard and Imperial Highway (SR 90) (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through and right-turn lane to and exclusive through lane
  - Convert exclusive northbound through and right-turn lanes to a shared through and right-turn lane
  - Convert exclusive westbound through and right-turn lanes to a shared through and right-turn lane
- F15 Harbor Boulevard and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through and right-turn lane to an exclusive through and right-turn lanes
  - Convert northbound shared through and right-turn lane to an exclusive through and right-turn lanes
- F16 Harbor Boulevard and Commonwealth Avenue (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Convert one through lane on westbound, northbound, and eastbound to shared through right lane
- F17 Harbor Boulevard and Santa Fe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through and right-turn lane to an exclusive through and an exclusive left-turn lane
- F23 Lemon Street and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through and right-turn lane to an exclusive through and an exclusive right-turn lane
- F24 Lemon Street and Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert southbound shared through and right-turn lane to a through lane
- F26 Lemon Street and Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert westbound left-turn lane to westbound through lane
  - Convert westbound through-right lane to right-turn lane
  - Convert eastbound through-right lane to through lane

- F28 Anaheim Boulevard/Lemon Street and SR 91 eastbound ramps (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through left-turn lane to an exclusive left-turn lane
  - Convert eastbound exclusive right-turn lane to a shared through and right-turn lane
  - Convert northbound shared through and right-turn lane to two exclusive right-turn lanes
- F29 Raymond Avenue and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert westbound shared through and right-turn lane to an exclusive through and an exclusive right-turn lane
- F48 SR 57 southbound ramps and Nutwood Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert southbound left-turn lane to a shared through and left-turn lane
  - Convert southbound shared through, left-, right-turn lane to an exclusive right-turn lane
- A14 State College Boulevard and Orangewood Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert eastbound shared through and right-turn lane to an exclusive through lane
- A17 Sunkist Street and Cerritos Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Convert southbound shared through and right-turn lane to an exclusive through lane
  - Convert southbound shared through and left-turn lane to an exclusive through lane

3.2.7.3 TRAN-MM#3: Add Signal to Intersection to Improve Level of Service/ Operation

TRAN-MM#3 will be implemented prior to construction of HSR and will add traffic signals to affected unsignalized intersections that meet traffic signal warrants. This condition occurs in 2040, but the warrant criteria may or may not be met at earlier dates. Therefore, the signalization mitigation will only be required at such a time (between 2029 and 2040) as the warrant is met. These intersections will have to be monitored annually to determine when/if the warrant is met. If implemented, **TRAN-MM#3** would reduce adverse effects at all the affected intersections discussed in Section 3.2.6.3 and would reduce impacts to completely below the impact threshold for the following intersections:

- G95 Indiana Street and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal
- G97 Ayers Avenue and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal
- G114 Gage Road and Telegraph Road (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal

- G118 Chapin Road and Union Street (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal
- G132 Pioneer Boulevard and Orr and Day Road (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal
- G147 Dodds Avenue (east) and Stage Road (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Install two-phase traffic signal
- G210 Eastern Avenue and Driveway (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Install two-phase traffic signal
- F9 Malden Avenue and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Install two-phase traffic signal

3.2.7.4 TRAN-MM#4: Add Exclusive Turn Lanes to Intersections

TRAN-MM#4 will be implemented prior to construction of HSR and will add exclusive turn lanes at intersections to improve LOS and intersection operations during construction and operation of HSR. If implemented, **TRAN-MM#4** would reduce adverse effects at all the affected intersections discussed in Section 3.2.6.3 and would reduce impacts to completely below the impact threshold for the following intersections:

- G44 East Street and Lincoln Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one westbound right-turn lane
  - Add one southbound left-turn lane
  - Add one northbound left-turn lane
- G84 Downey Road and Washington Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add one westbound left-turn and right-turn lanes
  - Add one eastbound left-turn and right-turn lane
  - Add one southbound left-turn and right-turn lane
  - Add one northbound left-turn and right-turn lane
- G89 Garfield Avenue and Washington Boulevard (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Provide one additional southbound left-turn lane
  - Provide one additional westbound right-turn lane
- G94 Downey Road and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):

  - Add left-turn lanes to the southbound approach
  - Add right-turn lanes to the northbound approach
- G96 Bonnie Beach Place and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add two right-turn lanes to the southbound approach
- G98 Atlantic Boulevard/I-710 northbound ramps and Bandini Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add one southbound right-turn lane
  - Add one left-turn lane to the westbound approach
  - Add two left-turn lanes to the northbound approach
  - Add one right-turn lane to the northbound and southbound approaches
- G150 Beach Boulevard (SR 39) and La Mirada Boulevard/Malvern Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add right-turn lane to eastbound lane.
- G177 Valley View Avenue and Alondra Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to northbound approach
- N7 Norwalk Boulevard and Imperial Highway (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add two right-turn lanes to the eastbound approach
  - Add two left-turn lanes to the westbound approach
  - Add two right-turn lanes to the northbound approach
- N15 Bloomfield Avenue and Imperial Highway (inclusion of Norwalk/Santa Fe Springs HSR Station Option)
  - Add right-turn lane to northbound approach
  - Add right-turn lane to westbound approach
- N49 Studebaker Road and Imperial Highway (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to the northbound approach
  - Add one left-turn lane for eastbound and westbound approaches
- N51 Bloomfield Avenue and Firestone Boulevard (south) (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to the eastbound approach
- F11 Harbor Boulevard and Imperial Highway (SR 90) (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add two right-turn lanes to eastbound approach
  - Add one left-turn lane to the northbound and westbound approaches

- F15 Harbor Boulevard and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one left-turn lane to the westbound approach
- F24 Lemon Street and Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to the eastbound and southbound approaches
  - Add one left-turn lane to the northbound approach
- F26 Lemon Street and Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one eastbound right-turn lane
- F32 State College Boulevard and Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one left-turn lane to the eastbound and northbound approaches
  - Add one right-turn lane to the southbound approach
- F48 SR 57 southbound ramps and Nutwood Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to the eastbound approach
- A17 Sunkist Street and Cerritos Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one right-turn lane to the southbound approach
  - Add two left-turn lanes to the southbound approach
  - Add one right-turn lane to the westbound approach
- A79 Anaheim Boulevard and Cerritos Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one left-turn lane to the westbound approach
  - Add one right-turn lane to the northbound approach

3.2.7.5 TRAN-MM#5: Add New Lanes to Roadway

TRAN-MM#5 will be implemented prior to construction of HSR and will add additional roadway lanes to improve LOS and intersection operations during construction and operation of HSR. If implemented, **TRAN-MM#5** would reduce adverse effects at all the affected roadway segments discussed in Section 3.2.6.3 and would reduce impacts to completely below the impact threshold for the following roadway segments:

- Bandini Boulevard, Downey Road to Atlantic Boulevard (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one westbound through lane

  - Add one eastbound through lane

- Carmenita Road, Imperial Highway to Orden Drive (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Imperial Highway, Norwalk Boulevard to Bloomfield Avenue (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add through lanes to both directions
- Studebaker Road, Imperial Highway to I-105 (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one northbound through lane
  - Add one southbound through lane
- Carmenita Road, Orden Drive to Rosecrans Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Shoemaker Avenue, Imperial Highway to Foster Road (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add through lanes to both directions
- Rosecrans Avenue, Studebaker Road to Pioneer Boulevard (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Euclid Street, Bastanchury Road to Malvern Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Euclid Street, Malvern Avenue to Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Harbor Boulevard, Imperial Highway (SR 90) to Bastanchury Road (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Harbor Boulevard, Brea Boulevard to Berkeley Avenue (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add through lanes to both directions
- Harbor Boulevard, Berkeley Avenue to Chapman Avenue (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add through lanes to both directions

- Harbor Boulevard, Chapman Avenue to Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Harbor Boulevard, Commonwealth Avenue to Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Harbor Boulevard, south of Orangethorpe Avenue (inclusion of Norwalk/Santa Fe Springs HSR Station Option and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Lemon Street, Commonwealth Avenue to Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one northbound through lane
  - Add one southbound through lane
- Lemon Street, south of Orangethorpe Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one northbound through lane
  - Add one southbound through lane
- Chapman Avenue, Harbor Boulevard to Raymond Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one westbound through lane
  - Add one eastbound through lane
- Chapman Avenue, Raymond Avenue to Acacia Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one westbound through lane
  - Add one eastbound through lane
- Chapman Avenue, Acacia Avenue to State College Boulevard (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add one westbound through lane
  - Add one eastbound through lane
- Chapman Avenue, State College Boulevard to Commonwealth Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- SR 57 northbound Frontage Road, Nutwood Avenue to Chapman Avenue (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):

  - Add through lanes to both directions
- Brea Boulevard, Rolling Hills Drive to Bastanchury Road (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Brea Boulevard, Harbor Boulevard to Bastanchury Road (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions
- Santa Fe Avenue, Malden Avenue to Harbor Boulevard (inclusion of Norwalk/Santa Fe Springs HSR Station Option):
  - Add through lanes to both directions
- Santa Fe Avenue, Harbor Boulevard to Lemon Street (Shared Passenger Track Alternatives A and B, inclusion of Norwalk/Santa Fe Springs HSR Station Option, and inclusion of Fullerton HSR Station Option):
  - Add through lanes to both directions

3.2.7.6 TRAN-MM#6: Prepare Track Construction Work Window Plan

Prior to the commencement of track construction activities, the Authority shall coordinate with freight and passenger rail agencies and operators that maintain service along the project section, including, but not limited to, BNSF and Metrolink, and prepare a Track Construction Work Window Plan for track construction activities along the project corridor. The Track Construction Work Window Plan shall include, but is not limited to, identification of the following:

- Work segments, including the starting and ending mile points for each work segment
- Work windows comprising the days, work segment locations, and times during which track construction activities are anticipated to occur
- Identification of the work windows during which either some or all tracks could be out of service for a limited amount of time
- Identification of the work segments where heavy construction would occur adjacent to existing railroad operations
- Identification of locations where shoofly tracks are anticipated to be required
- Restrictions on track construction activities occurring concurrently in more than two work segments and occurring concurrently in two adjacent work segments
- Limiting speed restrictions to only the minimum required project limits distance and as determined by the host railroad

The Track Construction Work Window Plan shall be submitted for review to the freight and passenger rail agencies and operators with service along the project section prior to commencement of track construction activities. Throughout and following the project design process, the identified work windows may be updated based on coordination with the host railroad's operations department.

3.2.7.7 TRAN-MM#7: Add Lane to State Route 57/Westbound Katella Avenue Southbound On-Ramp

Prior to approval of final improvement plans, the Authority shall coordinate with Caltrans on increasing capacity of the SR 57/westbound Katella Avenue southbound on-ramp and merge area by widening the on-ramp to a two-lane section approximately 400 feet upstream of the on-

ramp gore point and converting the outside travel lane of the merge area to a full on-ramp receiving lane. As part of coordination, the Authority shall apply for and obtain an encroachment permit from Caltrans for work within the SR 57 right-of-way. The new two-lane on-ramp shall be aligned/balanced with the acceleration lane and full on-ramp receiving travel lane, providing adequate capacity and reducing queues. The existing outside travel lane shall be dropped upstream of the on-ramp and gained with the on-ramp. Proper modifications to lane markings and advance warning signs to inform drivers about downstream lane assignments shall also be installed. The foregoing improvements shall be designed and implemented in accordance with the applicable provisions of Caltrans's 2023 Standard Plans and Standard Specifications and presented on the final improvement plans, which shall be subject to review and approval by the Authority and Caltrans.

3.2.7.8 Impacts of Mitigation

Table 3.2-37 summarizes the secondary impacts that would occur from implementation of mitigation measures at the specific intersections and roadway segments presented in Sections 3.2.7.1 through 3.2.7.5. Most of the intersection improvements will take place within the 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 will generally be done within the existing pavement or disturbed graded right-of-way. Temporary traffic, noise, and dust impacts could occur on nearby properties; however, construction at these locations will be limited in duration. Restriping will 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, Section 3.3, and Section 3.4 will be implemented for the intersection improvements and will address the traffic, noise, air quality, and hazardous materials impacts. Additionally, implementation will benefit local circulation in the area by improving traffic operations. Because the intersection improvements will be permanent, these benefits will continue after completion of construction of the Shared Passenger Track Alternatives. Potential secondary impacts 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.

The following were considered in the analysis of potential impacts of the intersection and roadway 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 on substantial minority populations and low-income populations
- Physical impacts on 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 3.2-37 Impacts of Mitigation Measures

Intersection or Roadway Segment	Improvements	Impacts
G44 East St and Lincoln Ave	TRAN-MM#1: Add NB left-turn and SB left-turn protected phases TRAN-MM#1: Add SB right-turn overlap phase TRAN-MM#1: Add WB right-turn overlap phase TRAN-MM#1: Add EB right-turn overlap phase TRAN-MM#2: Convert WB through-right lane to through lane TRAN-MM#4: Add one WB right-turn lane TRAN-MM#4: Add one SB left-turn lane TRAN-MM#4: Add one NB left-turn lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
G84 Downey Rd and Washington Blvd	TRAN-MM#4: Add one WB left-turn and right-turn lanes TRAN-MM#4: Add one EB left-turn and right-turn lane TRAN-MM#4: Add one SB left-turn and right-turn lane TRAN-MM#4: Add one NB left-turn and right-turn lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
G89 Garfield Ave and Washington Blvd	TRAN-MM#2: Convert WB shared through and right-turn lane to an exclusive through lane TRAN-MM#4: Provide one additional SB left-turn lane TRAN-MM#4: Provide one additional WB right-turn lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
G94 Downey Rd and Bandini Blvd	TRAN-MM#4: Add left-turn lanes to the SB approach TRAN-MM#4: Add right-turn lanes to the NB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
G95 Indiana St and Bandini Blvd	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
G96 Bonnie Beach Pl and Bandini Blvd	TRAN-MM#2: Convert SB right-turn lane to left-/right-turn lane TRAN-MM#4: Add two right-turn lanes to the southbound approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations based on census block data.
G97 Ayers Ave and Bandini Blvd	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
G98 Atlantic Blvd/ I-710 NB ramps and Bandini Blvd	TRAN-MM#2: Convert WB right-turn lane (to I-710) to through-right lane TRAN-MM#2: Convert NB through lane (to Atlantic Blvd) to left-turn lane (to I-710) TRAN-MM#4: Add one SB right-turn lane TRAN-MM#4: Add one left-turn lane to the WB approach TRAN-MM#4: Add two left-turn lanes to the NB approach TRAN-MM#4: Add one right-turn lane to the NB and SB approaches	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.
G114 Gage Rd and Telegraph Rd	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
G118 Chapin Rd and Union St	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
G132 Pioneer Blvd and Orr and Day Rd	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
G147 Dodds Ave (east) and Stage Rd	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
G148 Beach Blvd (SR 39) and Stage Rd	TRAN-MM#2: Convert WB through lane to an additional right-turn lane TRAN-MM#2: Convert WB exclusive right-turn lane to a shared through and right-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
G150 Beach Blvd (SR 39) and La Mirada Blvd/ Malvern Ave	TRAN-MM#4: Add right-turn lane to EB lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
G177 Valley View Ave and Alondra Blvd	TRAN-MM#2: Convert SB shared through and right-turn lane to an exclusive through lane TRAN-MM#4: Add one right-turn lane to NB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations based on census block data.
G210 Eastern Ave and Driveway	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
N1 Firestone Blvd and Imperial Hwy	TRAN-MM#2: Convert SB shared through and left-turn lane to an exclusive through and left turn-lane TRAN-MM#2: Convert NB shared through and left-turn lane to an exclusive through and left-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
N7 Norwalk Blvd and Imperial Hwy	TRAN-MM#4: Add two right-turn lanes to the EB approach TRAN-MM#4: Add two left-turn lanes to the WB approach TRAN-MM#4: Add two right-turn lanes to the NB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.
N15 Bloomfield Ave and Imperial Hwy	TRAN-MM#2: Convert shared lane on the WB approach to through lane TRAN-MM#2: Convert through lane on the SB approach to shared through-right lane TRAN-MM#4: Add right-turn lane to NB approach TRAN-MM#4: Add right-turn lane to WB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
N27 I-5 NB on-ramp and Imperial Hwy	TRAN-MM#2: Convert shared lane to right-turn lane on the EB and north approaches TRAN-MM#2: Convert shared through-left lane to exclusive left-turn lane for NB approach	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
N49 Studebaker Rd and Imperial Hwy	TRAN-MM#2: Convert one WB shared through and right-turn lane to an exclusive through and right-turn lane TRAN-MM#4: Add one right-turn lane to the NB approach TRAN-MM#4: Add one left-turn lane for EB and WB approaches	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.
N51 Bloomfield Avenue and Firestone Boulevard (south)	TRAN-MM#2: Convert EB left lane to shared left and shared right lane TRAN-MM#4: Add one right-turn lane to the EB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.
N58 Carmenita Rd and Rosecrans Ave	TRAN-MM#2: Convert one WB shared through and right-turn lane to an exclusive through and right-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial 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 on substantial minority populations and low-income populations based on census block data.
F9 Malden Ave and Chapman Ave	TRAN-MM#3: Install two-phase traffic signal	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
F10 Malden Ave and Commonwealth Ave	TRAN-MM#2: Convert NB shared through and left-turn to an exclusive left-turn lane TRAN-MM#2: Convert exclusive NB right-turn to shared through and right-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F11 Harbor Blvd and Imperial Hwy (SR 90)	TRAN-MM#2: Convert EB shared through and right-turn lane to and exclusive through lane TRAN-MM#2: Convert exclusive NB through and right-turn lanes to a shared through and right-turn lane TRAN-MM#2: Convert exclusive WB through and right-turn lanes to a shared through and right-turn lane TRAN-MM#4: Add two right-turn lanes to EB approach TRAN-MM#4: Add one left-turn lane to the NB and WB approaches	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
F15 Harbor Blvd and Chapman Ave	TRAN-MM#2: Convert EB shared through and right-turn lane to an exclusive through and right-turn lanes TRAN-MM#2: Convert NB shared through and right-turn lane to an exclusive through and right-turn lanes TRAN-MM#4: Add one left-turn lane to the westbound approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F16 Harbor Blvd and Commonwealth Ave	TRAN-MM#2: Convert one through lane on WB, NB, and EB to shared through right lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
F17 Harbor Blvd and Santa Fe Ave	TRAN-MM#2: Convert EB shared through and right-turn lane to an exclusive through and an exclusive left-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F23 Lemon St and Chapman Ave	TRAN-MM#2: Convert EB shared through and right-turn lane to an exclusive through and an exclusive right-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F24 Lemon St and Commonwealth Ave	TRAN-MM#2: Convert SB shared through and right-turn lane to a through lane TRAN-MM#4: Add one right-turn lane to the EB and SB approaches TRAN-MM#4: Add one left-turn lane to the NB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F26 Lemon St and Orangethorpe Ave	TRAN-MM#1: Add SB right-turn overlap phase TRAN-MM#1: Add WB right-turn overlap phase TRAN-MM#1: Add EB right-turn overlap phase TRAN-MM#2: Convert WB left-turn lane to WB through lane TRAN-MM#2: Convert WB through-right lane to right-turn lane TRAN-MM#2: Convert EB through-right lane to through lane TRAN-MM#4: Add one EB right-turn lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
F28 Anaheim Blvd/Lemon St and SR 91 EB ramps	TRAN-MM#2: Convert EB shared through left-turn lane to an exclusive left-turn lane TRAN-MM#2: Convert EB exclusive right-turn lane to a shared through and right-turn lane TRAN-MM#2: Convert NB shared through and right-turn lane to two exclusive right-turn lanes	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F29 Raymond Ave and Chapman Ave	TRAN-MM#2: Convert WB shared through and right-turn lane to an exclusive through and an exclusive right-turn lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F32 State College Blvd and Chapman Ave	TRAN-MM#4: Add one left-turn lane to the EB and NB approaches TRAN-MM#4: Add one right-turn lane to the SB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
F48 SR 57 SB ramps and Nutwood Ave	TRAN-MM#2: Convert SB left-turn lane to a shared through and left-turn lane TRAN-MM#2: Convert SB shared through, left-, right-turn lane to an exclusive right-turn lane TRAN-MM#4: Add one right-turn lane to the EB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
A14 State College Blvd and Orangewood Ave	TRAN-MM#2: Convert EB shared through and right-turn lane to an exclusive through lane	Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
A17 Sunkist St and Cerritos Ave	TRAN-MM#2: Convert SB shared through and right-turn lane to an exclusive through lane TRAN-MM#2: Convert SB shared through and left-turn lane to an exclusive through lane TRAN-MM#4: Add one right-turn lane to the SB approach TRAN-MM#4: Add two left-turn lanes to the SB approach TRAN-MM#4: Add one right-turn lane to the WB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise.
A79 Anaheim Blvd and Cerritos Ave	TRAN-MM#4: Add one left-turn lane to the WB approach TRAN-MM#4: Add one right-turn lane to the NB approach	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Bandini Blvd, Downey Rd to Atlantic Blvd	TRAN-MM#5: Add one WB through lane TRAN-MM#5: Add one EB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
Carmenita Rd, Imperial Hwy to Orden Dr	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
Imperial Hwy, Norwalk Blvd to Bloomfield Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Studebaker Rd, Imperial Hwy to I-105	TRAN-MM#5: Add one NB through lane TRAN-MM#5: Add one SB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
Carmenita Rd, Orden Dr to Rosecrans Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations based on census block data.
Shoemaker Ave, Imperial Hwy to Foster Rd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Rosecrans Ave, Studebaker Rd to Pioneer Blvd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
Euclid St, Bastanchury Rd to Malvern Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Euclid St, Malvern Ave to Commonwealth Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
Harbor Blvd, Imperial Hwy (SR 90) to Bastanchury Rd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Harbor Blvd, Brea Blvd to Berkeley Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
Harbor Blvd, Berkeley Ave to Chapman Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
Harbor Blvd, Chapman Ave to Commonwealth Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Harbor Blvd, Commonwealth Ave to Orangethorpe Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Harbor Blvd, south of Orangethorpe Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Lemon St, Commonwealth Ave to Orangethorpe Ave	TRAN-MM#5: Add one NB through lane TRAN-MM#5: Add one SB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Lemon St, south of Orangethorpe Ave	TRAN-MM#5: Add one NB through lane TRAN-MM#5: Add one SB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
Chapman Ave, Harbor Blvd to Raymond Ave	TRAN-MM#5: Add one WB through lane TRAN-MM#5: Add one EB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Chapman Ave, Raymond Ave to Acacia Ave	TRAN-MM#5: Add one WB through lane TRAN-MM#5: Add one EB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise.
Chapman Ave, Acacia Ave to State College Blvd	TRAN-MM#5: Add one WB through lane TRAN-MM#5: Add one EB through lane	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Chapman Ave, State College Blvd to Commonwealth Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
SR 57 NB Frontage Rd, Nutwood Ave to Chapman Ave	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

Intersection or Roadway Segment	Improvements	Impacts
Brea Blvd, Rolling Hills Dr to Bastanchury Rd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
Brea Blvd, Harbor Blvd to Bastanchury Rd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.
Santa Fe Ave, Malden Ave to Harbor Blvd	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial low-income populations based on census block data.
Santa Fe Ave, Harbor Blvd to Lemon St	TRAN-MM#5: Add through lanes to both directions	Roadway widening may require additional right-of-way and could have direct or indirect impacts. Traffic impacts could include construction-related lane closures or traffic delays. Construction equipment and construction activities could result in impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise. Construction-related air quality, noise, and traffic impacts could occur on substantial minority populations and low-income populations based on census block data.

EB = eastbound; I = Interstate; NB = northbound; SB = southbound; SR = State Route; WB = westbound

Similar to the mitigation measures discussed in Table 3.2-27, **TRAN-MM#7**, which consists of improvements to the SR 57 southbound on-ramp, could result in construction-related lane closures or traffic delays and impacts on nearby commercial/industrial properties related to emissions, fugitive dust, and noise.

3.2.7.9 Early Action Projects

None of the early action projects that are a part of the Shared Passenger Track Alternatives would result in significant impacts that would require mitigation measures. As discussed in Impacts TR-2, TR-3, and TR-4, the permanent roadway modifications would result in impacts on some intersections and roadway segments, but these are not attributable to a specific early action

project, but rather are a result of the rebalancing of traffic volumes under the new permanent conditions throughout the corridor. The new grade separations would result in improved traffic operations at those intersections. The Metrolink station relocations would change traffic patterns in their new locations, as would the BNSF yard modifications, but they would not result in any affected intersections or roadway in their vicinities.

3.2.8 NEPA Impacts Summary

This section summarizes impacts of the Shared Passenger Track Alternatives and compares them to the anticipated impacts of the No Project Alternative.

3.2.8.1 No Project Alternative

Under the No Project Alternative, recent development trends within the project section are anticipated to continue, leading to increased congestion on regional roadways despite planned transportation 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 a few intersections would improve.

3.2.8.2 Shared Passenger Track Alternatives

Construction of the Shared Passenger Track Alternatives would result in the following impacts:

- **Impact TR-1:** During construction, temporary impacts could potentially occur at intersections and roadway segments from temporary road closures, relocations, and modifications during construction. With incorporation of **TR-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#3**, **TR-IAMF#6**, **TR-IAMF#7**, and **TR-IAMF#8**, potential impacts will be avoided.
- **Impact TR-2:** Delays at two signalized intersections could increase permanently, resulting from the permanent modifications to roadways. With incorporation of **TR-IAMF#1** and implementation of **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4**, the potential delays will be reduced.
- **Impact TR-3:** Delays at one unsignalized intersection could increase permanently, resulting from the permanent modifications to roadways. With incorporation of **TR-IAMF#1** and implementation of **TRAN-MM#3**, the potential delays will be reduced.
- **Impact TR-4:** During project construction, there could be permanent changes to V/C ratios at two roadway segments within the project section, resulting from the permanent modifications to roadways. With incorporation of **TR-IAMF#1** and implementation of **TRAN-MM#5**, potential adverse changes to V/C ratios will be reduced.
- **Impact TR-5:** During construction, pedestrian, bicycle, and transit facilities could temporarily be affected. With incorporation of **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13**, potential impacts on transit, pedestrian, and bicycle facilities will be avoided.
- **Impact TR-6:** During construction, there would be permanent changes to pedestrian, bicycle, and transit facilities. With incorporation of **TR-IAMF#12**, potential impacts on transit, pedestrian, and bicycle facilities will be avoided.
- **Impact TR-8:** During construction, freight and passenger rail operations could be temporarily affected. With incorporation of **TR-IAMF#11** and **TR-IAMF#13** and implementation of **TRAN-MM#6**, potential impacts will be reduced.

Operation of the Shared Passenger Track Alternatives would result in the following impacts:

- **Impact TR-10:** During operation, there could be increased delays at some signalized intersections. With implementation of **TRAN-MM#1**, **TRAN-MM#2**, and **TRAN-MM#4**, potential delays at signalized intersections will be reduced.

- **Impact TR-11:** During operation, there could be increased delays at some unsignalized intersections. With implementation of **TRAN-MM#3**, potential delays at unsignalized intersections will be reduced.
- **Impact TR-12:** During operation, there could be changes to V/C ratios at some roadway segments within the project section. With implementation of **TRAN-MM#5**, potential adverse changes to V/C ratios will be reduced.
- **Impact TR-13:** During operation, there could be continuous permanent impacts on pedestrian, bicycle, and transit facilities. With incorporation of **TR-IAMF#12**, potential impacts will be avoided.
- **Impact TR-14:** During operation, there could be queue length increases along one freeway on-ramp. With implementation of **TRAN-MM#7**, sufficient new capacity will be provided at the affected freeway on-ramp.
- **Impact TR-15:** During operation, freight and passenger rail system capacity could be permanently affected. With incorporation of **TR-IAMF#13**, potential impacts will be avoided.

The Shared Passenger Track Alternatives would result in the following beneficial impacts:

- **Impact TR-15:** During operation, the installation of five new full grade separations would improve overall efficiency along the corridor and benefit vehicular mobility and transit service. Modifications to tracks at Commerce Yard and Fullerton Junction would separate freight and passenger rail trains.

Table 3.2-38 provides a comparison of the potential impacts of the project alternatives followed by a summary of the impacts.

Table 3.2-38 Comparison of Project Alternative Impacts on Transportation

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-1: Temporary Impacts on Intersections, Roadways, and Freeways from Temporary Road Closures, Relocations, and Modifications During Construction	Temporary road closures and realignments could result in increases in travel times, delays, and inconvenience to the traveling public. However, detours and alternate routes would be preserved during construction, and the CTP would maintain traffic flow on major roadways, freeways, and intersections. Other project features would include identification of off-street parking areas for construction, limitation of construction material deliveries, use of truck routes, and maintaining roadway capacity during special events.	Similar to Shared Passenger Track Alternative A. Construction of the 15th Street LMF would result in slightly different temporary impacts in the vicinity of the LMF site.	Similar to the Shared Passenger Track Alternatives within station area. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option could result in slightly different shifts in traffic in the vicinity of the HSR station option site to build the additional elements.	Similar to the Shared Passenger Track Alternatives within station area. Inclusion of the Fullerton HSR Station Option could result in slightly different shifts in traffic in the vicinity of the HSR station option site to build the additional elements.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A
Impact TR-2: Permanent Impacts on Signalized Intersections from Construction of Permanent Roadway Modifications	Permanent roadway closures and roadway modifications associated with project construction would cause shifts in travel patterns and result in delays at two signalized intersections that exceed the threshold.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives.	Same as the Shared Passenger Track Alternatives.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#1, TRAN-MM#2, TRAN-MM#4	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-3: Permanent Impacts on Unsignalized Intersections from Construction of Permanent Roadway Modifications	Permanent roadway closures and roadway modifications associated with project construction would cause shifts in travel patterns and result in delays at one unsignalized intersection that exceed the threshold.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives.	Same as the Shared Passenger Track Alternatives.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#3	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-4: Permanent Impacts on Roadway Segments from Construction of Permanent Roadway Modifications	Permanent roadway closures and roadway modifications associated with project construction would cause shifts in travel patterns and result in delays at two roadway segments that exceed the threshold.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives.	Same as the Shared Passenger Track Alternatives.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#5	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-5: Temporary Impacts on Pedestrian, Bicycle, and Transit Facilities During Construction	Construction would require temporary changes to pedestrian, bicycle, and transit facilities. The project would be designed to maintain safe and accessible facilities, but construction would affect the performance of several bicycle paths. However, the CTP will include methods to minimize construction traffic. In addition, the contractor will prepare specific Construction Management Plans to minimize construction impacts on bicycles and pedestrians and to maintain transit access during construction. The contractor will also provide a technical memorandum that describes how pedestrian and bicycle accessibility will be maintained across the HSR corridor. The Authority will also coordinate with transit agencies, so that bus routes serving the existing and relocated passenger rail stations will be maintained and rerouted during construction.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option could result in slightly different shifts in traffic in the vicinity of the HSR station option site. Temporary closures and detours described in Table 3.2-20 could occur for a longer duration to build the HSR station elements.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Fullerton HSR Station Option could result in slightly different shifts in traffic in the vicinity of the HSR station option site. Temporary closures and detours described in Table 3.2-20 could occur for a longer duration to build the HSR station elements.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-6: Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities from Construction of Permanent Roadway Modifications	Shared Passenger Track Alternative A would not permanently reconfigure or modify any existing or preclude any planned bicycle facilities. Project construction would permanently modify roadways, including fully grade separating five existing at-grade crossings with the roadway lowered under a new railroad bridge. At these locations, the pedestrian and bicycle facilities would be rebuilt during construction to ensure that safe and accessible connections are provided. Transit lines at these locations would experience an improvement in service. To maintain pedestrian and bicycle access, project design plans will include specifications for vehicle lanes, passenger loading zones, sidewalks, crosswalks, bike lanes, bus stops, parking, and intersection controls.	Similar to Shared Passenger Track Alternative A. A portion of 16th Street would be permanently closed during construction of the 15th Street LMF, but no transit routes operate within the area and all reconstructed roadways would replace all bicycle and pedestrian facilities on completion of construction.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in minor differences in permanent roadway modifications (new signalized intersection), but would not result in different impacts.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Fullerton HSR Station Option would result in minor differences in the permanent roadway modifications (slightly different changes along the Walnut Avenue realignment), but would not result in different LOS impacts.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A
Impact TR-7: Permanent Impacts on Freeway Mainline Segments and Ramps During Construction	Project construction would not permanently modify any freeway facilities, and there would not be any impacts.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives.	Same as the Shared Passenger Track Alternatives.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-8: Temporary Impacts on Freight and Passenger Rail Operations During Construction	Project construction would temporarily disrupt freight and passenger rail service where tracks would be modified. With the future High Desert Operational Efficiency Project, freight trains would be staged outside of the LOSSAN Corridor, minimizing delay for all passenger and freight operators in the corridor. The Authority would also work closely with all agencies that provide services within the corridor and specific measures would be identified in the Construction Management Plans to minimize construction traffic, provide for traffic controls, and establish construction truck routes. Nonetheless, because specific work windows for track construction activities have not yet been defined, the avoidance or minimization of potential disruptions to freight and passenger rail services cannot be ensured at this time.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives within station area.	Same as the Shared Passenger Track Alternatives within station area.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#6	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-9: Continuous Permanent Impacts on Vehicle Miles Traveled During Operation	The project would result in an annual statewide reduction of 1,867,286,692 vehicle miles traveled, because it would shift a portion of vehicular traffic to rail use.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in an annual statewide reduction of 438,866,576 vehicle miles traveled.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Fullerton HSR Station Option would result in an annual statewide reduction of 475,056,073 vehicle miles traveled.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-10: Continuous Permanent Impacts on Signalized Intersections During Operations	The project would result in increases in travel times, delays, and inconvenience to the traveling public at 20 signalized intersections.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in increases in travel times, delays, and inconvenience to the traveling public at an additional 11 signalized intersections, for a total of 31.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Fullerton HSR Station Option would result in increases in travel times, delays, and inconvenience to the traveling public at an additional three signalized intersections, for a total of 23.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#1, TRAN-MM#2, TRAN-MM#4	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-11: Continuous Permanent Impacts on Unsignalized Intersections During Operations	The project would result in increases in travel times, delays, and inconvenience to the traveling public at two unsignalized intersections.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in increases in travel times, delays, and inconvenience to the traveling public at eight unsignalized intersections.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Fullerton HSR Station Option would result in impacts at the same unsignalized intersections as the Shared Passenger Track Alternatives; however, the delays during the AM peak period would be slightly greater.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#3	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-12: Continuous Permanent Impacts on Roadway Segments during Operations	The project will lead to higher volume-to-capacity ratios along 20 roadway segments because of traffic shift and rerouting.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would result in higher volume-to-capacity ratios along 26 roadway segments because of traffic shift and rerouting.	Similar to the Shared Passenger Track Alternatives. Inclusion of the Fullerton HSR Station Option would result in higher volume-to-capacity ratios along 21 roadway segments because of traffic shift and rerouting.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#5	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusion Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option	
									Norwalk/Santa Fe Springs	Fullerton
Impact TR-13: Continuous Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities during Operations	Operations would introduce nonmotorized and transit trips around station areas (approximately 350 nonmotorized trips and 668 bus passengers during peak hours in Horizon Year 2040, respectively). However, the project would be designed to maintain or enhance pedestrian and bicycle access and would not affect transit service. In addition, the Authority will work closely with all agencies that provide bus service to existing and planned rail stations to define roles and responsibilities, inclusive of operational and maintenance responsibilities, to prevent effects to existing and planned bus routes servicing rail stations within the project corridor.	Same as Shared Passenger Track Alternative A.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Norwalk/Santa Fe Springs HSR Station Option would generate approximately 158 additional nonmotorized trips and 164 additional bus passengers per day during peak hours in Horizon Year 2040, respectively.	Similar to the Shared Passenger Track Alternatives within the station area. Inclusion of the Fullerton HSR Station Option would generate approximately 283 additional nonmotorized trips and 290 additional bus passengers per day during peak hours in Horizon Year 2040, respectively.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A
Impact TR-14: Continuous Permanent Impacts on Freeway Mainline Segments and Ramps during Operations	During operations, because of increases in delays and travel times at intersections and nearby road segments, motorists may use freeways, which would result in one on-ramp queue length exceeding the transportation impact thresholds.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives.	Same as the Shared Passenger Track Alternatives.	Adverse effect (all alternatives and HSR station options)	TRAN-MM#7	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact TR-15: Continuous Permanent Impacts on Freight Rail and Passenger Rail System Capacity During Operations	Operation of the project would not affect freight or passenger rail capacity or operations or result in secondary or growth-inducing impacts. The Authority will further define the roles and responsibilities within the shared corridor of freight and passenger rail agencies, including operational and maintenance responsibilities.	Same as Shared Passenger Track Alternative A.	Same as the Shared Passenger Track Alternatives within the station area.	Same as the Shared Passenger Track Alternatives within the station area.	No adverse effect (all alternatives and HSR station options)	No mitigation needed	N/A	N/A	N/A	N/A

Authority = California High-Speed Rail Authority; CTP = construction transportation plan; HSR = high-speed rail; LMF = light maintenance facility; LOS = level of service; LOSSAN Corridor = Los Angeles – San Diego – San Luis Obispo Rail Corridor; N/A = not applicable; NEPA = National Environmental Policy Act

3.2.9 CEQA Significance Conclusions

As described in Section 3.2.4.5, Method for Determining Significance Under CEQA, the impacts of project actions under CEQA are evaluated against thresholds to determine whether a project action would result in no impact, a less-than-significant impact, or a significant impact. Table 3.2-39 provides summaries of the CEQA determinations of significance for construction and operational impacts for the project. Although mitigation measures to address adverse effects are identified in Section 3.2.6.3, such measures serve to address impacts related to LOS, which is not considered a significant impact under CEQA. Therefore, **TRAN-MM#1** through **TRAN-MM#5** and **TRAN-MM#6** are not included below. Refer to Table 3.2-38 for a summary of the mitigation measures that would apply to the LOS impacts.

Table 3.2-39 CEQA Significance Conclusions for Transportation

Impact	Impact Description and Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Construction				
Impact TR-1: Temporary Impacts on Intersections, Roadways, and Freeways from Temporary Road Closures, Relocations, and Modifications During Construction	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-2: Permanent Impacts on Signalized Intersections from Construction of Permanent Roadway Modifications	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-3: Permanent Impacts on Unsignalized Intersections from Construction of Permanent Roadway Modifications	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-4: Permanent Impacts on Roadway Segments from Construction of Permanent Roadway Modifications	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-5: Temporary Impacts on Pedestrian, Bicycle, and Transit Facilities During Construction	Less than significant. Construction would not result in a conflict in adopted plans, or a material decrease in the performance of pedestrian, bicycle, and transit facilities.	No mitigation measures are required	Not applicable	All alternatives and HSR station options

Impact	Impact Description and Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Impact TR-6: Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities from Construction of Permanent Roadway Modifications	Less than significant. All pedestrian and bicycle facilities would be rebuilt during construction to ensure that safe and accessible connections are provided. Transit lines at newly grade-separated locations would experience an improvement in service.	No mitigation measures are required	Not applicable	All alternatives and HSR station options
Impact TR-7: Permanent Impacts on Freeway Mainline Segments and Ramps During Construction	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-8: Temporary Impacts on Freight and Passenger Rail Operations During Construction	Significant for both project alternatives and HSR station options. Project construction would temporarily disrupt freight and passenger rail service where tracks would be modified. Because specific work windows for track construction activities have not yet been defined, the avoidance or minimization of potential disruptions to freight and passenger rail services cannot be ensured at this time.	TRAN-MM#6	Less than significant	All alternatives and HSR station options
Operations				
Impact TR-9: Continuous Permanent Impacts on Vehicle Miles Traveled During Operation	Less than significant. 2040 Plus Project conditions 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.	No mitigation measures are required	Not applicable	All alternatives and HSR station options
Impact TR-10: Continuous Permanent Impacts on Signalized Intersections During Operations	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable

Impact	Impact Description and Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Impact TR-11: Continuous Permanent Impacts on Unsignalized Intersections During Operations	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-12: Continuous Permanent Impacts on Roadway Segments During Operations	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-13: Continuous Permanent Impacts on Pedestrian, Bicycle, and Transit Facilities During Operations	Less than significant. The project would not conflict with a transit, bicycle, or pedestrian policy, plan, or facility or decrease performance or safety of these modes.	No mitigation measures are required	Not applicable	All alternatives and HSR station options
Impact TR-14: Continuous Permanent Impacts on Freeway Mainline Segments and Ramps During Operations	This is not considered a significant impact under CEQA. Refer to Table 3.2-38 for a summary of project effects related to automobile delay, as measured by LOS.	Not applicable	Not applicable	Not applicable
Impact TR-15: Continuous Permanent Impacts on Freight Rail and Passenger Rail System Capacity During Operations	Less than significant. Operation of the project would not affect capacity or operations for freight or passenger rail or result in secondary impacts.	No mitigation measures are required	Less than significant	All alternatives and options

CEQA = California Environmental Quality Act; LOS = level of service; VMT = vehicle miles traveled