Los Angeles County
Metropolitan Transportation Authority

West Santa Ana Branch Transit Corridor

Draft EIS/EIR Chapter 3: Transportation

Metro

WEST SANTA ANA BRANCH TRANSIT CORRIDOR PROJECT

Draft EIS/EIR Chapter 3: Transportation

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Draft Environmental Impact Statement/ Environmental Impact Report

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ACRONYMS AND ABBREVIATIONS

Acronyms	Definitions
ADA	Americans with Disabilities Act
BRT	bus rapid transit
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CIDH	cast-in-drilled-hole
CPUC	California Public Utilities Commission
DASH	Downtown Area Short Hop
EIR	environmental impact report
EIS	environmental impact statement
FTA	Federal Transit Administration
HRT	heavy rail transit
I-	Interstate
LA	Los Angeles
LADOT	Los Angeles Department of Transportation
LAUS	Los Angeles Union Station
LOS	level-of-service
LRT	light rail transit
LRTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MSF	maintenance and storage facility
MWD	Metropolitan Water District
NEPA	National Environmental Policy Act
NTS	Norwalk Transit System
OPR	California Office of Planning and Research
PEROW	Pacific Electric Right-of-Way
ROW	right-of-way
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SCAG	Southern California Association of Governments
SR-	State Route

Acronyms	Definitions
TBM	tunnel boring machine
TMP	Transportation Management Plan
TRB	Transportation Research Board
US-	U.S. Highway
USDOT	U.S. Department of Transportation
VMT	vehicle miles traveled
WSAB	West Santa Ana Branch

3 TRANSPORTATION

This chapter presents the existing transportation conditions in the Study Area and potential impacts of the Build Alternatives on the multimodal transportation system. Specifically, the following components of the transportation system are included: traffic on the freeway system, local roads, and intersections; transit; pedestrian and bicycle facilities (referred to as active transportation); and parking. The Study Area for this analysis includes the transportation facilities near the proposed light rail transit (LRT) tracks and stations.

Detailed information regarding the technical analyses is provided in the *West Santa Ana Branch Transit Corridor Project Final Transportation Impact Analysis Report* (Los Angeles Metropolitan Transportation Authority [Metro] 2021s), included as Appendix D of this Draft Environmental Impact Statement/Environmental Impact Report).

Based on the current impacts of the recent social response to the COVID-19 virus and the resulting decline in travel demand, at this time, it is not possible to predict future changes to the project Purpose and Need, schedule, and traffic operation impacts that may result from a COVID-19 response of an unpredictable nature and length. Should significant changes in the planning assumptions, project schedule, project scope, or surrounding project environment result because of a prolonged COVID-19 response, the Federal Transit Administration (FTA) and Metro will consider additional environmental evaluation and public input consistent with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

3.1 Regulatory Setting

This section summarizes federal, state, and regional/local regulations applicable to the transportation system assessment for the West Santa Ana Branch (WSAB) Transit Corridor Project.

3.1.1 Federal

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 Code of Federal Regulations Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code 794). The Federal Highway Administration has enacted regulations for the implementation of the Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including transportation enhancement activities. NEPA does not include specific guidance or direction with respect to the evaluation of alternatives and their relative effects on traffic and the transportation system. Guidance information was reviewed from FTA publications on transportation impact assessments on transit operation, traffic circulation, and parking. In addition, the Federal Highway Administration guidance regarding safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652) was considered. This guidance further directs that the special needs of the elderly and persons with disabilities must be considered in all federal-aid projects that include pedestrian facilities.

3.1.2 State

The CEQA of 1969, as amended, established environmental guidelines for the analysis and the threshold-based determinations regarding potentially significant impacts. CEQA provides general guidance regarding transportation impacts, including assessing vehicle miles traveled (VMT). The applicable significance criteria are developed using guidance provided in Appendix G of the *CEQA Guidelines* (California Code of Regulations Title 14 §15000 et seq.) and relevant local policies are discussed in Section 3.1.3 of this chapter.

Assembly Bill 1358, the Complete Streets Act, requires cities and counties to include Complete Streets policies as part of their general plans so that roadways are designed to safely accommodate all users, including bicyclists, pedestrians, transit riders, children, older people, and people with disabilities, as well as motorists. Any substantive revision of the circulation element in the general plan of a California local government will include Complete Streets provisions.

Senate Bill 743, which was codified in Public Resources Code Section 21099, required the California Office of Planning and Research (OPR) to establish new *CEQA Guidelines* "for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." The new criteria were required to move away from vehicle delay and level-of-service (LOS) and move toward more multimodal concepts "that may include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated."

In 2018, Section 15064.3 was added to the *CEQA Guidelines* to reflect the provisions of Senate Bill 743. The section addresses both land use and transportation projects, and broadly describes the methodology, including the potential for qualitative analysis, used to assess VMT. The overall guidance for transportation projects is that they are presumed to have a less-than-significant project impact if they reduce VMT (*CEQA Guidelines*, §15064.3(b)(2)). Agencies are given "broad discretion" to select the methodology for analysis, or even apply a qualitative approach. As described in Section 1.5.6 of the Transportation Impact Analysis Report (Appendix D), the analysis and impact determinations have used a VMT-based approach.

The OPR prepared a 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*. The guidance addresses a variety of projects, with the recognition that the approach for evaluating impacts is necessarily project-specific. For transit projects, the guidance document notes that "transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation" (OPR 2018). However, it also notes Code Section 21099, which dictates that the implementation of VMT analysis "does not relieve a public agency of the requirement to analyze… any other [potentially significant] impact associated with transportation impacts." OPR's guidance has been implemented in this Draft EIS/EIR by conducting CEQA analysis consistent with the December CEQA guidelines and focusing on a VMT-based assessment of potential impacts.

The California Department of Transportation (Caltrans) has jurisdiction over the construction and maintenance of state highways and freeways in the Study Area. These state highways and freeways include Interstate (I-) 5, I-10, I-105, I-605, I-710, State Route (SR)-91, and U.S. (US-) Highway 101. Caltrans also coordinates several statewide transportation programs that directly impact the circulation system in the region. These include the State

Transportation Improvement Program, the Congestion and Mitigation and Air Quality Program, and the Traffic Congestion Relief Program.

3.1.3 Regional/Local

Relevant planning documents include regional transportation plans prepared by the Southern California Association of Governments (SCAG) and Metro, as well as general plans and specific plans for each affected jurisdiction in the Study Area. The general plans, circulation elements, and corresponding specific plans for Los Angeles (LA) County and the cities in the Study Area provide the local regulatory framework and policies related to transportation and traffic issues.

The *Regional Transportation Improvement Plan* (RTIP) is a capital listing of all transportation projects proposed over a six-year period for the SCAG region. The SCAG region encompasses six counties (i.e., Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities. The projects include highway improvements; transit, rail, and bus facilities; high-occupancy vehicle lanes; signal synchronization; intersection improvements; and freeway ramps. In the SCAG region, an RTIP update is produced every other year on an even-year cycle. The RTIP is prepared to implement projects and programs listed in the *Regional Transportation Plan* (RTP) and developed to comply with state and federal requirements. Projects that are anticipated to receive federal funding or are subject to a federally required action are added to the Federal Transportation Improvement Program. This includes regionally significant transportation projects where approvals from federal funding agencies are required, regardless of funding sources. County transportation commissions propose county projects from city and local submittals using the current RTP policies, programs, and projects as a guide. Locally prioritized project lists are forwarded to SCAG for review. From this list, SCAG develops the RTIP based on consistency with the current RTP, inter-county connectivity, financial constraints, and air quality conformity satisfaction. Identified RTIP/SCAG roadway improvements were assumed in the analysis and modeling of future scenarios.

Each jurisdiction has different approaches for identifying transportation (circulation) deficiencies. Discussion of the coordinated and consistent approach for analysis across these jurisdictions is included in Section 3.2.

3.2 Methodology

This section provides the methodology, impact criteria, and thresholds used to determine impacts to the transportation system resulting from the Build Alternatives, including the design options and maintenance and storage facility (MSF) site options. To provide for a comprehensive assessment of potential traffic, transportation, and mobility effects, and impacts under NEPA and CEQA, the methodology described in Section 3.1 was established. Section 3.2.6 describes the focused analysis that was applied to the CEQA evaluation. A more detailed discussion on the methodology is provided in Section 1.5 of the Transportation Impact Analysis Report (Appendix D).

Table 3.1 describes the types of potential impacts and the proposed approach for assessing these impacts. More details on the approach for assessing impacts for each element are provided in Sections 3.2.1 through 3.2.7.

Table 3.1. Transportation Analysis Approach

Transportation Element	Potential Impact	Analysis Approach
At-grade crossings (see Section 3.2.1 for more details)	Operational impacts due to new at-grade crossings: affects intersection operations where tracks are through/adjacent to existing intersections and where queues from mid-block rail crossings build up when gates are down.	Assess intersection operations with gate down time, new signal timing, and changes in geometry. Estimate queues from mid-block crossings and their effect on nearby intersections.
Road network changes (see Section 3.2.1 for more details)	Street/lane closures or roadway realignments due to new crossings or grade separation.	Assess intersection operations due to potentially rerouted traffic; qualitative assessment of impacts associated with changes in access.
Regional travel (see Section 3.2.5 for more details)	Changes to VMT or VHT.	Evaluate VMT/VHT changes at the regional, county, and Study Area levels using the regional travel demand model.
Transit station and MSF travel demand (see Section 3.2.2 for more details)	Additional traffic demand and congestion on local roads near new stations and MSF.	Assess intersection operations using projected future traffic volumes for the No Build and Build Alternatives.
Bus-rail interface (see Section 3.2.2 for more details)	Changes to bus access at rail stations, including impacts to existing routes.	Assess changes to local service and utilization.
Bike and pedestrian (see Section 3.2.3 for more details)	Access and operations for bike/pedestrian facilities.	Qualitative.
Parking (see Section 3.2.4 for more details)	On-street parking impacts due to physical changes to existing on- and off-street parking to accommodate the proposed LRT alignment, stations, and other project elements (e.g., TPSSs). Spillover parking resulting from unmet transit parking demand at proposed stations where transit parking would be provided. Indirect effects, including traffic circulation/delay and vehicle emissions.	Comparison of remaining parking supply against surveyed parking utilization or parking demand.

Transportation Element	Potential Impact	Analysis Approach
Construction traffic/transit/ active transportation/parking and underground or overhead rail lines (see Section 3.2.7 for more details)	Workers and equipment accessing the construction site would increase traffic and require parking. Transportation system effects associated with aerial (columns) or underground (cut and cover) construction of rail lines could result in lane or roadway closures, which would affect vehicular traffic, and transit services. Construction could also result in closure of bicycle and pedestrian facilities.	Qualitative, with high-level descriptions of number of workers relative to total traffic volume, and descriptions of Study Area and affected cross-sections. Discuss temporary changes to traffic circulation, haul truck routes, parking, and transit detours during construction.
Freight track realignment (see Section 3.2.7)	Realignment of freight tracks due to the new LRT tracks.	Qualitative, with high-level descriptions of the freight tracks realignment.

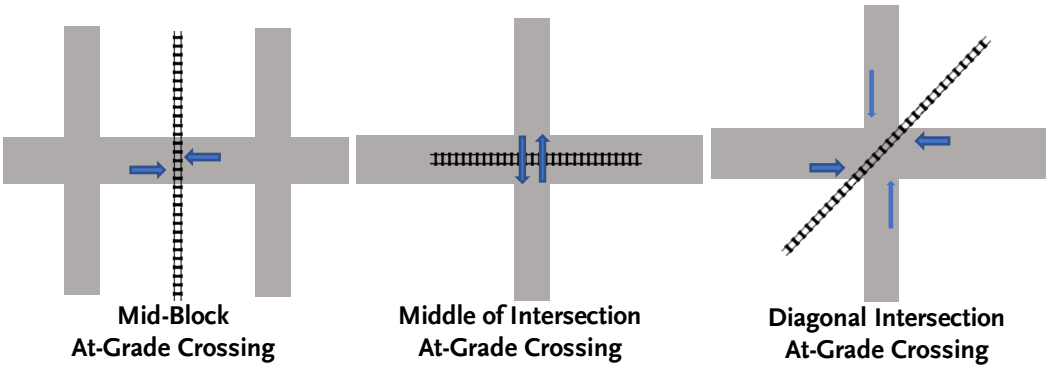
Source: Metro 2021s
Notes: LRT = light rail transit; MSF = maintenance and storage facility; TPSS = traction power substation; VHT = vehicle hours traveled; VMT = vehicle miles traveled

The following subsections provide details on the methodology for each element of the transportation system.

3.2.1 Analysis Approach: Traffic Operations

At-grade rail crossings (where a street crosses railroad tracks at the same level) have the potential for affecting traffic operations on arterials and local streets. New crossings would be located near or at existing intersections. When the train crossing gates are down, vehicles wanting to cross the tracks would be forced to stop, increasing delay for vehicles and the potential for queues to form, affecting adjacent and nearby intersections. Freight trains currently operate through some existing at-grade crossings; however, these trains were not incorporated into the traffic analysis due to their infrequent occurrence. Figure 3-1 illustrates three common configurations of at-grade crossings and the effects on intersections.

Figure 3-1. At-Grade Crossing Configurations at or near Intersections



Source: Metro 2021s

The proposed horizon year (2042)[1] operating plans for the Build Alternatives assume 12 train crossings per direction in the peak hour, equating to 24 total train crossings per hour for both directions. With this schedule, a train from each direction would cross at each at-grade crossing every 5 minutes, so there would be a train crossing from either direction every 2.5 minutes. Alternative 2 is the only alternative to have 2.5-minute headways proposed during 1 hour of weekday peak periods for the section between the 7th St/Metro Center Station and the Slauson/A Line Station. However, the section is either aerial or underground. Per Metro's grade crossing safety policy, gate down times are determined based on the train crossing configuration. Specifically, for mid-block train crossings, gates would be down 45 seconds. For middle or diagonal intersection train crossings, gates would be down 30 seconds.

There are hundreds of signalized intersections, and even more unsignalized intersections, within the Study Area. The focus of this impact analysis is on those intersections that could be affected by the Project, referred to as the Affected Area for traffic operations. A preliminary screening was conducted to determine the key intersections where impacts could occur.

The screening process assessed the intersections in the Study Area in terms of potential effects based on location (proximity to a rail crossing and/or station) and traffic volume to identify the intersections within the Affected Area for traffic operations. Assessments were based on field reviews, preliminary engineering plans, and professional judgment. The assessments included:

- The potential effects at each rail crossing, which would be used to determine the potential impact to the surrounding intersections. The trains would result in vehicle queues and the potential to disrupt traffic operations at nearby intersections.
- The potential effects from stations, where high demand would result in higher traffic volumes from station trips.
- Proximity to a rail crossing and/or station.
- Overall traffic volumes (intersections with higher volumes are more likely to have an impact).

The specific steps for the traffic analysis of at-grade crossings are described below; these steps also apply to the traffic analysis conducted for intersections that were in proximity to roadway changes and transit stations (described later in this section and in Section 3.2.2, respectively):

- **Assess existing operations:** The evaluation of existing operations starts by considering geometry, traffic volumes, and signal timing. The Synchro software is used to evaluate traffic operations using two performance measures (Synchro is a macroscopic traffic operations analysis and optimization software application used to measure intersection performance):
  - LOS based on average delay per vehicle in the peak hours (further information on LOS is discussed later in this section).
  - Vehicle queue lengths vary with each signal cycle. 95th percentile queues are among the longest—the queues that are expected in only 1 out of 20 cycles. Evaluations were conducted for the AM and PM peak hour on typical weekdays, consistent with the traffic volumes collected in the field.

[1] 2042 is the horizon year based on FTA standard practice for a 25-year planning horizon.

- **Develop Future No Build traffic volumes:** Future year 2042 traffic volumes were derived by applying growth rates obtained from the Metro Travel Demand Model (adapted from SCAG 2016a) to traffic volumes collected in late 2016 and throughout 2017 for the Project. Traffic signal timing from existing conditions were retained, with updated times for the green signal for each intersection turning movement. The times were developed using the traffic signal timing optimization function from Synchro, which is consistent with how traffic signals operate in the field.
- **Evaluate No Build traffic operations at each intersection:** Performance measures include LOS and 95th percentile queues.
- **Project Future Build traffic volumes:** The new LRT could increase or decrease station area traffic volumes for the following reasons:
  - Traffic volumes could decrease because of a shift from automobile to transit. Because mode shifts occur at a regional level, to be conservative, no changes were made to traffic volumes due to increased transit use for local intersection analysis.
  - Traffic volumes could increase or decrease because of changes to the local road network to accommodate new train service (e.g., where tracks would conflict with existing streets, converting a two-way street to a one-way street). More details on the types of road network changes are provided later in this section.
  - Traffic volumes could increase because of new park-and-ride or kiss-and-ride (i.e., passenger drop-off) facilities at proposed stations. See Section 3.2.2 for more details.
- **Evaluate Build traffic operations at each intersection:** The evaluation considers changes to traffic volumes (as described in the bullet above), roadway geometry, and performance measures, which include LOS and 95th percentile queues.
- **Assess impacts:** Section 3.1.1 discusses impact criteria when a degradation in LOS associated with operation of the Build Alternative is deemed an impact. Section 3.3.3 includes a discussion of both LOS/delay and queue impacts.

Roadway network changes would be needed to accommodate the Project. These changes include closures of entire street segments, reductions in the number of lanes, closures of nonsignalized railroad crossings, and/or prohibition of left turns for trucks at select intersections where such movements are currently permitted. Closures or reconfigurations may be due to new at-grade crossings or columns that support the aerial alignment and stations. These are described in Table 3.51. A quantitative impact assessment was conducted using LOS analysis, as described in the next paragraph and Table 3.2. In addition, qualitative assessments of impacts associated with changes in access are also provided (e.g., assessment of the effects on traffic circulation and lane configuration changes).

LOS is the most common measure used to evaluate roadway performance, but other measures can be used to assess the wide range of roadway types, time periods, and modes that use each facility. The Transportation Impact Analysis Report (Appendix D) includes a detailed assessment of the potential ways to evaluate performance on the roadway network. Intersection LOS was determined to be the most appropriate methodology.

LOS is a standard means of evaluating operations at intersections and other roadway elements. LOS analysis is based on delay at the intersections and requires evaluation of traffic volumes, geometry, and traffic control (e.g., stop signs or traffic signals). Intersection LOS is

determined using the analysis methodologies described in the *Highway Capacity Manual* (Transportation Research Board [TRB] 2010). It is based on six defined levels (A through F), which describe conditions ranging from "ideal" to "worst." Table 3.2 summarizes the *Highway Capacity Manual* intersection LOS criteria.

The Study Area is comprised of multiple jurisdictions. Therefore, methodologies were obtained from cities' general plans or transportation/traffic study guidelines in an effort to determine a threshold for adverse effects. The results of this review, including the evaluation measures and impact criteria, are included in Table 1.3 in the Transportation Impact Analysis Report (Appendix D) (Metro 2021s). A review of traffic studies was completed for jurisdictions within the Study Area was undertaken to determine what LOS thresholds have been used for multimodal projects. In general, the specific thresholds and criteria used varied. The review determined that there is not one consistent methodology, impact determination, and LOS threshold in all the jurisdictions. Therefore, to provide a consistent approach in determining impacts throughout the Affected Area for traffic operations, Los Angeles Department of Transportation's (LADOT) 2016 *Transportation Impact Study Guidelines* (LADOT 2016) were used for the traffic analyses for all Build Alternatives and the MSF site options. An adverse impact was identified at an intersection if the following occurred with implementation of a Build Alternative:

- The intersection has a LOS of C and the Build Alternative would increase average delay by 6.0 or more seconds over the No Build Alternative.
- The intersection has a LOS of D and the Build Alternative would increase average delay by 4.0 or more seconds over the No Build Alternative.
- The intersection has a LOS of E or F and the Build Alternative would increase average delay by 2.5 or more seconds over the No Build Alternative.

Table 3.2. Intersection Level-of-Service Criteria for Signalized, All-Way Stop, and Two-Way Stop Intersections

Level-of-Service	Description of Operation	Signalized Intersection Delay (seconds/vehicle)	All-Way Stop or Two-Way Stop Intersection Delay (seconds/vehicle)
A	Describes primarily free-flow conditions at average travel speeds. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delays at intersections are minimal.	⩽ 10	0-10
B	Represents reasonably unimpeded operations at average travel speeds. The ability to maneuver in the traffic stream is slightly restricted and delays are not bothersome.	> 10-20	> 10-15
C	Represents stable operations; however, ability to change lanes and maneuver may be more restricted than LOS B and longer queues are experienced at intersections.	> 20-35	> 15-25
D	Congestion occurs and a small change in volumes increases delays substantially.	> 35-55	> 25-35

Level-of-Service	Description of Operation	Signalized Intersection Delay (seconds/vehicle)	All-Way Stop or Two-Way Stop Intersection Delay (seconds/vehicle)
E	Severe congestion occurs with extensive delays and low travel speeds.	> 55-80	> 35-50
F	Characterizes arterial flow at extremely low speeds and severe intersection congestion, with long delays and extensive queuing.	> 80	> 50

Source: TRB 2010
Notes: > = greater than; ≤ = less than or equal to; LOS = level-of-service

There may also be potential impacts related to queuing, particularly at intersections near new at-grade crossings, as described in Section 3.2.1. There are no formal criteria for evaluating queuing, especially because queues would be highly variable depending on how frequently trains cross an at-grade crossing. Therefore, the assessment of queuing impacts identified locations where the projected 95th percentile queue would affect intersection operations, typically resulting when a queue at a crossing extends back to an adjacent intersection.

The evaluation for MSF site options focused on the number of vehicle trips the facility generated. Due the uniqueness of these facilities, the trip rate from an existing Metro LRT maintenance facility was used to determine the trips the maintenance facilities would generate. The number of trips was used to determine whether an intersection performance analysis (with and without the MSF) needed to be conducted. The LADOT 2016 *Transportation Impact Study Guidelines* (LADOT 2016), which are the guidelines referenced for the purposes of NEPA traffic analysis as further discussed on the Transportation Impact Analysis Report (Appendix D), set the threshold for new developments at 43 vehicle trips during the AM/PM peak hours. The Project crosses multiple jurisdictions, and even though each has their own guidelines, not all guidelines cite specific impact thresholds for assessment of impacts at intersections. Therefore, the methodology was applied to maintain a consistent approach for the Study Area. The qualitative assessment of the surrounding area was conducted to consider the nearby local street network, vehicle traffic activity, and truck routes to the facility.

3.2.2 Analysis Approach: Transit

Increases in local traffic would be expected to occur around proposed transit stations. The Metro Travel Demand Model (adapted from SCAG 2016a) provided projections of the number of new vehicle trips associated with these stations. The broader Study Area was analyzed, because transit changes affect transit service to a greater area than the Affected Area (typically defined as the immediately adjacent area along the alignment). Particularly at the south end of the Study Area, there would be an increase in trips associated with park-and-ride and kiss-and-ride (passenger pick-up/drop-off) activities because 5 of the 12 proposed transit stations would have available onsite parking. These trips were distributed to the local roadway network based on knowledge of local traffic patterns and professional judgment.

The analysis of the bus-rail interface focused on the interaction between bus services provided by Metro and other transit service operators and the new LRT stations. As described in Section 3.3.5, the Study Area currently includes a wide range of transit services. Ridership

would likely change on Study Area bus routes, particularly those reconfigured to provide feeder services to the proposed stations.

The evaluation included quantitative information regarding transit service, as available from the Metro Travel Demand Model (adapted from SCAG 2016a):

- Number of trips by feeder buses
- Passenger load on other transit routes in the Study Area
- Total passenger miles on buses in the Study Area

Other potential impacts were determined qualitatively.

3.2.3 Analysis Approach: Active Transportation

The evaluation for nonmotorized (active – bicycle and pedestrian) transportation focused on station and overall access for bicyclists and pedestrians. The broader Study Area was analyzed to best capture how any adjustments made by Build Alternatives to active transportation facilities affect the existing and planned active transportation facility networks. Specific project feature improvements for nonmotorized transportation facilities (e.g., sidewalks) associated with the Build Alternatives were identified and described. Most of these improvements would be beneficial for bicyclists and pedestrians. Potential adverse impacts may include the following:

- An increase in traffic on roadways with existing bike facilities
- Elimination of bicycle lanes or routes, or sidewalks

3.2.4 Analysis Approach: Parking

Potential parking impacts include consequences of, or impacts from, changes in the supply of on- and off- street parking, and changes in parking demand from transit users. Indirect traffic and air quality impacts can also occur as a result of insufficient parking resulting in vehicles circling while looking for parking.

Effects to parking were assessed by considering how operation of the Project would affect the on- and off-street parking supplies (including free and paid public and privately owned lots). For instance, on-street parking spaces may be permanently removed in order to accommodate the LRT tracks, and off-street parking spaces may be permanently removed to accommodate other project features, such as traction power substations (TPSSs). The parking analysis also considered whether the demand from transit parking would exceed the available parking supply, resulting in spillover parking.

3.2.4.1 On- and Off-street Parking Analysis

The loss of on-street parking itself is not an adverse effect under NEPA, but it can be a local concern. A visual survey was conducted for the parking Affected Area (approximately 0.25 mile around each station, along streets immediately adjacent to the proposed alignment and other project features, and off-street parking lots where permanent easements or acquisitions are required for the Project) to determine supply and utilization of on-street parking. On-street parking effects were assessed by comparing the observed parking utilization with the number of parking spaces available after the removal of spaces resulting from the Project. If the on-street parking supply would decrease below the observed utilization, adverse effects would occur.

The on-street parking analysis also considered whether the loss of on-street parking would result in increases in traffic circulation and traffic delay, as well as a corresponding increase in emissions as drivers seek to find available on-street parking.

Effects to off-street parking on private properties were assessed to determine whether the loss of these parking spaces would result in the supply to fall below the requirements as per the applicable city parking code. If supply would fall below requirements, an adverse effect would occur. Metro would enter into an agreement with the applicable jurisdiction for the loss of off-street parking spaces associated with governmental institutions (e.g., city offices). In these instances, it is assumed that an agreement would be reached and no adverse effects would occur. The off-street parking analysis also considered whether excess parking demand at each station would result in increases in traffic circulation, traffic delay, and a corresponding increase in emissions as drivers seek to find available on-street parking.

3.2.4.2 Spillover Parking Analysis

The spillover parking analysis considered whether operation of the Project could result in the demand for transit parking to exceed the parking supply being provided by the Project at the corresponding proposed station. Estimates of forecasted parking demand were extracted from the Metro regional travel demand model at each station where transit parking would be provided. At stations where transit parking demand is projected to exceed the number of parking spaces provided, the unutilized supply of on-street parking was also considered to determine if transit parking demand could be accommodated via available on-street parking. Adverse spillover parking impacts would occur if the demand is higher than the combined on- and off-street parking capacity at each station.

For stations without dedicated transit parking, the travel demand model did not include any parking supply and therefore, parking demand was not projected. For these stations, it is assumed that no transit parking would materialize during operation of the Project as there would not be a dedicated parking supply. However, an analysis of available on-street parking was conducted around these stations to determine if some parking demand could be accommodated if passengers do attempt to drive to these stations.

The regional travel demand model uses unconstrained demand at stations with dedicated transit parking as a conservative estimate of total parking demand. If drivers find that parking is not available at their intended station (either dedicated transit parking or on street), it is anticipated that over time some trips would shift to other modes (e.g., kiss-and-ride, bicycle, or transit) to access the station or would drive to their ultimate destination. As such, in the long term, parking demand could be lower than that projected by the regional travel demand model if drivers cannot be accommodated. However, the analysis assumes a worst-case scenario because there may be periods when the demand is higher than available parking at the stations, particularly after the start of service.

3.2.5 Analysis Approach: Vehicle Miles Traveled

As described in Section 3.1.2, California Senate Bill 743 guides the state to focus on VMT and related measures as an alternative to traditional LOS analysis. An analysis focused on VMT for this study was conducted for CEQA purposes, and specifically item (b) of the evaluation methodology described in Section 3.2.6.

By definition, VMT analysis is a regional assessment. Therefore, the SCAG region was used as the basis for the geographic evaluation. VMT was assessed for the Existing, No Build, and Build Alternatives.

3.2.6 Analysis Approach: CEQA Evaluation

CEQA refers to significant impacts on the environment and requires the evaluation of potential effects of proposed government actions in order to disclose to decision makers and the public the significant environmental effects of the proposed activities. To satisfy CEQA requirements, potential transportation impacts were analyzed in accordance with Appendix G of the *CEQA Guidelines* identified in Section 3.6 of this chapter. The CEQA analysis was completed consistent with the December 2018 revisions to the *CEQA Guidelines*.

3.2.7 Analysis Approach: Construction

Impacts to the transportation system (i.e., roadway, freight tracks and operations, transit [rail and bus], bicycle, pedestrian, and parking) could result during construction of the Build Alternatives. Construction could affect roads by requiring peak, off-peak, and/or nighttime closures of lanes, roads, or intersections. Tracks used by transit and freight may require temporary bypass ("shoo-fly") tracks or single-track operation, either short-term (one or two days) or long-term (over the course of several days, weeks, or months). These closures could affect travel lanes for vehicles, bus routes or stops, bicycle facilities, sidewalks, schedules for transit and freight trains, and on- or off-street parking. Detours for vehicular, transit, or nonmotorized traffic could be required. Additionally, construction workers would add traffic to local streets and may use on- or off-street parking for their personal vehicles.

The analysis of potential impacts focused on the types of construction activities associated with elements of the Build Alternatives, including aerial and underground construction and intersection and street improvements to accommodate at-grade rail and station construction. Potential impacts due to delays or detours to transit routes along those roadways were considered. The evaluation considered the locations, the number of lanes, and the duration of closures for traffic and the temporary removal of on- and off-street parking during construction. These are described in Table 3.51. Construction activities affecting existing transit and freight tracks could require shoo-fly tracks or single-track operation. The evaluation also considered haul routes and construction worker parking.

3.3 Affected Environment/Existing Conditions

This section provides an assessment of the existing conditions in the Study Area. The subsections include an overview of the travel demand; details on the roadway network (freeway, arterials and local roads, and intersections); details on the transit service (rail and bus); and discussions of active transportation (bicycle and pedestrian travel) and parking.

The Notice of Preparation for the Project was issued on May 25, 2017, as such, the year 2017 was selected to represent Existing Conditions. The Existing Conditions assessment was based on best available data available from either 2016 or 2017, depending on availability. Traffic data were collected in late 2016 and early 2017, and transit data were gathered in 2017; however, the regional travel demand model (described in Section 3.3.1) uses a base year of 2016.

3.3.1 Travel Demand in the Corridor

To determine major travel patterns within the Study Area, data from Metro's Travel Demand Model: Corridors Base Model 2018 (CBM18) were extracted. The model was calibrated to 2012 and validated to 2017 conditions using the substantial amount of available data and information on the current travel behavior and travel patterns of Southern California transit riders.

The model has been applied to provide forecast demands on other corridors in the region. Travel characteristics for this model were derived from Metro trip tables, which are based on the 2016 trip tables in the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) (SCAG 2016a). The model coding is documented in the Travel Demand Methodology and Forecasting Results Report (Metro 2021bb).

According to these Existing Conditions trip tables, there were approximately 6.4 million daily person-trips in the Study Area. Of the 6.4 million daily trips:

- Approximately 2.1 million (33 percent) of the travel trips are round trips from origins inside the Study Area to destinations outside the area (i.e., the trip leaves the Study Area).
- Approximately 2.0 million (31 percent) of the travel trips are round trips from origins within the Study Area to destinations within the area (i.e., the trip is internal to the Study Area).
- Approximately 2.3 million (36 percent) of the travel trips are round trips from origins outside the Study Area to destinations inside the area (i.e., the trip enters the Study Area).

As shown, the percentage of trips entering the Study Area (36 percent) is slightly greater than the percentage of trips departing the Study Area (33 percent). This is because the employment density in the Study Area, which includes downtown Los Angeles, is approximately five times that of LA County.

The Study Area is an important transit corridor, accounting for nearly 28 percent (approximately 494,000 transit trips) of the SCAG region's transit trips. Of these transit trips:

- 148,000 (30 percent) trips originate in the Study Area and are destined for locations outside the Study Area (i.e., the transit trips leaving the Study Area).
- 138,000 (28 percent) trips stay within the Study Area (i.e., the transit trips internal to the Study Area).
- 208,000 (42 percent) trips are attracted to the Study Area from points outside the Study Area (i.e., the transit trips entering the Study Area).

These percentages illustrate the diverse needs to provide high-quality transit service throughout the Study Area and to/from regional connections and population/employment centers.

3.3.2 General Corridor-Wide Roadway Network Conditions

The roadway network includes a wide range of facilities: freeways, arterials, local roads, and intersections.

3.3.3 Freeways, Arterials, and Local Roads

The Study Area is served by an extensive freeway system that provides access to areas throughout LA County and the Southern California region. The following eight freeways are located within the Study Area; the freeways are shown on Figure 3-2:

- **I-5/Santa Ana Freeway:** This freeway runs through the Study Area at a northwest-southeast diagonal for approximately 6 miles. This freeway forms most of the eastern Study Area boundary. I-5 connects LA County internally, north to the Central Valley and Sacramento, and south to Orange County and San Diego.
- **I-710/Long Beach Freeway:** This north-south freeway runs through the middle of the Study Area for approximately 8.5 miles. It connects Long Beach and the Ports of Long Beach and Los Angeles north to its current terminus in the City of Alhambra in the San Gabriel Valley.
- **I-605/San Gabriel Freeway:** This north-south freeway passes through the southern end of the Study Area for approximately 4 miles. It connects to I-210 in the San Gabriel Valley to the north, and to I-405 at the boundary between Los Angeles and Orange Counties to the south.
- **I-110/Harbor Freeway:** This north-south freeway crosses the northwest portion of the Study Area for approximately 6 miles. It connects to I-10 in the north and I-105 and I-405 in the south.
- **I-105/Glenn Anderson or Century Freeway:** This east-west freeway crosses the central portion of the Study Area for approximately 8.5 miles. It connects to I-605 in the east and I-405 in the west, ending west of I-405 in the Los Angeles International Airport area. The Metro C (Green) Line operates through the length of I-105 in the freeway median.
- **SR-91/Artesia Freeway:** This east-west freeway operates through the southern end of the Study Area for approximately 8.5 miles. It connects Los Angeles, Orange, Riverside, and San Bernardino Counties from the I-110/Harbor Freeway in the South Bay east to downtown San Bernardino.
- **I-10/San Bernardino Freeway:** This east-west freeway crosses the northern end of the Study Area for approximately 8 miles. It provides access to I-710, near City Terrace, and I-110 in the northwest portion of the Study Area.
- **US-101/Hollywood Freeway:** This freeway runs through the northern part of the Study Area at a northwest-southeast diagonal for approximately 4 miles. It continues from central LA County, near Downtown LA (East LA interchange area) north to the Central Coast and San Francisco.

Existing traffic volumes (vehicles per day) and truck percentages for each freeway are listed in Table 3.3 and displayed on Figure 3-2. Figure 3-2 also displays the major arterial traffic volumes. As reflected in Table 3.3, freeway segments in the Study Area carry approximately 130,000 to 300,000 vehicles per day (both directions). These volumes were compiled using Caltrans traffic census data (Caltrans 2016a, 2016b). As a reference, the highest-volume freeway in the State of California is I-405 (at Seal Beach Boulevard in Orange County) with a volume of 377,600 vehicles per day in 2016 (Caltrans 2016a, 2016b).

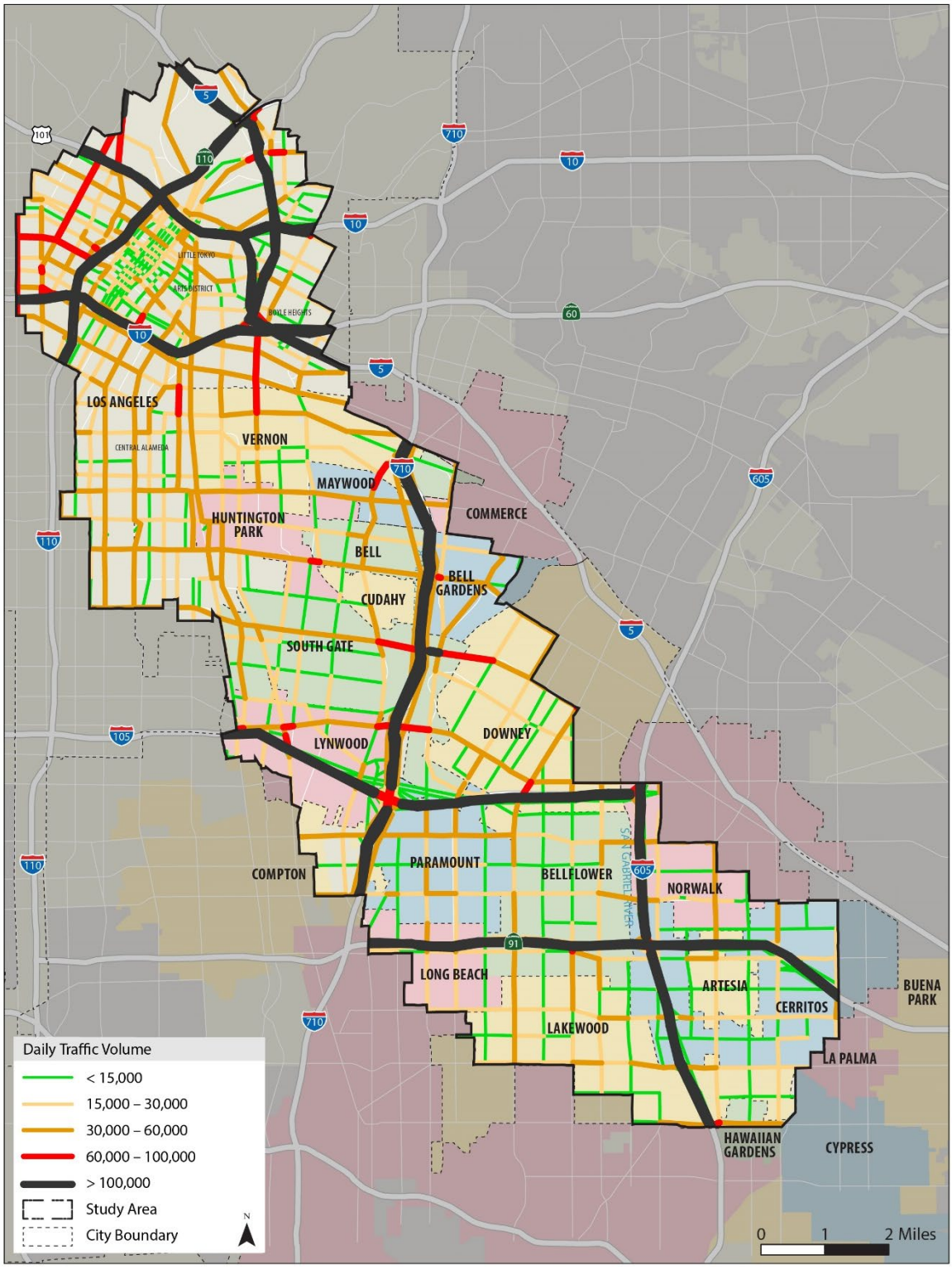
Table 3.3. Existing Average Annual Daily Traffic Volumes and Average Truck Percentages on Freeways

Freeway	From	To	AADT Volumes (min – max)*	Average Truck % (min – max)
I-5	I-710	SR-2	221,000 – 287,000	5 – 8
I-710	SR-91	I-5	204,000 – 241,000	8 – 9
I-605	Carson Road	I-105	186,000 – 298,000	5 – 6
I-110	I-10	I-5	160,000 – 291,000	1 – 3
I-105	I-110	I-605	195,000 – 240,000	5 – 9
SR-91	I-710	I-605	259,000 – 277,000	8
I-10	I-110	I-710	255,000 – 307,000	3 – 6
US-101	I-5	SR-2	136,000 – 266,000	3 – 4

Source: Adapted from Caltrans 2016a and 2016b
Notes: * AADT is the total volume for the year divided by 365 days.
AADT = annual average daily traffic; max = maximum, min = minimum; SR = State Route

Among these freeways, I-5 (between I-710 and SR 2), I-710 (between SR-91 and I-5), I-105 (between I-110 and I-605), and SR-91 (between I-710 and I-605) carry the largest percentage of truck traffic, with percentages ranging from 5 to 9 percent. These freeways provide trucks access to the Ports of Long Beach and Los Angeles south of the Study Area and to warehouses associated with the movement of goods. Truck percentages vary widely and are usually highest on rural freeways, but truck concentrations approaching 10 percent of overall traffic are considered high for urban areas.

Figure 3-2. Existing Daily Traffic Volumes on Freeways and Major Arterials in the Study Area



Source: Metro Travel Demand Model 2017-2042 (adapted from SCAG 2016a)

Table 3.4 summarizes the major roadway facilities (both freeways and arterials) directly and indirectly serving the cities and local communities within the Study Area.

Table 3.4. Major Roadway Facilities Serving the Study Area

City/Community	Major Roadway Facilities
Downtown Los Angeles	I-10, I-110, US-101
Boyle Heights	US-101, I-10, I-5, SR-60, Olympic Boulevard
Central Alameda	Alameda Street
South Park	E. Martin Luther King Jr. Boulevard
Florence-Graham (Florence-Firestone)	Firestone Boulevard, Florence Avenue, Central Avenue, Long Beach Avenue
Vernon	I-710, S. Soto Street, S. Downey Road
Maywood	S. Atlantic Boulevard, I-710
Huntington Park	Alameda Street, Pacific Boulevard
Bell	Atlantic Boulevard, I-710
Bell Gardens	I-710, Florence Avenue
Cudahy	Atlantic Boulevard, I-710
South Gate	I-710, Long Beach Boulevard
Downey	I-605, I-105, I-710, I-5
Lynwood	I-710, I-105, Long Beach Boulevard, Alameda Street, Imperial Highway
Paramount	I-105, I-710, Rosecrans Avenue
Bellflower	SR-91, I-105, I-605, Rosecrans Avenue
Norwalk	SR-91, I-5, I-105, I-605, Rosecrans Avenue
Cerritos	I-605, SR-91, Artesia Boulevard
Lakewood	I-605, Del Amo Boulevard
Artesia	SR-91, I-605, Pioneer Boulevard

Source: Arellano Associates 2016

3.3.4 Intersections

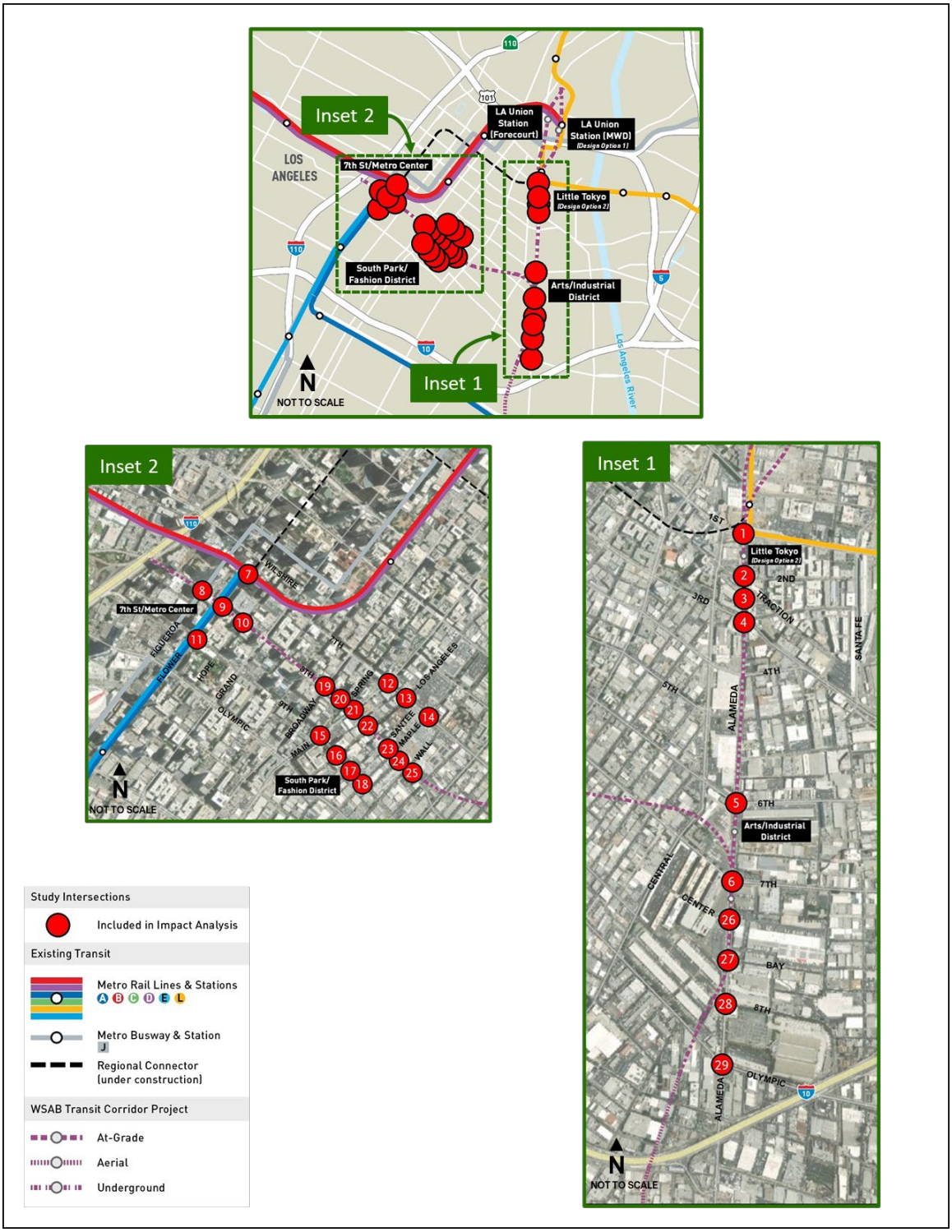
Most intersections within the Affected Area for traffic operations are controlled by a traffic signal or stop signs, with a few intersections being uncontrolled. Many intersections near rail crossings are controlled with crossing gate arms (typically found on arterials) or warning signs (typically found on lower-volume local roads). The signalized intersections near controlled rail crossings with gate arms are connected to the crossing, allowing for adjustments to the traffic signal timing (changing based on traffic conditions) on an as-needed basis, which helps to prevent vehicles from queuing on the tracks when there are oncoming trains. The intersections included in the traffic analysis are described below by location.

The alignment between Los Angeles Union Station (LAUS) or the 7th St/Metro Center Station and the Florence/Salt Lake Station is mainly in an industrial and business center area, except for the residential area at its southern end near the areas of Central-Alameda, Florence-Firestone, and City of Huntington Park. The northern end has a higher density of intersections than the southern end. Because this area of the alignment includes industrial areas, trucks account for a significant portion of its traffic. The alignment between the Florence/Salt Lake Station and the Pioneer Station is mainly residential, with some industrial areas between the Florence/Salt Lake Station and the Firestone Station. There are some major retail areas near the Pioneer Station. Because this area of the alignment is mainly in a residential area, there are relatively low volumes of truck traffic, except at the north end.

Figure 3-3 to Figure 3-6 provide an overview of the 101 key intersections along the alignment. Table 3.5 lists the key intersections, with details on jurisdiction, control type, reason for inclusion in the analysis, and intersection delay/LOS for each. Over half (51 percent) of the intersections (52 intersections) operate at LOS C or worse, and 13 percent (13 intersections) operate at LOS E or worse. Operations are similar in the AM and PM peak periods.

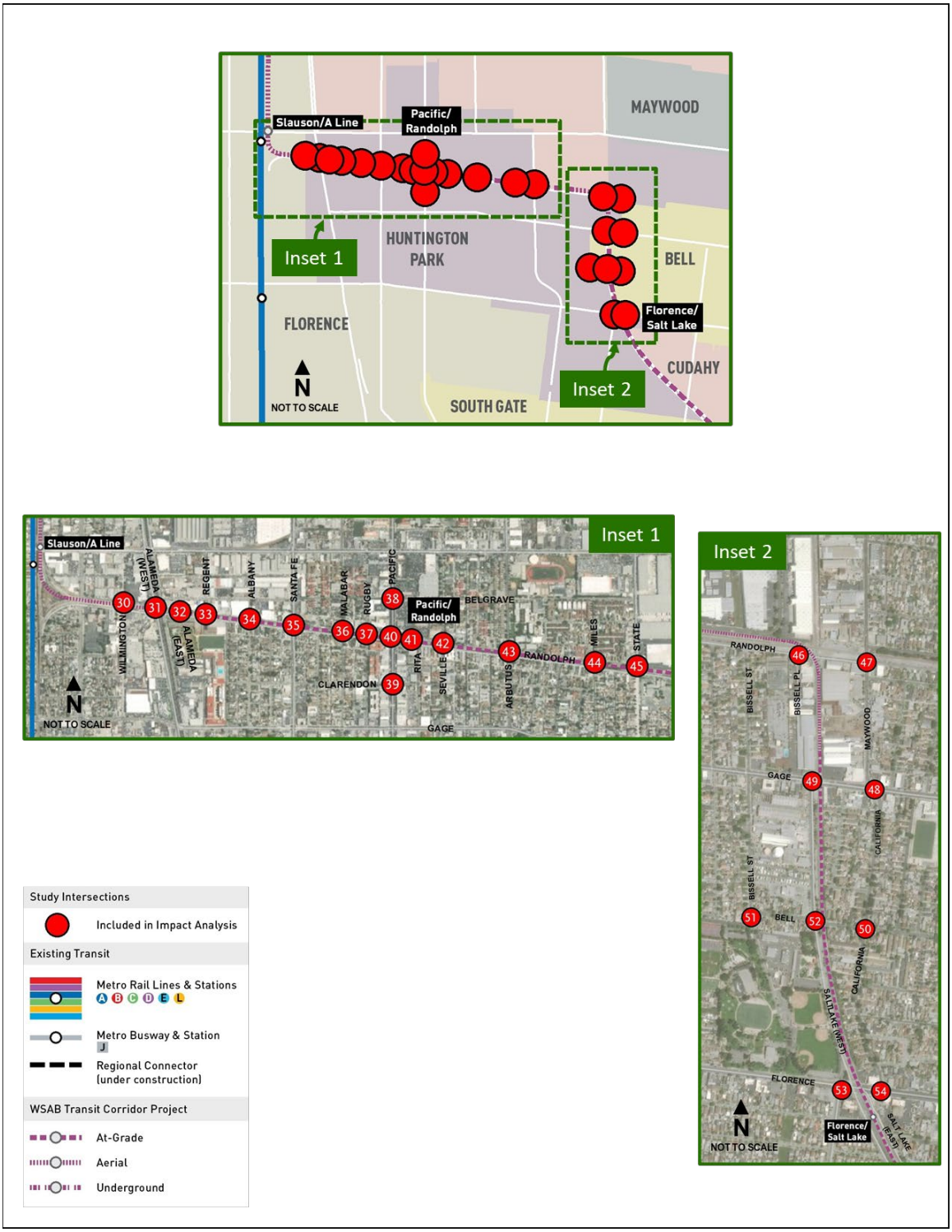
Appendix A – Attachment 2 of the Transportation Impact Analysis Report (Appendix D) contains detailed turning movement traffic volumes for the AM and PM peak for each intersection. Appendix A – Attachment 1 of that report includes a series of detailed maps.

Figure 3-3. Key Intersections (1 of 4)



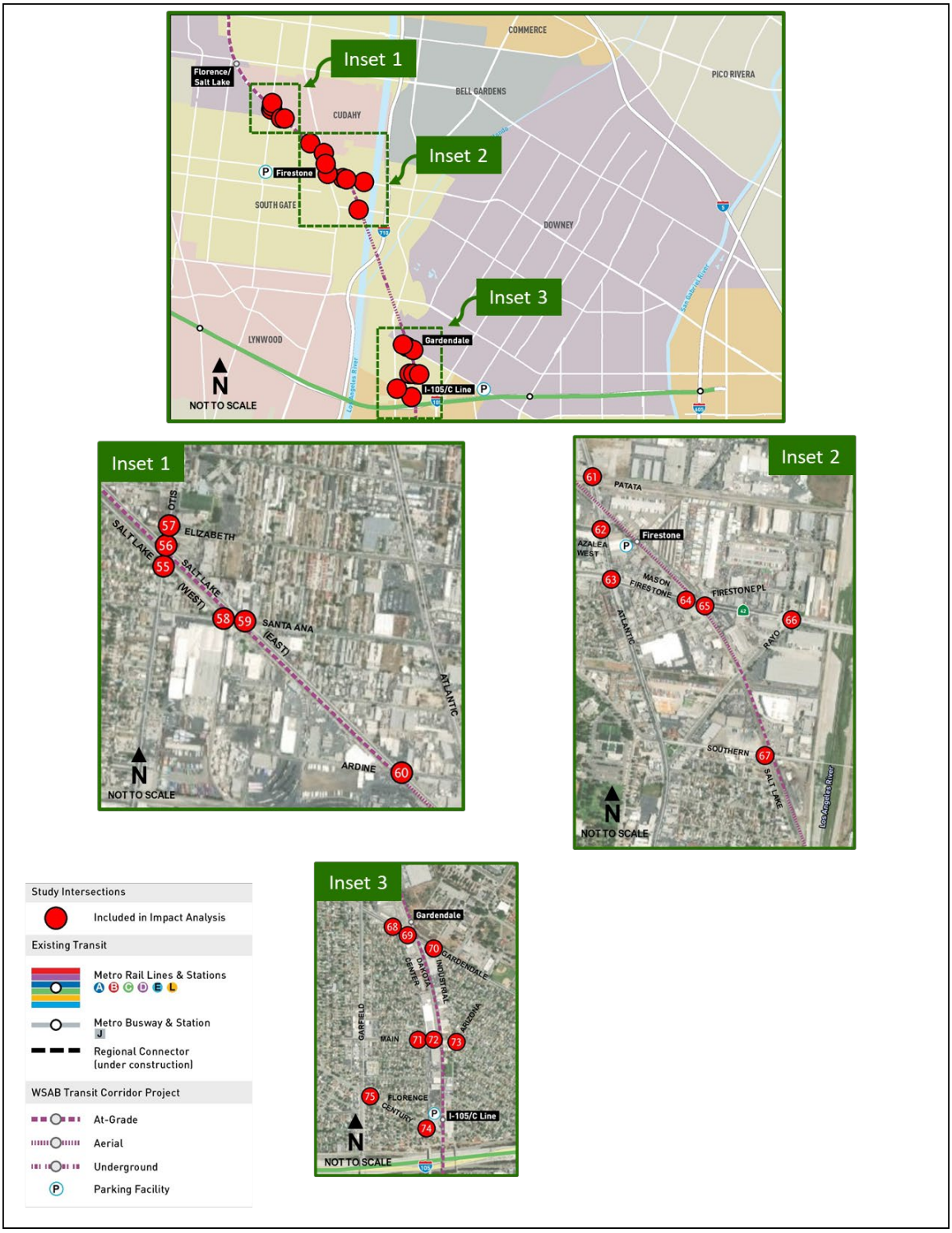
Source: Metro 2021s

Figure 3-4. Key Intersections (2 of 4)



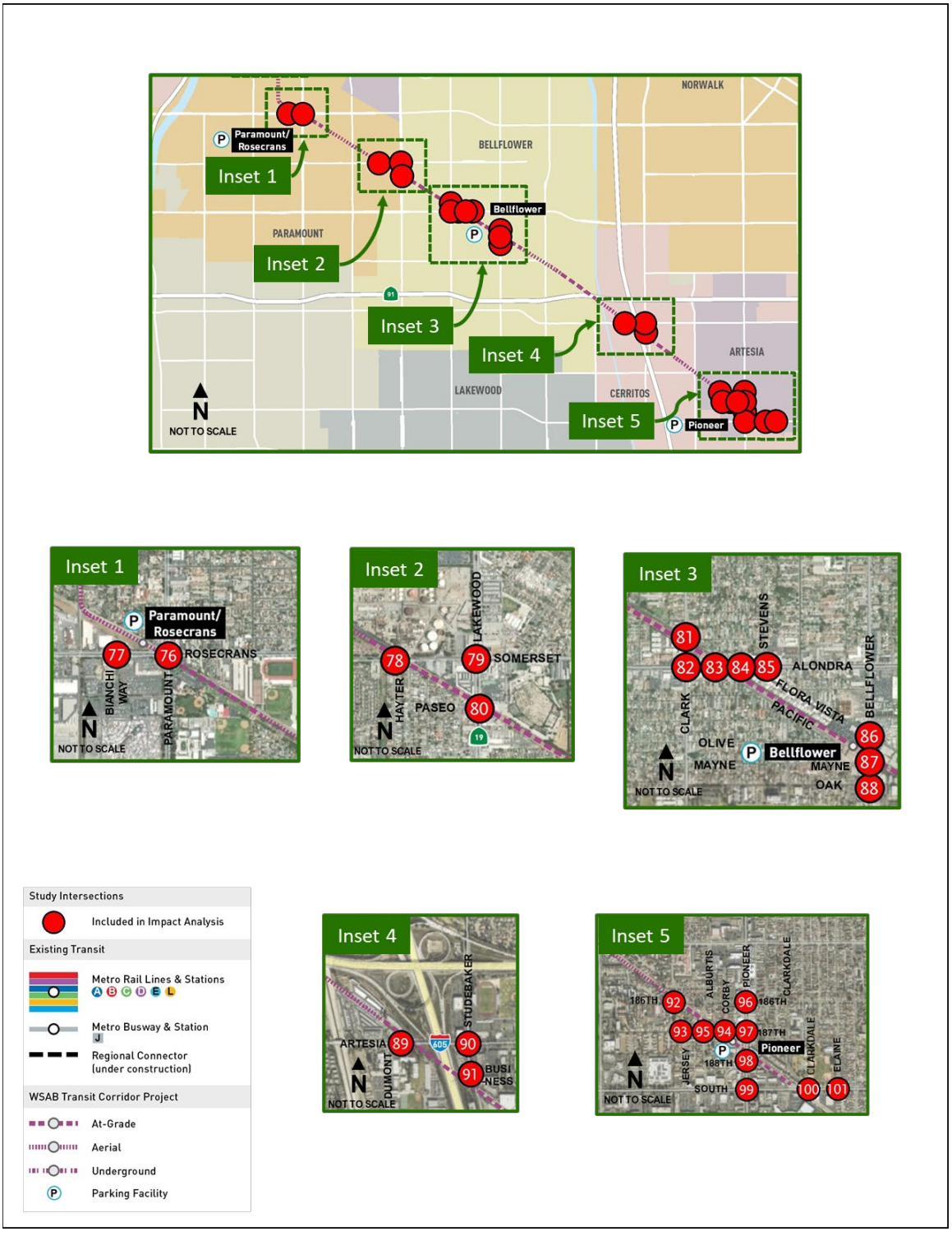
Source: Metro 2021s

Figure 3-5. Key Intersections (3 of 4)



Source: Metro 2021s

Figure 3-6. Key Intersections (4 of 4)



Source: Metro 2021s

Table 3.5. Key Intersections—Existing Operations

No	Intersection Name	Jurisdiction	Control Type	Selection Reason	Delay/LOS/Period*
1	Alameda St/1st St	Los Angeles	Traffic Signal	Near Little Tokyo Station (Alternative 1 – Design Option 2)	10/A-AM 11/B-PM
2	Alameda St/2nd St	Los Angeles	Traffic Signal	Near Little Tokyo Station (Alternative 1 – Design Option 2)	12/B-AM 19/B-PM
3	Alameda St/Traction Ave	Los Angeles	Two-Way Stop	Near Little Tokyo Station (Alternative 1 – Design Option 2)	12/B-AM 12/B-PM
4	Alameda St/3rd St	Los Angeles	Traffic Signal	Near Little Tokyo Station (Alternative 1 – Design Option 2)	20/C-AM 15/B-PM
5	Alameda St/6th St	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternative 1)	11/B-AM 13/B-PM
6	Alameda St/7th St	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternatives 1 and 2)	17/B-AM 14/B-PM
7	7th St/Flower St	Los Angeles	Traffic Signal	Near 7th St/Metro Center Station (Alternative 2)	16/B-AM 22/C-PM
8	8th St/Figueroa St	Los Angeles	Traffic Signal	Near 7th St/Metro Center Station (Alternative 2)	21/C-AM 25/C-PM
9	8th St/Flower St	Los Angeles	Traffic Signal	Near 7th St/Metro Center Station (Alternative 2)	28/C-AM 32/C-PM
10	8th St/Hope St	Los Angeles	Traffic Signal	Near 7th St/Metro Center Station (Alternative 2)	16/B-AM 15/B-PM
11	9th St/Flower St	Los Angeles	Traffic Signal	Near 7th St/Metro Center Station (Alternative 2)	20/B-AM 26/C-PM
12	7th St/Main St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	13/B-AM 16/B-PM
13	7th St/Los Angeles St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	18/B-AM 13/B-PM
14	7th St/Maple Ave	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	10/A-AM 8/A-PM
15	9th St/Main St/Spring St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	14/B-AM 16/B-PM
16	9th St/Los Angeles St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	18/B-AM 17/B-PM
17	9th St/Santee St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	5/B-AM 6/A-PM
18	9th St/Maple St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	19/B-AM 20/C-PM
19	8th St/Broadway	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	24/C-AM 24/C-PM
20	8th St/Spring St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	23/C-AM 24/C-PM
21	8th St/Main St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	27/C-AM 30/C-PM

No	Intersection Name	Jurisdiction	Control Type	Selection Reason	Delay/LOS/Period*
22	8th St/Los Angeles St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	9/A-AM 12/B-PM
23	8th St/Santee St	Los Angeles	Two-Way Stop	Near South Park/Fashion District Station (Alternative 2)	17/C-AM 21/C-PM
24	8th St/Maple Ave	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	5/A-AM 5/A-PM
25	8th St/Wall St	Los Angeles	Traffic Signal	Near South Park/Fashion District Station (Alternative 2)	14/B-AM 14/B-PM
26	Alameda St/Center St	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternative 2)	2/A-AM 5/A-PM
27	Alameda St/Bay St	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternative 2)	13/B-AM 12/B-PM
28	Alameda St/8th St	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternative 2)	1/A-AM 1/A-PM
29	Alameda St/Olympic Blvd	Los Angeles	Traffic Signal	Near Arts/Industrial District Station (Alternative 2)	16/B-AM 19/B-PM
30	Randolph St/Wilmington Ave	Huntington Park	All-Way Stop	Rail in Intersection	21/C-AM 12/B-PM
31	Randolph St/Alameda St (West)	Huntington Park	Traffic Signal	Rail in Intersection	48/D-AM 24/C-PM
32	Randolph St/Alameda St (East)	Huntington Park	Two-Way Stop	Rail in Intersection	9/A-AM 10/A-PM
33	Randolph St/Regent St	Huntington Park	Two-Way Stop	Rail in Intersection	15/C-AM 13/B-PM
34	Randolph St/Albany St	Huntington Park	Two-Way Stop	Rail in Intersection	29/D-AM 24/C-PM
35	Randolph St/Santa Fe Ave	Huntington Park	Traffic Signal	Rail in Intersection	23/C-AM 19/B-PM
36	Randolph St/Malabar St	Huntington Park	Traffic Signal	Rail in Intersection	21/C-AM 20/C-PM
37	Randolph St/Rugby Ave	Huntington Park	Two-Way Stop	Rail in Intersection	62/F-AM 14/B-PM
38	Pacific Blvd/Belgrave Ave	Huntington Park	Traffic Signal	Rail in Intersection	7/A-AM 8/A-PM
39	Pacific Blvd/Clarendon Ave	Huntington Park	Traffic Signal	Crossing Proximity	9/A-AM 7/A-PM
40	Pacific Blvd/Randolph St	Huntington Park	Traffic Signal	Rail in Intersection	30/C-AM 37/D-PM
41	Randolph St/Rita Ave	Huntington Park	Two-Way Stop	Rail in Intersection	25/C-AM 48/E-PM
42	Randolph St/Seville Ave	Huntington Park	Traffic Signal	Rail in Intersection	35/C-AM 30/C-PM
43	Randolph St/Miles Ave	Huntington Park	Traffic Signal	Rail in Intersection	34/C-AM 28/C-PM
44	Randolph St/Arbutus Ave	Huntington Park	All-Way Stop	Rail in Intersection	18/C-AM 10/B-PM
45	Randolph St/State St	Huntington Park	Traffic Signal	Rail in Intersection	21/C-AM 13/B-PM
46	Randolph St/Bissell Pl	Huntington Park	Two-Way Stop	Crossing Proximity	14/B-AM 13/B-PM

No	Intersection Name	Jurisdiction	Control Type	Selection Reason	Delay/LOS/Period*
47	Randolph St/Maywood Ave	Huntington Park	Traffic Signal	Crossing Proximity	13/B-AM 13/B-PM
48	Gage Ave/California Ave	Bell	Traffic Signal	Crossing Proximity	16/B-AM 19/C-PM
49	Gage Ave/Salt Lake Ave (West)	Bell	Traffic Signal	Crossing Proximity	16/B-AM 28/C-PM
50	Bell Ave/California Ave	Huntington Park	All-Way Stop	Crossing Proximity	18/C-AM 14/B-PM
51	Bell Ave/Bissell St	Bell	Traffic Signal	Crossing Proximity	9/A-AM 9/A-PM
52	Bell Ave/Salt Lake Ave	Huntington Park	All-Way Stop	Crossing Proximity	63/F-AM 47/E-PM
53	Florence Ave/California Ave (West)	Huntington Park	Traffic Signal	Near Florence/Salt Lake Station	34/C-AM 38/D-PM
54	Florence Ave/California Ave (East)	Huntington Park	Traffic Signal	Near Florence/Salt Lake Station	53/D-AM 29/C-PM
55	Otis Ave/Salt Lake Ave (West)	Huntington Park	All-Way Stop	Crossing Proximity	37/E-AM 45/E-PM
56	Otis Ave/Salt Lake Ave (East)	Cudahy	All-Way Stop	Crossing Proximity	75/E-AM 64/F-PM
57	Otis Ave/Elizabeth St	Cudahy	Two-Way Stop	Crossing Proximity	35/D-AM 47/E-PM
58	Santa Ana St/Salt Lake Ave (West)	Huntington Park	Two-Way Stop	Crossing Proximity	41/E-AM 36/E-PM
59	Santa Ana St/Salt Lake Ave (East)	Cudahy	All-Way Stop	Crossing Proximity	43/E-AM 48/E-PM
60	Ardine St/Salt Lake Ave	Cudahy	All-Way Stop	Crossing Proximity	30/D-AM 24/C-PM
61	Atlantic Ave/Salt Lake Ave	Cudahy	Traffic Signal	Crossing Proximity	53/D-AM 65/E-PM
62	Atlantic Ave/Azalea West	South Gate	Traffic Signal	Near Firestone Station, with 600 Parking Spaces	4/A-AM 8/A-PM
63	Firestone Blvd/Atlantic Ave	South Gate	Traffic Signal	Near Firestone Station, with 600 Parking Spaces	53/D-AM 46/D-PM
64	Firestone Blvd/Mason St	South Gate	Traffic Signal	Near Firestone Station, with 600 Parking Spaces	7/A-AM 8/A-PM
65	Firestone Blvd/Firestone Pl	South Gate	Traffic Signal	Near Firestone Station, with 600 Parking Spaces	8/A-AM 8/A-PM
66	Firestone Blvd/Rayo Ave	South Gate	Traffic Signal	Near Firestone Station, with 600 Parking Spaces	116/F-AM 95/F-PM
67	Southern Ave/Salt Lake Ave	South Gate	Two-Way Stop	Crossing Proximity	9/A-AM 9/A-PM
68	Gardendale St/Center St	South Gate	Two-Way Stop	Near Gardendale Station	19/C-AM 17/C-PM
69	Gardendale St/Dakota Ave	South Gate	All-Way Stop	Near Gardendale Station	28/D-AM 13/B-PM

No	Intersection Name	Jurisdiction	Control Type	Selection Reason	Delay/LOS/Period*
70	Gardendale St/Industrial Ave	South Gate	Two-Way Stop	Near Gardendale Station	35/D-AM 22/C-PM
71	Main St/Center St	South Gate	Two-Way Stop	Crossing Proximity	15/B-AM 13/B-PM
72	Main St/Dakota Ave	South Gate	Two-Way Stop	Crossing Proximity	10/B-AM 10/B-PM
73	Main St/Arizona Ave/ Industrial Ave	South Gate	Two-Way Stop	Crossing Proximity	18/C-AM 19/C-PM
74	Century Blvd/Center St	South Gate	Two-Way Stop	Near I-105/C Line Station, with 326 Parking Spaces	10/A-AM 9/A-PM
75	Century Blvd/Florence Ave	South Gate	Two-Way Stop	Near I-105/C Line Station, with 326 Parking Spaces	9/A-AM 9/A-PM
76	Rosecrans Ave/Paramount Blvd	Paramount	Traffic Signal	Near Paramount/Rosecrans Station, with 490 Parking Spaces	55/D-AM 48/D-PM
77	Rosecrans Ave/Bianchi Way	Paramount	Traffic Signal	Near Paramount/Rosecrans Station, with 490 Parking Spaces	2/A-AM 13/B-PM
78	Somerset Blvd/Hayter Ave	Paramount	Two-Way Stop	Crossing Proximity	29/D-AM 32/D-PM
79	Somerset Blvd/Lakewood Blvd	Bellflower	Traffic Signal	Crossing Proximity	32/C-AM 30/C-PM
80	Paseo St/Lakewood Blvd	Bellflower	Traffic Signal	Crossing Proximity	4/A-AM 3/A-PM
81	Flora Vista St/Clark Ave	Bellflower	Two-Way Stop	Crossing Proximity	14/B-AM 18/C-PM
82	Alondra Blvd/Clark Ave	Bellflower	Traffic Signal	Crossing Proximity	47/D-AM 48/D-PM
83	Alondra Blvd/Pacific Ave	Bellflower	Traffic Signal	Crossing Proximity	5/A-AM 12/B-PM
84	Alondra Blvd/Flora Vista St	Bellflower	Two-Way Stop	Crossing Proximity	37/E-AM 32/D-PM
85	Alondra Blvd/Stevens Ave	Bellflower	Two-Way Stop	Crossing Proximity	51/F-AM 30/D-PM
86	Bellflower Blvd/Flora Vista St	Bellflower	Traffic Signal	Near Bellflower Station, with 263 Parking Spaces	7/A-AM 14/B-PM
87	Bellflower Blvd/Mayne St	Bellflower	Traffic Signal	Near Bellflower Station, with 263 Parking Spaces	11/B-AM 10/B-PM
88	Bellflower Blvd/Oak St	Bellflower	Traffic Signal	Crossing Proximity	22/C-AM 25/C-PM
89	Artesia Blvd/Dumont Ave	Cerritos	Traffic Signal	Crossing Proximity	18/B-AM 9/A-PM
90	Artesia Blvd/Studebaker Rd	Cerritos	Traffic Signal	Crossing Proximity	85/F-AM 61/E-PM
91	Business Cir/Studebaker Rd	Cerritos	Two-Way Stop	Crossing Proximity	15/B-AM 16/C-PM
92	186th St/Jersey Ave	Artesia	All-Way Stop	Crossing Proximity	9/A-AM 9/A-PM

No	Intersection Name	Jurisdiction	Control Type	Selection Reason	Delay/LOS/Period*
93	187th St/Alburtis Ave	Artesia	Two-Way Stop	Crossing Proximity	10/A-AM 9/A-PM
94	187th St/Corby Ave (West)	Artesia	Two-Way Stop	Crossing Proximity	9/A-AM 10/A-PM
95	187th St/Corby Ave (East)	Artesia	Two-Way Stop	Crossing Proximity	9/A-AM 9/A-PM
96	186th St/Pioneer Blvd	Artesia	Traffic Signal	Crossing Proximity	7/A-AM 5/A-PM
97	187th St/Pioneer Blvd	Artesia	Traffic Signal	Near Pioneer Station, with 1,100 Parking Spaces	7/A-AM 5/A-PM
98	188th St/Pioneer Blvd	Artesia	Two-Way Stop	Near Pioneer Station, with 1,100 Parking Spaces	11/B-AM 13/B-PM
99	South St/Pioneer Blvd	Cerritos	Traffic Signal	Crossing Proximity	34/C-AM 41/D-PM
100	South St/Clarkdale Ave	Artesia	Traffic Signal	Crossing Proximity	18/B-AM 12/B-PM
101	South St/Elaine Ave	Artesia	Traffic Signal	Crossing Proximity	11/B-AM 12/B-PM

Source: Metro 2021s
Notes: * This column shows the peak hour delay in seconds/vehicle followed by the LOS, first for the AM peak hour, then for the PM peak hour. For example, "21/C-AM 13/B-PM" means a 21-second/vehicle delay, which is LOS C, in the AM peak hour and a 13-second/vehicle delay, which is LOS B, in the PM peak hour under the existing conditions.
LOS = level-of-service

3.3.5 Transit

Auto travel is the primary mode of transportation throughout Southern California. One measure of transit performance is the mode share, or percentage of trips that are made by transit. Table 3.6 shows the percentage of trips by mode in LA County.

Table 3.6. Trips by Mode – LA County

County	Auto	Transit	Bicycle	Walk
Los Angeles	69.65%	4.47%	1.86%	23.28%

Source: SCAG 2012c

Rail and bus transit services in the Study Area are provided by Metro, Metrolink, LADOT, the Orange County Transportation Authority, and other local/municipal bus and shuttle providers. The service types include:

- **Heavy rail transit (HRT) and LRT:** Trains operating in dedicated right-of-way (ROW)
- **Local and limited bus:** Traditional bus service
- **Express bus:** Defined routes with limited stops that generally use freeways for a portion of their trips to reduce travel time
- **Shuttles and circulators:** Local service on defined routes with frequent stops to support short-distance trips
- **Metro Rapid:** A system of high-speed bus service on nearly 400 miles of routes, incorporating signal priority and fewer stops to reduce travel time
- **Metrolink commuter rail:** Longer-distance train service on dedicated tracks, with limited stops and higher speeds
- **Downtown Area Short Hop (DASH):** Local routes in Los Angeles, with frequent stops

Within the Study Area, there are 10 Metro Rapid, 2 Metro HRT, 4 Metro LRT, and 6 Metrolink lines (major transit lines/routes). No existing transit lines/routes provide a continuous transit mode connecting the cities in the Study Area. Summaries of the transit service in the corridor are provided in the following subsections. The Transportation Impact Analysis Report (Appendix D) provides more detail on these transit facilities and services.

3.3.5.1 Rail Lines

Metro's urban rapid transit system includes a combination of HRT, LRT, and bus rapid transit (BRT) services. Six Metro HRT and LRT lines traverse portions of the Study Area, as shown on Figure 1-6 in Chapter 1, Purpose and Need.

Metrolink is a regional commuter rail service that operates seven routes. Six routes operate within at least a portion of the Study Area: the Antelope Valley Line, the Ventura Line, the San Bernardino Line, the Riverside Line, the Orange County Line, and the 91/Perris Valley Line. Section 4.3, Transit Conditions, in the Transportation Impact Analysis Report (Appendix D) provides more detailed information on these rail lines. Table 3.7 lists the service frequencies (total number of trains per day) of these Metrolink lines.

Table 3.7. Metrolink Line Service Frequency

Line	Daily Service Frequency (trains/day)	
	Weekday	Weekend
Antelope Valley Line	30	12
Ventura Line	31	N/A
San Bernardino Line	38	20
Riverside Line	7	-
Orange County Line	16	4
91/Perris Valley Line	7	2

Source: Metrolink 2017
Note: N/A = not applicable

3.3.5.2 Bus Service

Metro operates several types of bus services throughout its larger service area (refer to Figure 1-5 in Chapter 1, Purpose and Need). These services can be categorized into rapid, express, local, limited, and shuttle/circulator services based on trip distance, trip frequency, and travel times.

- Metro Rapid is a bus service that operates primarily in mixed-flow traffic on heavily traveled corridors with transit signal priority on signals along the route with limited stops and enhanced bus stations. Major routes in the Study Area include Routes 705, 720, 751, 760, and 762.
- Metro Express serves long-distance trips with fewer stops along the route and more stops at the beginning and end of the routes. The express routes usually operate from stations with park-and-ride lots with stops at major activity centers or transfer points. The routes use freeways, high-occupancy vehicle, high-occupancy toll, or bus lanes. Two express routes, Lines 460 and 577, pass through the Study Area.
- Shuttles and circulators serve short-distance trips and operate in mixed-flow traffic on secondary streets. They connect local communities with high-capacity transit services such as Metro Rail. Two major shuttle bus routes are located in the vicinity of the Build Alternatives within the Study Area: Routes 611 and 612.
- Several Metro local bus routes operate on city streets with several stops along the route within the Study Area. Major local bus routes in the vicinity include Routes 2, 4, 14, 16, 18, 45, 51, 60, 81, 108, 110, 111, 115, 117, 120, 258, 265, and 266.
- Other major transit operators serving the area include the following:
  - **DASH** is operated by the City of Los Angeles. There are 32 lines in DASH, of which 9 are located in the vicinity of the Build Alternatives within the Study Area: Downtown Lines (A, B, D, E, and F), Chesterfield Square, King East, Pueblo del Rio, and Southeast.
  - **Long Beach Transit** is a municipal transit operator of the City of Long Beach and operates fixed and flexible bus transit services in Long Beach and adjoining areas, including Cerritos, Lakewood, Signal Hill, and Belmont Shore. There are 35 routes operated by Long Beach Transit, of which 13 are located in the vicinity of the proposed Build Alternatives within the Study Area: Routes 22, 91, 92, 93, 101, 102, 103, 111, 112, 172, 173, 191, and 192.
  - **Norwalk Transit System (NTS)** is a municipal transit operator of the City of Norwalk and operates fixed-route and paratransit bus transit services in Norwalk

and adjoining areas of Artesia, Bellflower, Cerritos, Industry, La Mirada, and Whittier. NTS operates seven routes, three of which are in the vicinity of the Build Alternatives within the Study Area: Routes 1, 2, and 5.

Local circulator services, demand response services, and paratransit services are also provided by a variety of operators in the area. Local circulator services are provided by many incorporated cities, including Huntington Park, Bell, Bell Gardens, Cudahy, Lynwood, Downey, Paramount, Bellflower, Cerritos, and Artesia. The Transportation Impact Analysis Report (Appendix D) includes additional detail on the above-described suite of transit and other transportation service operators.

3.3.6 Active Transportation

The Study Area has an extensive bicycle and pedestrian system, and within that same area, Metro and SCAG have adopted plans, policies, and projects that support active transportation options as viable transportation modes. Regional, county, and local policy and planning documents seek to increase the number of bicyclists who ride for commuting and other daily purposes.

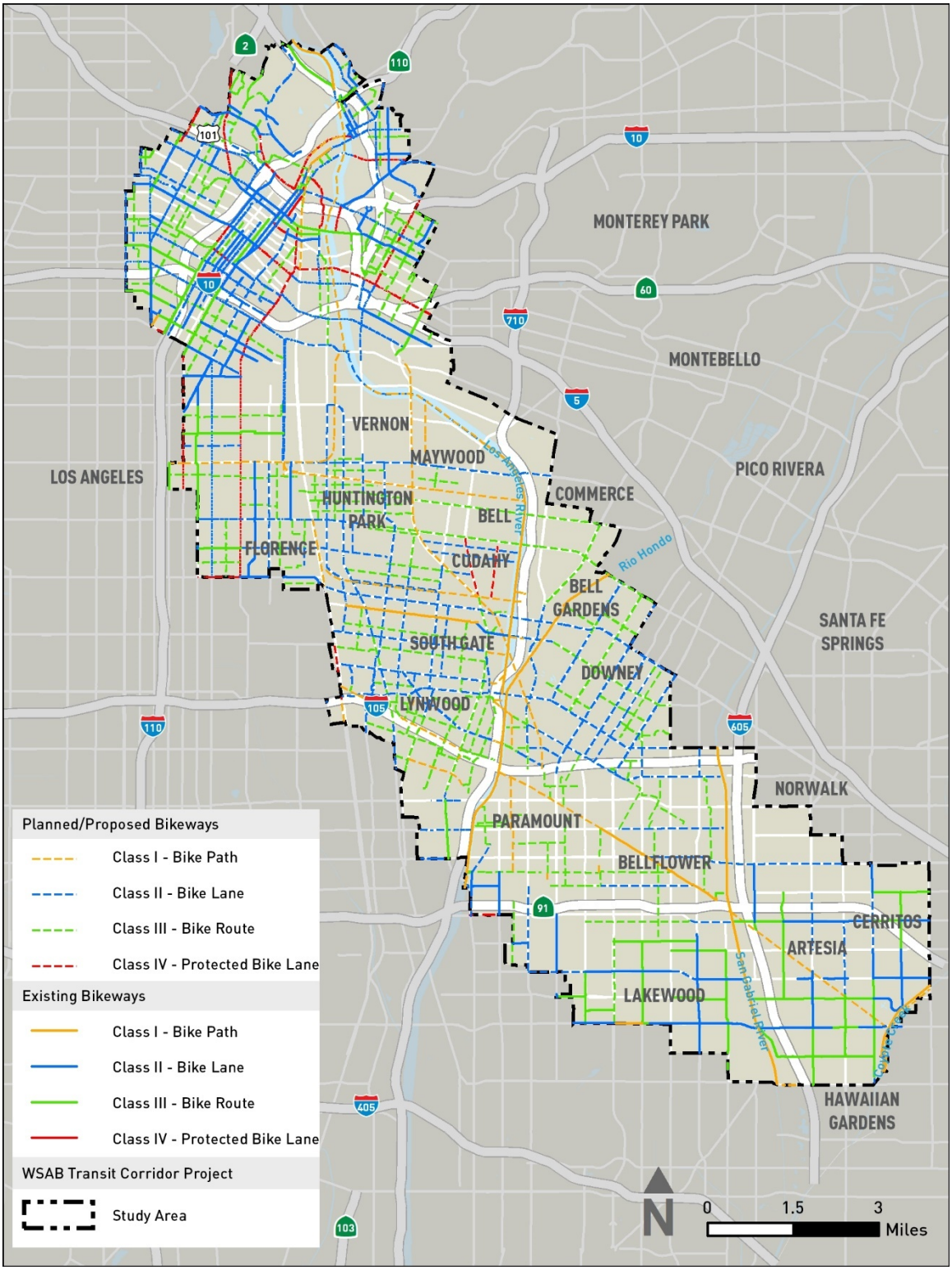
Figure 3-7 presents existing (represented by solid lines) and planned/proposed (represented by dashed lines) bicycle facilities. These facilities are classified using Caltrans' *Highway Design Manual* (2016c) as the following:

- Class I Bikeways are also known as bicycle paths, shared-use paths, or bicycle trails. These facilities are completely separated from motorized traffic.
- Class II Bikeways are also known as bicycle lanes. These facilities are marked along roadways with signs and striping or other pavement markings.
- Class III Bikeways are also known as bicycle routes. These facilities are suggested travel-ways marked by "bike route" signs but have no other signs, striping, or markings separating bicycle traffic from vehicular traffic.
- Class IV Bikeways are protected bike lanes that are physically separated from the vehicle travel lane by more than the white stripe. Separation may be accomplished with grade separation, flexible bollards, or permanent barriers.

Class I Bikeways in the vicinity of the proposed Build Alternatives are as follows:

- The Los Angeles River Bicycle Path runs north-south along the Los Angeles River from Vernon to Long Beach. Within the Study Area, the bike path is parallel to I-710.
- Rio Hondo Bike Path runs parallel to Rio Hondo and joins Los Angeles River bikeway at the confluence of Rio Hondo and the Los Angeles River in South Gate.
- San Gabriel River Trail runs north-south along the San Gabriel River. The trail runs from Seal Beach to Azusa. Within the Study Area, the bikeway is parallel to I-605.
- Southern Avenue Greenway is located in South Gate. This trail runs along Southern Avenue under the overhead power lines. This trail connects with the Los Angeles River bikeway near South Gate via a small Class II segment.
- Paramount Bike Trail is located in the PEROW in the City of Paramount between Somerset Boulevard and Lakewood Boulevard. The trail connects to the Bellflower Bike Trail at Lakewood Boulevard.
- Bellflower Bike Trail runs for more than 2 miles on the ROW of the Pacific Electric transit system across the City of Bellflower. The trail connects to San Gabriel River Trail at the Ruth R. Caruthers Park.

Figure 3-7. Existing and Planned/Proposed Study Area Bikeways



Source: Metro 2021s

- Coyote Creek Trail runs adjacent to the Coyote Creek flood control channel. The path begins in Santa Fe Springs on the north fork of the Coyote Creek and extends south into Long Beach, where it joins the San Gabriel River bicycle path.

Major Class II Bikeways in the vicinity of the proposed Build Alternatives are as follows:

- Del Amo Boulevard between Pioneer Boulevard and Paramount Boulevard
- Woodruff Avenue between Ashworth Street and Willow Street
- Pioneer Boulevard from Artesia Boulevard to Cover Street
- Downtown Spring Street between Main Street and Cesar Chavez Avenue
- Main Street between Venice Boulevard and Cesar Chavez Avenue
- Los Angeles Street between 1st Street and Alameda Street
- Olive Street between Washington Boulevard and 7th Street
- Grand Avenue between 39th Street and 7th Street
- Figueroa Street between Wilshire Boulevard and Sunset Boulevard
- 1st Street between Fremont Avenue and San Pedro Street/Judge John Aiso Street
- 2nd Street between Figueroa Street and Broadway
- 7th Street between Figueroa Street and Main Street

3.3.7 Parking

A wide range of parking types and regulations occurs within the parking Affected Area, including on-street and off-street parking, both free and paid, and public and private. Many of the on-street parking spaces are time-limited or permit-only, especially in the northern areas of the parking Affected Area where utilization and off-street parking charges are higher. Observations of on-street parking utilization were made during field surveys in 2017. Table 3.8 and Table 3.9 provide summaries of on-street parking supply and utilization for the locations where stations are proposed and along the alignment where track infrastructure and other features for the Project could require permanently removing and/or replacing parking. As shown in these tables, utilization ranged from approximately 20 to 90 percent during the peak parking periods. The assessment methodology and results are described in greater detail in the Transportation Impact Analysis Report (Appendix D) (Metro 2021s). Refer to Section 4.5 of Appendix D for a detailed assessment of existing parking supply and utilization. Table 3.10 provides a summary of off-street parking conditions in the area around the proposed stations.

The area from LAUS or 7th St/Metro Center Station to Florence Avenue (near the Florence/Salt Lake Station) generally consists of industrial and business center land uses, except for the residential area at the southern end. The industrial and business center areas have limited on-street parking with a substantial parking demand, while the residential areas have moderate parking availability. The off-street parking in this area is generally paid or private parking (for businesses or residential).

The area from Florence Avenue to the Pioneer Boulevard (Pioneer Station) is mainly residential, with some industrial areas at the north end and some major retail areas at the south end. The residential areas have moderate parking demand while the industrial areas have substantial parking demand. The major retail areas of the south end have sufficient parking availability for both on-street and off-street parking. The off-street parking at the south end of this area is generally for commercial/retail.

Table 3.8. On-Street Parking Conditions: Proposed Station Locations

Station	Parking Survey Area [a] (acres)	Applicable Alternative(s)	Existing On-Street Parking Spaces	Observed Field Utilization
LAUS	59.6	1, Design Option 1	47	90%
Little Tokyo	232.6	1, Design Option 2	1,803	90%
Arts/Industrial District [b]	108.0	1, 2	980	90%
South Park/Fashion District [c]	127.0	2	888	70%
7th St/Metro Center [c]	145.0	2	465	90%
Slauson/A Line	114.0	1, 2, 3	729	80%
Pacific/Randolph	170.0	1, 2, 3	1,624	60%
Florence/Salt Lake	108.0	1, 2, 3	1,106	30%
Firestone	106.0	1, 2, 3	461	50%
Gardendale	116.0	1, 2, 3	688	40%
I-105/C Line	47.4	1, 2, 3, 4	818	40%
Paramount/Rosecrans	88.9	1, 2, 3, 4	350	70%
Bellflower	164.0	1, 2, 3, 4	576	30%
Pioneer	94.5	1, 2, 3, 4	785	20%

Source: Metro 2021s
Notes: LAUS = Los Angeles Union Station
[a] For purposes of the parking impact analysis, the parking Affected Area is 0.25 mile around each station, but in some cases, a smaller or larger area was surveyed to determine parking supply and utilization based on existing characteristics and constraints that could influence the distance an individual may walk from a parking space. The table identifies the area where surveys were completed for each proposed station.
[b] The acreage of the Parking Survey Area is measured from the location of this station under Alternative 1; the location of the station under Alternative 2 is also within the area surveyed.
[C] At this station, the parking resource assessment is an estimate utilizing Google Earth aerial maps captured in December 2017.

Table 3.9. On-Street Parking Conditions: Along the Alignment

Mid-Station Location	Description	Parking Survey Area (acres)	Applicable Alternative(s)	Existing On-Street Parking Spaces	Observed Field Utilization
Long Beach Ave	Between Olympic Boulevard and 14th Street	1.0	1, 2	20	90%
Long Beach Ave	Between Vernon Ave and 24th St	4.0	1, 2	109	70%
Randolph St	Between Holmes Ave and State St	1.5	1, 2, 3	550	20%
Main St	Between Center St and Industrial Ave	0.4	1, 2, 3	12	20%

Source: Metro 2021s

Table 3.10. Off-Street Parking Conditions: Proposed Station Locations

Station	Jurisdiction	Applicable Alternative(s)	Surrounding Off-Street Parking
Los Angeles Union Station	Los Angeles	1, Design Option 1	There are multiple off-street parking structures within the parking study area such as Union Station, Metropolitan Water District and Metro. There are several off-street parking lots in the parking study area such as El Pueblo de Los Angeles and California Endowment. There are paid or private properties that have off-street parking lots.
Little Tokyo	Los Angeles	1, Design Option 2	Throughout Little Tokyo, there is paid, private, and public off-street parking in parking structures and parking lots.
Arts/Industrial District	Los Angeles	1	There are two private off-street multi-level parking structures and two parking lots (4.6 acres) at the right-of-way DTLA shopping center located on southbound Alameda Street south of 7th Street. Along southbound Alameda Street between 6th Street and 7th Street, Metro owns a property and has a facility for bus parking (8 acres).
Slauson/A Line	Los Angeles	2	There is off street public parking (2 acres) at the Augustus F. Hawkins Nature Park, which is located near the northeast corner of the Slauson Avenue and Compton Avenue intersection.
Pacific/Randolph	Huntington Park	2	There is a large shopping center to the northeast of Randolph Avenue and Pacific Boulevard of off-street parking (7.81 acres). There are smaller shopping centers northwest of Randolph Avenue and Pacific Boulevard of off-street parking (1.00 acres). There is a smaller shopping centers northwest of Randolph Avenue and Pacific Boulevard of off-street parking (0.50 acres).
Florence/Salt Lake	Huntington Park	2	Salt Lake Park near the intersection of Florence Avenue and Salt Lake Avenue has several off-street parking lots that are time unlimited. There are also several private off-street parking lots along Florence Avenue that are time unlimited.

Station	Jurisdiction	Applicable Alternative(s)	Surrounding Off-Street Parking
Firestone	South Gate	1, 2, 3	There were no public off street parking lots observed near the proposed station area. There is a large shopping center to the northeast of Atlantic Avenue and Firestone Boulevard of off-street parking (14.5 acres).
Gardendale	Downey	1, 2, 3	There were no public off street parking lots observed near the proposed station area. The County of Los Angeles Department of Public Works operates the Hollydale Yard of off-street parking (6.5 acres) between the proposed corridor and Garfield Avenue. There is also private off-street parking (2.5 acres) adjacent to the east side of the proposed corridor.
I-105/C Line	Paramount	1, 2, 3	There were no public off-street parking lots observed near the proposed station area.
Paramount/Rosecrans	Paramount	1, 2, 3	There were no public off-street parking lots observed near the proposed station area. There are approximately 10 acres of private off-street parking west of Paramount Boulevard between All America City Way and Rosecrans Avenue. There is additional private off-street parking at the schools located to the southeast of Paramount Boulevard and the proposed corridor.
Bellflower	Bellflower	1, 2, 3	There are four public off-street parking lots just east and west of Bellflower Boulevard, off Mayne Street, Oak Street, Belmont Street and Laurel Street, adjacent to Pirate Park. The lots provide free parking for between 2 and 72 hours. Two additional public off-street parking lots, with 2-hour parking limits, are located to the east of Bellflower Boulevard, along Oak Street and Belmont Street.

Station	Jurisdiction	Applicable Alternative(s)	Surrounding Off-Street Parking
Pioneer	Artesia	1, 2, 3, 4	One block north of the proposed station, along 186th Street between Corby Avenue and Pioneer Boulevard, the City of Artesia operates a public parking lot 0.6 acres of public off-street parking. Located directly east of the proposed station, at the Little India Village Food Court, there is a private parking lot with customer only parking. While there is little on street parking along South Street, there is private off-street parking along both sides of the street at various businesses and restaurants.

Source: Metro 2021s

3.4 Environmental Consequences/Environmental Impacts

This section examines the potential adverse effects and impacts of the No Build and Build Alternatives as they relate to the transportation system.

3.4.1 Traffic Operations

Traffic operations are evaluated to assess how vehicular circulation would be affected by the Build Alternatives. The assessment focuses on operations at intersections that would be affected by at-grade crossings, increased vehicular demand associated with stations, and changes in the roadway network.

The traffic operations analysis for the Build Alternatives focuses on analyzing Alternative 2. Alternative 2 would have the highest ridership of the four alternatives under consideration, and therefore would also result in the greatest volume of vehicles accessing stations as kiss-and-ride or park-and-ride trips (Table 3.13). Each Build Alternative would have similar service frequencies (i.e., similar train headways) and, as a result, train crossings at at-grade intersections would be the same. Similarly, the roadway modifications required to accommodate the Project would not vary among alternatives along the portions of the alignment that are the same. Therefore, there would be similar traffic operational changes under each Build Alternative for those intersections and roadways common among the alternatives. The analysis for Alternative 2 is used for Alternatives 1, 3, 4, and the design options because the vehicle trip demand associated with park-and-ride and kiss-and-ride represents a worst-case scenario.

Analysis of the traffic operations impacts for the Build Alternatives is provided in Sections 3.4.1.2 to 3.4.1.5 and is based on the information from the Transportation Impact Analysis Report (Appendix D). Attachment 6 of Appendix A in the Transportation Impact Analysis Report has detailed turning movement traffic volumes for the 2042 Build Alternatives AM and PM peak hours for each intersection.

3.4.1.1 No Build Alternative

The No Build Alternative includes existing transportation facilities along with transportation improvements that have been committed to and identified in constrained plans of the Metro 2009 *Long-Range Transportation Plan* (LRTP) (Metro 2009a) and the SCAG 2016 RTP/SCS (SCAG 2016a). The service features include transit, freeway, and arterial operations within and around the Affected Area for traffic operations. These projects are described in Section 2.5.1 and Table 2.2 in Chapter 2, Project Description. Planned projects would be subject to separate environmental analysis to evaluate transportation impacts. Project Measures TR PM-1 (Pre-signals and Queue-cutter Signals) through TR PM-10 (Pioneer Station Parking Access), described in Section 3.5.1, were considered not to be in place as these are required in support of the WSAB Project.

Table 3.11 provides a summary of the future (2042) No Build traffic operations at the Affected Area for traffic operations intersections. The LOS assessment is compared to existing conditions. In general, operations would be worse in 2042, consistent with traffic growth in a congested corridor.

Table 3.11. Comparison of Existing (2017) and Future (2042) No Build Intersection Operations

Scenario	Intersections	LOS C or Worse	LOS E or Worse
Existing (2017)	101	51%	13%
Future No Build (2042)		53%	23%

Source: Metro 2021s
Notes: LOS = level-of-service

Table 3.12 provides more detailed information on the 101 key intersections, including jurisdiction, control type, and intersection delay/LOS for the No Build Alternative in 2042. LOS is based on operation of the overall intersection, which considers delay for all movements at that intersection.

Under the No Build Alternative (2042), 53 percent of the intersections (52 intersections) operate at LOS C or worse, and 23 percent (24 intersections) are LOS E or worse. Operations are similar in the AM and PM peak periods. Under the No Build Alternative (2042), 11 intersections that operated at LOS A or B under existing (2017) conditions would deteriorate to LOS C or worse. Additionally, nine intersections that operated at LOS C or D under existing (2017) conditions would operate at LOS E or worse under the No Build Alternative (2042). Some intersections are projected to experience improvements in overall intersection delay under the No Build Alternative (2042) compared to existing (2017) conditions, even though traffic volumes are forecasted to increase. It is assumed that traffic signal timing at signalized intersections would be optimized between 2017 and 2042, which could result in changes to traffic flow and overall improvements in delay to the intersection where the signal is optimized as well as to adjacent intersections. Based on this assumption, 12 intersections that would operate at LOS C or worse under existing (2017) conditions are projected to operate at LOS A or B under the No Build Alternative (2042) and 2 intersections that would operate at LOS E or worse under existing (2017) conditions would operate at LOS C or D under the No Build Alternative (2042).

Appendix A – Attachment 5 of the Transportation Impact Analysis Report (Appendix D) contains detailed turning movement traffic volumes for the AM and PM peak hours for each intersection under the 2042 No Build Alternative.

Table 3.12. No Build Alternative Operations (2042)

No	Intersection Name	Jurisdiction	Control Type	Existing (2017) Delay/LOS/Period*	No Build (2042) Delay/LOS/Period*
1	Alameda St/1st St	Los Angeles	Traffic Signal	10/A-AM 11/B-PM	36/D-AM 18/B-PM
2	Alameda St/2nd St	Los Angeles	Traffic Signal	12/B-AM 19/B-PM	121/F-AM 65/E-PM
3	Alameda St/Traction Ave	Los Angeles	Two-Way Stop	12/B-AM 12/B-PM	82/F-AM 79/F-PM
4	Alameda St/3rd St	Los Angeles	Traffic Signal	20/C-AM 15/B-PM	61/E-AM 69/E-PM
5	Alameda St/6th St	Los Angeles	Traffic Signal	11/B-AM 13/B-PM	16/B-AM 19/B-PM
6	Alameda St/7th St	Los Angeles	Traffic Signal	17/B-AM 14/B-PM	69/E-AM 136/F-PM
7	7th St/Flower St	Los Angeles	Traffic Signal	16/B-AM 22/C-PM	17/B-AM 9/B-PM
8	8th St/Figueroa St	Los Angeles	Traffic Signal	21/C-AM 25/C-PM	13/B-AM 17/B-PM
9	8th St/Flower St	Los Angeles	Traffic Signal	28/C-AM 32/C-PM	9/A-AM 14/B-PM
10	8th St/Hope St	Los Angeles	Traffic Signal	16/B-AM 15/B-PM	19/B-AM 21/C-PM
11	9th St/Flower St	Los Angeles	Traffic Signal	20/B-AM 26/C-PM	15/B-AM 17/B-PM
12	7th St/Main St	Los Angeles	Traffic Signal	13/B-AM 16/B-PM	16/B-AM 19/B-PM
13	7th St/Los Angeles St	Los Angeles	Traffic Signal	18/B-AM 13/B-PM	15/B-AM 23/C-PM
14	7th St/Maple Ave	Los Angeles	Traffic Signal	10/A-AM 8/A-PM	10/B-AM 16/B-PM
15	9th St/Main St/Spring St	Los Angeles	Traffic Signal	14/B-AM 16/B-PM	19/B-AM 20/C-PM
16	9th St/Los Angeles St	Los Angeles	Traffic Signal	18/B-AM 17/B-PM	12/B-AM 15/B-PM
17	9th St/Santee St	Los Angeles	Traffic Signal	5/B-AM 6/A-PM	7/A-AM 16/B-PM
18	9th St/Maple St	Los Angeles	Traffic Signal	19/B-AM 20/C-PM	13/B-AM 20/C-PM
19	8th St/Broadway	Los Angeles	Traffic Signal	24/C-AM 24/C-PM	21/C-AM 19/B-PM
20	8th St/Spring St	Los Angeles	Traffic Signal	23/C-AM 24/C-PM	9/A-AM 11/B-PM
21	8th St/Main St	Los Angeles	Traffic Signal	27/C-AM 30/C-PM	10/A-AM 12/B-PM

No	Intersection Name	Jurisdiction	Control Type	Existing (2017) Delay/LOS/Period*	No Build (2042) Delay/LOS/Period*
22	8th St/Los Angeles St	Los Angeles	Traffic Signal	9/A-AM 12/B-PM	13/B-AM 17/B-PM
23	8th St/Santee St	Los Angeles	Two-Way Stop	17/C-AM 21/C-PM	11/B-AM 84/F-PM
24	8th St/Maple Ave	Los Angeles	Traffic Signal	5/A-AM 5/A-PM	11/B-AM 17/B-PM
25	8th St/Wall St	Los Angeles	Traffic Signal	14/B-AM 14/B-PM	12/B-AM 15/B-PM
26	Alameda St/Center St	Los Angeles	Traffic Signal	2/A-AM 5/A-PM	6/A-AM 14/B-PM
27	Alameda St/Bay St	Los Angeles	Traffic Signal	13/B-AM 12/B-PM	10/A-AM 12/B-PM
28	Alameda St/8th St	Los Angeles	Traffic Signal	1/A-AM 1/A-PM	11/B-AM 12/B-PM
29	Alameda St/Olympic Blvd	Los Angeles	Traffic Signal	16/B-AM 19/B-PM	29/C-AM 85/F-PM
30	Randolph St/Wilmington Ave	Huntington Park	All-Way Stop	21/C-AM 12/B-PM	33/D-AM 12/B-PM
31	Randolph St/Alameda St (West)	Huntington Park	Traffic Signal	48/D-AM 24/C-PM	50/D-AM 61/E-PM
32	Randolph St/Alameda St (East)	Huntington Park	Two-Way Stop	9/A-AM 10/A-PM	13/B-AM 14/B-PM
33	Randolph St/Regent St	Huntington Park	Two-Way Stop	15/C-AM 13/B-PM	10/B-AM 12/B-PM
34	Randolph St/Albany St	Huntington Park	Two-Way Stop	29/D-AM 24/C-PM	18/C-AM 17/C-PM
35	Randolph St/Santa Fe Ave	Huntington Park	Traffic Signal	23/C-AM 19/B-PM	30/C-AM 30/C-PM
36	Randolph St/Malabar St	Huntington Park	Traffic Signal	21/C-AM 20/C-PM	23/C-AM 22/C-PM
37	Randolph St/Rugby Ave	Huntington Park	Two-Way Stop	62/F-AM 14/B-PM	7/A-AM 4/A-PM
38	Pacific Blvd/Belgrave Ave	Huntington Park	Traffic Signal	7/A-AM 8/A-PM	13/B-AM 12/B-PM
39	Pacific Blvd/Clarendon Ave	Huntington Park	Traffic Signal	9/A-AM 7/A-PM	11/B-AM 9/A-PM
40	Pacific Blvd/Randolph St	Huntington Park	Traffic Signal	30/C-AM 37/D-PM	26/C-AM 33/C-PM
41	Randolph St/Rita Ave	Huntington Park	Two-Way Stop	25/C-AM 48/E-PM	20/C-AM 48/E-PM
42	Randolph St/Seville Ave	Huntington Park	Traffic Signal	35/C-AM 30/C-PM	38/D-AM 35/C-PM
43	Randolph St/Miles Ave	Huntington Park	Traffic Signal	34/C-AM 28/C-PM	37/D-AM 36/D-PM

No	Intersection Name	Jurisdiction	Control Type	Existing (2017) Delay/LOS/Period*	No Build (2042) Delay/LOS/Period*
44	Randolph St/Arbutus Ave	Huntington Park	All-Way Stop	18/C-AM 10/B-PM	33/D-AM 6/A-PM
45	Randolph St/State St	Huntington Park	Traffic Signal	21/C-AM 13/B-PM	44/D-AM 19/B-PM
46	Randolph St/Bissell Pl	Huntington Park	Two-Way Stop	14/B-AM 13/B-PM	7/A-AM 5/A-PM
47	Randolph St/ Maywood Ave	Huntington Park	Traffic Signal	13/B-AM 13/B-PM	14/B-AM 13/B-PM
48	Gage Ave/California Ave	Bell	Traffic Signal	16/B-AM 19/C-PM	20/B-AM 98/F-PM
49	Gage Ave/Salt Lake Ave (West)	Bell	Traffic Signal	16/B-AM 28/C-PM	16/B-AM 34/C-PM
50	Bell Ave/California Ave	Huntington Park	All-Way Stop	18/C-AM 14/B-PM	12/B-AM 9/A-PM
51	Bell Ave/Bissell St	Bell	Traffic Signal	9/A-AM 9/A-PM	5/A-AM 6/A-PM
52	Bell Ave/Salt Lake Ave	Huntington Park	All-Way Stop	63/F-AM 47/E-PM	89/F-AM 88/F-PM
53	Florence Ave/California Ave (West)	Huntington Park	Traffic Signal	34/C-AM 38/D-PM	37/D-AM 42/D-PM
54	Florence Ave/California Ave (East)	Huntington Park	Traffic Signal	53/D-AM 29/C-PM	65/E-AM 44/D-PM
55	Otis Ave/Salt Lake Ave (West)	Bell	All-Way Stop	37/E-AM 45/E-PM	189/F-AM 165/F-PM
56	Otis Ave/Salt Lake Ave (East)	Cudahy	All-Way Stop	75/E-AM 64/F-PM	83/F-AM 104/F-PM
57	Otis Ave/Elizabeth St	Cudahy	Two-Way Stop	35/D-AM 47/E-PM	1452/F-AM 1473/F-PM
58	Santa Ana St/Salt Lake Ave (West)	Huntington Park	Two-Way Stop	41/E-AM 36/E-PM	1478/F-AM 1574/F-PM
59	Santa Ana St/Salt Lake Ave (East)	Cudahy	All-Way Stop	43/E-AM 48/E-PM	219/F-AM 265/F-PM
60	Ardine St/Salt Lake Ave	Cudahy	All-Way Stop	30/D-AM 24/C-PM	24/C-AM 20/C-PM
61	Atlantic Ave/Salt Lake Ave	Cudahy	Traffic Signal	53/D-AM 65/E-PM	51/D-AM 81/F-PM
62	Atlantic Ave/Azalea West	South Gate	Traffic Signal	4/A-AM 8/A-PM	5/A-AM 9/A-PM
63	Firestone Blvd/Atlantic Ave	South Gate	Traffic Signal	53/D-AM 46/D-PM	139/F-AM 90/F-PM
64	Firestone Blvd/Mason St	South Gate	Traffic Signal	7/A-AM 8/A-PM	19/B-AM 12/B-PM
65	Firestone Blvd/Firestone Pl	South Gate	Traffic Signal	8/A-AM 8/A-PM	59/E-AM 24/C-PM

No	Intersection Name	Jurisdiction	Control Type	Existing (2017) Delay/LOS/Period*	No Build (2042) Delay/LOS/Period*
66	Firestone Blvd/Rayo Ave	South Gate	Traffic Signal	116/F-AM 95/F-PM	49/D-AM 40/D-PM
67	Southern Ave/Salt Lake Ave	South Gate	Two-Way Stop	9/A-AM 9/A-PM	4/A-AM 4/A-PM
68	Gardendale St/Center St	South Gate	Two-Way Stop	19/C-AM 17/C-PM	24/C-AM 17/C-PM
69	Gardendale St/Dakota Ave	South Gate	All-Way Stop	28/D-AM 13/B-PM	29/D-AM 11/B-PM
70	Gardendale St/Industrial Ave	South Gate	Two-Way Stop	35/D-AM 22/C-PM	76/F-AM 29/D-PM
71	Main St/Center St	South Gate	Two-Way Stop	15/B-AM 13/B-PM	8/A-AM 7/A-PM
72	Main St/Dakota Ave	South Gate	Two-Way Stop	10/B-AM 10/B-PM	3/A-AM 5/A-PM
73	Main St/Arizona Ave/ Industrial Ave	South Gate	Two-Way Stop	18/C-AM 19/C-PM	13/B-AM 7/A-PM
74	Century Blvd/Center St	South Gate	Two-Way Stop	10/A-AM 9/A-PM	2/A-AM 1/A-PM
75	Century Blvd/Florence Ave	South Gate	Two-Way Stop	9/A-AM 9/A-PM	2/A-AM 2/A-PM
76	Rosecrans Ave/Paramount Blvd	Paramount	Traffic Signal	55/D-AM 48/D-PM	68/E-AM 23/C-PM
77	Rosecrans Ave/Bianchi Way	Paramount	Traffic Signal	2/A-AM 13/B-PM	6/A-AM 23/C-PM
78	Somerset Blvd/Hayter Ave	Paramount	Two-Way Stop	29/D-AM 32/D-PM	16/C-AM 18/C-PM
79	Somerset Blvd/Lakewood Blvd	Bellflower	Two-Way Stop	32/C-AM 30/C-PM	43/D-AM 47/D-PM
80	Paseo St/Lakewood Blvd	Bellflower	Traffic Signal	4/A-AM 3/A-PM	5/A-AM 5/A-PM
81	Flora Vista St/Clark Ave	Bellflower	Two-Way Stop	14/B-AM 18/C-PM	8/A-AM 22/C-PM
82	Alondra Blvd/Clark Ave	Bellflower	Traffic Signal	47/D-AM 48/D-PM	46/D-AM 69/E-PM
83	Alondra Blvd/Pacific Ave	Bellflower	Traffic Signal	5/A-AM 12/B-PM	6/A-AM 13/B-PM
84	Alondra Blvd/Flora Vista St	Bellflower	Two-Way Stop	37/E-AM 32/D-PM	53/F-AM 41/E-PM
85	Alondra Blvd/Stevens Ave	Bellflower	Two-Way Stop	51/F-AM 30/D-PM	33/D-AM 16/C-PM
86	Bellflower Blvd/Flora Vista St	Bellflower	Traffic Signal	7/A-AM 14/B-PM	7/A-AM 19/B-PM
87	Bellflower Blvd/Mayne St	Bellflower	Traffic Signal	11/B-AM 10/B-PM	2/A-AM 3/A-PM

No	Intersection Name	Jurisdiction	Control Type	Existing (2017) Delay/LOS/Period*	No Build (2042) Delay/LOS/Period*
88	Bellflower Blvd/Oak St	Bellflower	Traffic Signal	22/C-AM 25/C-PM	18/B-AM 20/C-PM
89	Artesia Blvd/Dumont Ave	Cerritos	Traffic Signal	18/B-AM 9/A-PM	15/B-AM 22/C-PM
90	Artesia Blvd/Studebaker Rd	Cerritos	Traffic Signal	85/F-AM 61/E-PM	48/D-AM 100/F-PM
91	Business Cir/Studebaker Rd	Cerritos	Two-Way Stop	15/B-AM 16/C-PM	8/A-AM 8/A-PM
92	186th St/Jersey Ave	Artesia	All-Way Stop	9/A-AM 9/A-PM	3/A-AM 2/A-PM
93	187th St/Alburtis Ave	Artesia	Two-Way Stop	10/A-AM 9/A-PM	4/A-AM 2/A-PM
94	187th St/Corby Ave (West)	Artesia	Two-Way Stop	9/A-AM 10/A-PM	4/A-AM 4/A-PM
95	187th St/Corby Ave (East)	Artesia	Two-Way Stop	9/A-AM 9/A-PM	4/A-AM 4/A-PM
96	186th St/Pioneer Blvd	Artesia	Traffic Signal	7/A-AM 5/A-PM	7/A-AM 6/A-PM
97	187th St/Pioneer Blvd	Artesia	Traffic Signal	7/A-AM 5/A-PM	7/A-AM 8/A-PM
98	188th St/Pioneer Blvd	Artesia	Two-Way Stop	11/B-AM 13/B-PM	5/A-AM 6/A-PM
99	South St/Pioneer Blvd	Cerritos	Traffic Signal	34/C-AM 41/D-PM	25/C-AM 38/D-PM
100	South St/Clarkdale Ave	Artesia	Traffic Signal	18/B-AM 12/B-PM	16/B-AM 18/B-PM
101	South St/Elaine Ave	Artesia	Traffic Signal	11/B-AM 12/B-PM	10/B-AM 9/A-PM

Source: Metro 2021s
Notes: *This column shows the peak hour delay in seconds per vehicle, followed by the LOS for the AM peak hour, and then for the PM peak hour. For example, "21/C-AM 13/B-PM" means a 21-second/vehicle delay, which is LOS C, in the AM peak hour, and a 13-second/vehicle delay, which is LOS B, in the PM peak hour under the No Build condition.
LOS = level-of-service

3.4.1.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Traffic impacts associated with the at-grade crossings and stations within the limits of Alternative 1 would be equal to or less than those at the same facilities for Alternative 2 for those intersections common to both alternatives (Section 3.4.1.3). Because the northern terminus station would be farther from commercial and residential areas in downtown Los Angeles, there would be reduced ridership demand of approximately 20 percent for stations within the shared limits of Alternatives 1 and 2 (Table 3.13). The reduction in total ridership associated with Alternative 1 would also result in a reduced number of park-and-ride and kiss-and-ride trips compared to Alternative 2. The number of kiss-and-ride trips generated under Alternative 1 would be 13 to 38 percent lower than that of Alternative 2 across the stations. Service frequencies would not be reduced (i.e., train headways would remain the same), so the

number of at-grade crossing events, associated impacts, and effect determinations discussed in Section 3.4.1.3 would not change under Alternative 1. Under NEPA, Alternative 1 would result in adverse effects related to traffic operations. Alternative 1 would result in adverse impacts at 20 intersections prior to mitigation. After implementation of the mitigation measures described in Section 3.5.2, adverse impacts would remain at 12 intersections.

Table 3.13. Daily Ridership and Station Vehicular Demand—Build Alternatives (2042)

		Alternative 1	Alternative 2	Alternative 3	Alternative 4
Daily ridership		38,286	47,836	30,715	11,189
Ridership demand change vs. Alternative 2		-20%	N/A	-36%	-37%
Park-and-ride and kiss-and-ride demand change by station	Slauson/A Line*	-38%	N/A	-88%	N/A
	Randolph/Pacific*	-34%	N/A	-71%	N/A
	Florence/Salt Lake*	-22%	N/A	-52%	N/A
	Firestone	-15%	N/A	-42%	N/A
	Gardendale*	-18%	N/A	-55%	N/A
	I-105/C Line	-17%	N/A	-49%	-80%
	Paramount/Rosecrans	-16%	N/A	-45%	-61%
	Bellflower	-13%	N/A	-36%	-54%
	Pioneer	-13%	N/A	-37%	-54%

Source: Metro 2018f
Notes: * Kiss-and-ride only
N/A = analysis is not applicable to that station under that alternative.

3.4.1.3 Alternative 2: 7th St/Metro Center to Pioneer Station

Table 3.14 summarizes the Alternative 2 projected 2042 intersection operations. As shown, Alternative 2 would result in adverse impacts at 20 intersections during one or both peak periods based on increased delay compared to the No Build Alternative. Mitigation measures, described in Section 3.5, are proposed to address these impacts.

As shown in Table 3.14, intersection delay would be reduced at some intersections. This would occur for a variety of reasons, including optimized traffic signal timing, reconfiguration of roadway lanes, and/or changes in traffic flow at at-grade crossings.

The intersections located in downtown Los Angeles would not have adverse impacts because the alignment is either aerial or underground. As such, traffic circulation would not be affected by the Project.

Table 3.14. Alternative 2 Operations (2042)

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 2 Peak Hour Delay/LOS[b]
1-4	Not applicable to Alternative 2[e]	–	–	–
5	Alameda St/6th St	Los Angeles	16/B-AM 19/B-PM	16/B-AM 24/C-PM
6	Alameda St/7th St	Los Angeles	69/E-AM 136/F-PM	63/E-AM 121/F-PM
7	7th St/Flower St	Los Angeles	17/B-AM 19/B-PM	17/B-AM 18/B-PM
8	8th St/Figueroa St	Los Angeles	13/B-AM 17/B-PM	12/B-AM 17/B-PM
9	8th St/Flower St	Los Angeles	9/A-AM 14/B-PM	9/A-AM 13/B-PM
10	8th St/Hope St	Los Angeles	19/B-AM 21/C-PM	19/B-AM 21/C-PM
11	9th St/Flower St	Los Angeles	15/B-AM 17/B-PM	15/B-AM 17/B-PM
12	7th St/Main St	Los Angeles	16/B-AM 19/B-PM	16/B-AM 18/B-PM
13	7th St/Los Angeles St	Los Angeles	15/B-AM 23/C-PM	14/B-AM 20/C-PM
14	7th St/Maple Ave	Los Angeles	10/B-AM 16/B-PM	10/A-AM 15/B-PM
15	9th St/Main St/Spring St	Los Angeles	19/B-AM 20/C-PM	17/B-AM 22/C-PM
16	9th St/Los Angeles St	Los Angeles	12/B-AM 15/B-PM	12/B-AM 15/B-PM
17	9th St/Santee St	Los Angeles	7/A-AM 16/B-PM	7/A-AM 15/B-PM
18	9th St/Maple St	Los Angeles	13/B-AM 20/C-PM	13/B-AM 18/B-PM
19	8th St/Broadway	Los Angeles	21/C-AM 19/B-PM	21/C-AM 18/B-PM
20	8th St/Spring St	Los Angeles	9/A-AM 11/B-PM	8/A-AM 11/B-PM
21	8th St/Main St	Los Angeles	10/A-AM 12/B-PM	9/A-AM 11/B-PM
22	8th St/Los Angeles St	Los Angeles	13/B-AM 17/B-PM	12/B-AM 16/B-PM
23	8th St/Santee St	Los Angeles	11/B-AM 84/F-PM	11/B-AM 84/F-PM

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 2 Peak Hour Delay/LOS[b]
24	8th St/Maple Ave	Los Angeles	11/B-AM 17/B-PM	11/B-AM 16/B-PM
25	8th St/Wall St	Los Angeles	12/B-AM 15/B-PM	11/B-AM 14/B-PM
26	Alameda St/Center St	Los Angeles	6/A-AM 14/B-PM	5/A-AM 14/B-PM
27	Alameda St/Bay St	Los Angeles	10/A-AM 12/B-PM	9/A-AM 12/B-PM
28	Alameda St/8th St	Los Angeles	11/B-AM 12/B-PM	11/B-AM 12/B-PM
29	Alameda St/Olympic Blvd	Los Angeles	29/C-AM 85/F-PM	33/C-AM 58/E-PM
30	Randolph St/Wilmington Ave	Huntington Park	33/D-AM 12/B-PM	34/F-AM 13/A-PM
31	Randolph St/Alameda St (West)	Huntington Park	50/D-AM 61/E-PM	**143/F-AM[f]** **140/F-PM**
32	Randolph St/Alameda St (East)	Huntington Park	13/B-AM 14/B-PM	**-[c]-AM[f]** **-[c]-PM**
33	Randolph St/Regent St	Huntington Park	10/B-AM 12/B-PM	5/A-AM 6/A-PM
34	Randolph St/Albany St	Huntington Park	18/C-AM 17/C-PM	8/A-AM 8/A-PM
35	Randolph St/Santa Fe Ave	Huntington Park	30/C-AM 30/C-PM	**115/F-AM[f]** **141/F-PM**
36	Randolph St/Malabar St	Huntington Park	23/C-AM 22/C-PM	**82/F-AM[f]** **52/D-PM**
37	Randolph St/Rugby Ave	Huntington Park	7/A-AM 4/A-PM	4/A-AM 6/A-PM
38	Pacific Blvd/Belgrave Ave	Huntington Park	13/B-AM 12/B-PM	17/B-AM 15/B-PM
39	Pacific Blvd/Clarendon Ave	Huntington Park	11/B-AM 9/A-PM	**51/D-AM[f]** 14/B-PM
40	Pacific Blvd/Randolph St	Huntington Park	26/C-AM 33/C-PM	**90/F-AM[f]** **73/E-PM**
41	Randolph St/Rita Ave	Huntington Park	20/C-AM 48/E-PM	8/A-AM 5/A-PM
42	Randolph St/Seville Ave	Huntington Park	38/D-AM 35/C-PM	**111/F-AM[f]** **129/F-PM**
43	Randolph St/Miles Ave	Huntington Park	37/D-AM 36/D-PM	**92/F-AM[f]** **122/F-PM**
44	Randolph St/Arbutus Ave	Huntington Park	33/D-AM 6/A-PM	35/D-AM 18/B-PM

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 2 Peak Hour Delay/LOS[b]
45	Randolph St/State St	Huntington Park	44/D-AM 19/B-PM	**144/F-AM[f]** **76/E-PM**
46	Randolph St/Bissell Pl	Huntington Park	7/A-AM 5/A-PM	2/A-AM 5/A-PM
47	Randolph St/Maywood Ave	Huntington Park	14/B-AM 13/B-PM	17/B-AM 11/B-PM
48	Gage Ave/California Ave	Bell	20/B-AM 98/F-PM	**69/E-AM[f]** **120/F-PM**
49	Gage Ave/Salt Lake Ave (West)	Bell	16/B-AM 34/C-PM	**64/E-AM[f]** **114/F-PM**
50	Bell Ave/California Ave	Huntington Park	12/B-AM 9/A-PM	13/B-AM 8/A-PM
51	Bell Ave/Bissell St	Bell	5/A-AM 6/A-PM	13/B-AM **22/C-PM[f]**
52	Bell Ave/Salt Lake Ave	Huntington Park	89/F-AM 88/F-PM	53/D-AM 19/B-PM
53	Florence Ave/California Ave (West)	Huntington Park	37/D-AM 42/D-PM	**103/F-AM[f]** **80/F-PM**
54	Florence Ave/California Ave (East)	Huntington Park	65/E-AM 44/D-PM	**143/F-AM[f]** 31/C-PM
55	Otis Ave/Salt Lake Ave (West)	Huntington Park	189/F-AM 165/F-PM	122/F-AM 135/F-PM
56	Otis Ave/Salt Lake Ave (East)	Cudahy	83/F-AM 104/F-PM	36/E-AM 93/F-PM
57	Otis Ave/Elizabeth St	Cudahy	1452/F-AM 1473/F-PM	342/F-AM 366/F-PM
58	Santa Ana St/Salt Lake Ave (West)	Huntington Park	1478/F-AM 1574/F-PM	823/F-AM 747/F-PM
59	Santa Ana St/Salt Lake Ave (East)	Cudahy	219/F-AM 265/F-PM	146/F-AM 100/F-PM
60	Ardine St/Salt Lake Ave	Cudahy	24/C-AM 20/C-PM	25/D-AM 16/C-PM
61	Atlantic Ave/Salt Lake Ave	Cudahy	51/D-AM 81/F-PM	53/D-AM 81/F-PM
62	Atlantic Ave/Azalea West	South Gate	5/A-AM 9/A-PM	10/B-AM 18/B-PM
63	Firestone Blvd/Atlantic Ave	South Gate	139/F-AM 90/F-PM	140/F-AM 91/F-PM
64	Firestone Blvd/Mason St	South Gate	19/B-AM 12/B-PM	10/B-AM 14/B-PM
65	Firestone Blvd/Firestone Pl	South Gate	59/E-AM 24/C-PM	44/D-AM 27/C-PM

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 2 Peak Hour Delay/LOS[b]
66	Firestone Blvd/Rayo Ave	South Gate	49/D-AM 40/D-PM	42/D-AM 43/D-PM
67	Southern Ave/Salt Lake Ave	South Gate	4/A-AM 4/A-PM	6/A-AM 4/A-PM
68	Gardendale St/Center St	South Gate	24/C-AM 17/C-PM	**48/E-AM[f]** **41/E-PM**
69	Gardendale St/Dakota Ave	South Gate	29/D-AM 11/B-PM	8/A-AM 9/A-PM
70	Gardendale St/Industrial Ave	South Gate	76/F-AM 29/D-PM	**594/F-AM[f]** **50/F-PM**
71	Main St/Center St	South Gate	8/A-AM 7/A-PM	10/A-AM 7/A-PM
72	Main St/Dakota Ave	South Gate	3/A-AM 5/A-PM	4/A-AM 7/A-PM
73	Main St/Arizona Ave/Industrial Ave	South Gate	13/B-AM 7/A-PM	17/C-AM 11/B-PM
74	Century Blvd/Center St	South Gate	2/A-AM 1/A-PM	2/A-AM 1/A-PM
75	Century Blvd/Florence Ave	South Gate	2/A-AM 2/A-PM	2/A-AM 2/A-PM
76	Paramount Blvd/Rosecrans Ave	Paramount	68/E-AM 23/C-PM	69/E-AM 26/C-PM
77	Rosecrans Ave/Bianchi Way	Paramount	6/A-AM 23/C-PM	9/A-AM 8/A-PM
78	Somerset Blvd/Hayter Ave	Paramount	16/C-AM 18/C-PM	13/B-AM 17/C-PM
79	Somerset Blvd/Lakewood Blvd	Bellflower	43/D-AM 47/D-PM	44/D-AM 38/D-PM
80	Paseo St/Lakewood Blvd	Bellflower	5/A-AM 5/A-PM	12/B-AM 7/A-PM
81	Flora Vista St/Clark Ave	Bellflower	8/A-AM 22/C-PM	**172/F-AM[f]** **389/F-PM**
82	Alondra Blvd/Clark Ave	Bellflower	46/D-AM 69/E-PM	**61/E-AM[f]** **83/F-PM**
83	Alondra Blvd/Pacific Ave	Bellflower	6/A-AM 13/B-PM	9/A-AM 6/A-PM
84	Alondra Blvd/Flora Vista St	Bellflower	53/F-AM 41/E-PM	**420/F-AM[f]** 37/E-PM
85	Alondra Blvd/Stevens Ave	Bellflower	33/D-AM 16/C-PM	36/E-AM 20/C-PM
86	Bellflower Blvd/Flora Vista St	Bellflower	7/A-AM 19/B-PM	18/B-AM 25/C-PM

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 2 Peak Hour Delay/LOS[b]
87	Bellflower Blvd/Mayne St	Bellflower	2/A-AM 3/A-PM	18/B-AM 24/C-PM
88	Bellflower Blvd/Oak St	Bellflower	18/B-AM 20/C-PM	23/C-AM 34/C-PM
89	Artesia Blvd/Dumont Ave	Cerritos	15/B-AM 22/C-PM	**24/C-AM**[f] **58/E-PM**
90	Artesia Blvd/Studebaker Rd	Cerritos	48/D-AM 100/F-PM	49/D-AM 82/F-PM
91	Business Cir/Studebaker Rd	Cerritos	8/A-AM 8/A-PM	3/A-AM **15/C-PM**[f]
92	186th St/Jersey Ave	Artesia	3/A-AM 2/A-PM	5/A-AM 8/A-PM
93	187th St/Alburtis Ave	Artesia	4/A-AM 2/A-PM	2/A-AM 2/A-PM
94	187th St/Corby Ave (West)	Artesia	4/A-AM 4/A-PM	1/A-AM 3/A-PM
95	187th St/Corby Ave (East)	Artesia	4/A-AM 4/A-PM	1/A-AM 1/A-PM
96	186th St/Pioneer Blvd	Artesia	7/A-AM 6/A-PM	11/B-AM 8/A-PM
97	187th St/Pioneer Blvd	Artesia	7/A-AM 8/A-PM	5/A-AM 4/A-PM
98	188th St/Pioneer Blvd	Artesia	5/A-AM 6/A-PM	-[d]-AM -[d]-PM
99	South St/Pioneer Blvd	Cerritos	25/C-AM 38/D-PM	26/C-AM 40/D-PM
100	South St/Clarkdale Ave	Cerritos	16/B-AM 18/B-PM	9/A-AM 18/B-PM
101	South St/Elaine Ave	Cerritos	10/B-AM 9/A-PM	11/A-AM 9/A-PM

Source: Metro 2021s

Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS for the AM peak hour, and then for the PM peak hour. For example, "21/C-AM 13/B-PM" means a 21-second/vehicle delay, which is LOS C, in the AM peak hour, and a 13-second/vehicle delay, which is LOS B, in the PM peak hour under the No Build condition.

[b] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.

[c] The traffic signal installation improvements for the intersection are considered to be tied to the Randolph St/Alameda St (West) traffic signal operations. Therefore, the Randolph St/Alameda St (West) peak hour delay summary considers the operations at Randolph St/Alameda St (West).

[d] 188th Street would be closed between Corby Avenue and Pioneer Boulevard to accommodate Pioneer Station parking structure. Therefore, the intersection is eliminated.

[e] These intersections are located along Alternative 1. Refer to Table 3.18 for the evaluation of Intersections 1-4.

[f] Yellow-shaded and bolded cells are those intersections where adverse impacts are identified.

LOS = level-of-service

Additionally, Alternative 2 could result in changes to the lengths of vehicle queues from nearby intersections back to train crossings. These queues arise when vehicles wait at a red traffic signal and the spacing from an intersection to an upstream train crossing is not sufficient to store all waiting vehicles. The result could be vehicles stopped on the tracks, unless other measures are taken, such as placing signs to indicate that stopping on the tracks is not permitted. The Transportation Impact Analysis Report (Appendix D) contains detailed information on the queuing analysis conducted. While these are not LOS intersection impacts, the effects from vehicle queues would exceed the available vehicle storage from nearby intersections at the following at-grade crossing locations:

- Florence Avenue: At California Avenue (East) and California Avenue (West)
- Gardendale Street: At Center Street
- Lakewood Boulevard: At Somerset Boulevard
- Clark Avenue: At Alondra Boulevard
- Alondra Boulevard: At Clark Avenue
- Bellflower Boulevard: At Flora Vista Street and Oak Street
- Artesia Boulevard: At Studebaker Road

Project Measures TR PM-1 (Pre-signals and Queue-cutter Signals) through TR PM-10 (Pioneer Station Parking Access), described in Section 3.5.1, would be implemented as part of the Project to minimize the potential for vehicles queuing into at-grade crossings; these measures were determined during advanced design and/or in consultation with the CPUC. For instance, TR PM-1 (Pre-signals and Queue-cutter Signals) would include installation of pre-signals and queue-cutter signals to prevent queuing across the tracks with a directional signal before the tracks. They are activated (turned red) when the system detects an approaching queue on the other side of the tracks, or in coordination with the downstream intersection signal. With these project measures, the vehicles in the queue would be prevented from stopping on the tracks, eliminating potential conflicts from queues under Alternative 2. Because these features would be required to obtain certification from the CPUC for operation of the Project, these features are considered part of design and not as separate mitigation measures.

Alternative 2 would cross freeways either aerial or as an undercrossing. The existing number of freeway lanes would not be modified to accommodate Alternative 2. Safety requirements to accommodate the freeway crossing would be established in accordance with Caltrans requirements.

Under NEPA, Alternative 2 would result in adverse effects related to traffic operations. Alternative 2 would result in adverse impacts at 20 intersections prior to mitigation. After implementation of the mitigation measures described in Section 3.5.2, adverse impacts would remain at 12 intersections.

3.4.1.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Traffic impacts associated with the at-grade crossings and stations within the limits of Alternative 3 would be equal to or less than those at the same facilities for Alternative 2. Alternative 3 would not result in adverse impacts at intersections outside the limits of Alternative 3. Because Alternative 3 would not result in new transit service north of the Slauson/A Line Station, there would be a 36 percent reduction in ridership demand for stations within the limits of Alternative 3 compared to Alternative 2, as shown in Table 3.13. The reduction in total ridership associated with Alternative 3 would also result in a reduced number of park-and-ride and kiss-and-ride trips at the Alternative 3 stations (between the Slauson/A Line and Pioneer Stations). The number of kiss-and-ride trips generated by Alternative 3 would be 37 to 88 percent lower than that of Alternative 2 across the stations. As a result, there would be a minor reduction in traffic impacts associated with station vehicle trips. However, Alternative 3 would have the same service frequencies as Alternative 2 and, therefore, the number of at-grade crossing events, associated effects, and effect determinations identified for Alternative 2 in Section 3.4.1.3 would also apply to Alternative 3 for those intersections that are part of the area affected by Alternative 3. Table 3.15 provides a summary of the traffic operations assessment between the Slauson/A Line and Pioneer Stations under Alternative 3. Under NEPA, Alternative 3 would result in adverse effects related to traffic operations. There are 20 intersections where Alternative 3 would have adverse effects associated with the nearby at-grade crossings, which are the same intersections that would have adverse effects under Alternative 2. After implementation of the mitigation measures discussed in Section 3.5.2, Alternative 3 would have adverse effects at 12 intersections.

Table 3.15. Summary of Alternative 3 Intersection Operations Assessment

Intersections with Adverse Effects		Intersections without Adverse Effects	
No. 31: Randolph St/Alameda St (West)	No. 68: Gardendale St/Center St	No. 31: Randolph St/Wilmington Ave	No. 71: Main St/Center St
No. 35: Randolph St/Santa Fe Ave	No. 70: Gardendale St/Industrial Ave	No. 33: Randolph St/Regent St	No. 72: Main St/Dakota Ave
No. 36: Randolph St/Malabar St	No. 81: Flora Vista St/Clark Ave	No. 34: Randolph St/Albany St	No. 73: Main St/Arizona Ave/Industrial Ave
No. 39: Pacific Blvd/Clarendon Ave	No. 82: Alondra Blvd/Clark Ave	No. 37: Randolph St/Rugby Ave	No. 74: Century Blvd/Center St
No. 40: Pacific Blvd/Randolph St	No. 84: Alondra Blvd/Flora Vista St	No. 38: Pacific Blvd/Belgrave Ave	No. 75: Century Blvd/Florence Ave
No. 42: Randolph St/Seville Ave	No. 89: Artesia Blvd/Dumont Ave	No. 41: Randolph St/Rita Ave	No. 76: Paramount Blvd/Rosecrans Ave
No. 43: Randolph St/Miles Ave	No. 91: Business Cir/Studebaker Rd	No. 44: Randolph St/Arbutus Ave	No. 77: Rosecrans Ave/Bianchi Way
No. 45: Randolph St/State St		No. 46: Randolph St/Bissell Pl	No. 78: Somerset Blvd/Hayter Ave
No. 48: Gage Ave/California Ave		No. 47: Randolph St/Maywood Ave	No. 79: Somerset Blvd/Lakewood Blvd
No. 49: Gage Ave/Salt Lake Ave (West)		No. 50: Bell Ave/California Ave	No. 80: Paseo St/Lakewood Blvd
No. 51: Bell Ave/Bissell St		No. 52: Bell Ave/Salt Lake Ave	No. 83: Alondra Blvd/Pacific Ave
No. 53: Florence Ave/California Ave (West)		No. 55: Otis Ave/Salt Lake Ave (West)	No. 85: Alondra Blvd/Stevens Ave
No. 54: Florence Ave/California Ave (East)		No. 56: Otis Ave/Salt Lake Ave (East)	No. 86: Bellflower Blvd/Flora Vista St
		No. 57: Otis Ave/Elizabeth St	No. 87: Bellflower Blvd/Mayne St
		No. 58: Santa Ana St/Salt Lake Ave (West)	No. 88: Bellflower Blvd/Oak St
		No. 59: Santa Ana St/Salt Lake Ave (East)	No. 90: Artesia Blvd/Studebaker Rd
		No. 60: Ardine St/Salt Lake Ave	No. 92: 186th St/Jersey Ave
		No. 61: Atlantic Ave/Salt Lake Ave	No. 93: 187th St/Alburtis Ave
		No. 62: Atlantic Ave/Azalea West	No. 94: 187th St/Corby Ave (West)
		No. 63: Firestone Blvd/Atlantic Ave	No. 95: 187th St/Corby Ave (East)
		No. 64: Firestone Blvd/Mason St	No. 96: 186th St/Pioneer Blvd
		No. 65: Firestone Blvd/Firestone Pl	No. 97: 187th St/Pioneer Blvd
		No. 66: Firestone Blvd/Rayo Ave	No. 98: 188th St/Pioneer Blvd
		No. 67: Southern Ave/Salt Lake Ave	No. 99: South St/Pioneer Blvd
		No. 69: Gardendale St/Dakota Ave	No. 100: South St/Clarkdale Ave
			No. 101: South St/Elaine Ave

Source: Metro 2021s

3.4.1.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Similar to Alternative 3, traffic impacts associated with the at-grade crossings and stations within the limits of Alternative 4 would be equal to or less than those at the same locations for Alternative 2. Alternative 4 would not result in adverse impacts at intersections outside the limits of Alternative 4. Because Alternative 4 would not result in new transit service north of the I-105/C Line Station, there would be a 37 percent reduction in ridership demand for stations within the limits of Alternative 4 compared to Alternative 2, as shown in Table 3.13. The reduction in total ridership associated with Alternative 4 would also result in a reduced number of park-and-ride and kiss-and-ride trips at the Alternative 4 stations (between the I-105/C Line and Pioneer Stations). The number of park-and-ride and kiss-and-ride trips generated by Alternative 4 would be between 54 and 80 percent lower than that of Alternative 2 across the stations. As a result, there would be a minor reduction in traffic impacts associated with station vehicle trips. However, Alternative 4 would have the same service frequencies as Alternative 2 and, therefore, the number of at-grade crossing events, associated effects, and effect determinations identified for Alternative 2 would apply to Alternative 4 for those intersections that are part of the area affected by Alternative 4.

Table 3.16 provides a summary of the traffic operations assessment between the I-105/C Line and Pioneer Stations under Alternative 4. Under NEPA, Alternative 4 would result in adverse effects related to traffic operations prior to mitigation. There are seven intersections where Alternative 4 would have adverse effects associated with the nearby at-grade crossings. Alternatives 1, 2, and 3 also would result in adverse effects at these intersections. Because Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3, there would be 15 fewer intersections adversely affected with Alternative 4 compared to these other alternatives. After implementation of the mitigation measures described in Section 3.5.2, Alternative 4 would not result in adverse effects.

Table 3.16. Alternative 4 Intersection Adverse Effect Assessment

Intersections with Adverse Effects	Intersections without Adverse Effects	
No. 81: Flora Vista St/Clark Ave	No. 69: Gardendale St/Dakota Ave	No. 87: Bellflower Blvd/Mayne St
No. 82: Alondra Blvd/Clark Ave	No. 71: Main St/Center St	No. 88: Bellflower Blvd/Oak St
No. 84: Alondra Blvd/Flora Vista St	No. 72: Main St/Dakota Ave	No. 90: Artesia Blvd/Studebaker Rd
No. 89: Artesia Blvd/Dumont Ave	No. 73: Main St/Arizona Ave/ Industrial Ave	No. 92: 186th St/Jersey Ave
No. 91: Business Cir/Studebaker Rd	No. 74: Century Blvd/Center St	No. 93: 187th St/Alburtis Ave
	No. 75: Century Blvd/Florence Ave	No. 94: 187th St/Corby Ave (West)
	No. 76: Paramount Blvd/Rosecrans Ave	No. 95: 187th St/Corby Ave (East)
	No. 77: Rosecrans Ave/Bianchi Way	No. 96: 186th St/Pioneer Blvd
	No. 78: Somerset Blvd/Hayter Ave	No. 97: 187th St/Pioneer Blvd
	No. 79: Somerset Blvd/Lakewood Blvd	No. 98: 188th St/Pioneer Blvd
	No. 80: Paseo St/Lakewood Blvd	No. 99: South St/Pioneer Blvd
	No. 83: Alondra Blvd/Pacific Ave	No. 100: South St/Clarkdale Ave
	No. 85: Alondra Blvd/Stevens Ave	No. 101: South St/Elaine Ave
	No. 86: Bellflower Blvd/Flora Vista St	

Source: Metro 2021s

3.4.1.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD

As summarized in Table 3.17, there would be a reduced ridership demand of approximately 14 percent under Alternative 1 with Design Option 1 (MWD) compared to Alternative 2. Similar to Alternative 1 without the design option, the reduced ridership is because the northern terminus would be farther from commercial and residential areas. The reduction in total ridership associated with Design Option 1 (MWD) would also result in a 11 to 30 percent reduction in the number of park-and-ride and kiss-and-ride trips compared to Alternative 2. Service frequencies under Alternative 1 with Design Option 1 (MWD) would be the same as those for Alternative 2; therefore, the number of at-grade crossing events, associated effects, and effect determinations discussed in Section 3.4.1.3 would not change.

Table 3.17. Daily Ridership and Station Vehicular Demand—Alternative 1 with Design Options 1 and 2 and Alternative 2 (2042)

		Alternative 1 with Design Option 1 (MWD)	Alternative 1 with Design Option 2	Alternative 2
Daily ridership		41,043	41,054	47,836
Ridership demand change vs. Alternative 2		-14%	-14%	—
Park-and-ride and kiss-and-ride demand change by station	Slauson/A Line*	-30%	-29%	—
	Randolph/Pacific*	-29%	-28%	—
	Florence/Salt Lake*	-19%	-17%	—
	Firestone	-13%	-12%	—
	Gardendale*	-15%	-15%	—
	I-105/C Line	-14%	-14%	—
	Paramount/Rosecrans	-13%	-14%	—
	Bellflower	-11%	-11%	—
	Pioneer	-11%	-11%	—

Source: Metro 2018f
Notes: * Kiss-and-ride only
MWD = Metropolitan Water District

Design Option 2: Add Little Tokyo Station

Traffic impacts associated with the at-grade crossings and stations under Alternative 1 with Design Option 2 would be equal to or less than those at the same facilities for Alternative 2. Because the northern terminus station would be farther from the commercial and residential areas, there would be a 14 percent reduction in ridership demand for stations for Alternative 1 with Design Option 2 compared to Alternative 2 (Table 3.17). The reduction in total ridership associated with Design Option 2 would also result in an 11 to 29 percent reduction in the number of park-and-ride and kiss-and-ride trips at stations. Design Option 2 would include additional intersections in the downtown Los Angeles area; however, the intersections located in the downtown Los Angeles area would not have adverse impacts

because the alignment is either aerial or underground and the stations would not accommodate kiss-and-ride or park-and-ride trips. Table 3.18 shows the additional intersections and projected 2042 operations. If Design Option 1 (MWD) is included with Design Option 2, additional key intersections would not be added to the Affected Area for traffic operations and the key intersections analysis results would not change. Service frequencies under Alternative 1 with Design Option 2 would be the same as those for Alternative 2; therefore, the number of at-grade crossing events, associated effects, and effect determinations discussed in Section 3.4.1.3 would not change.

Table 3.18. Alternative 1 with Design Option 2 Operations (Design Option Specific) (2042)

No	Intersection Name	Jurisdiction	No Build Peak Hour Delay/LOS[a]	Alternative 1 with Design Option 2 Peak Hour Delay/LOS[b]
1	1st St/Alameda St	Los Angeles	36/D-AM 18/B-PM	35/D-AM 19/B-PM
2	2nd St/Alameda St	Los Angeles	121/F-AM 65/E-PM	123/F-AM 65/E-PM
3	Traction Ave/Alameda St	Los Angeles	82/F-AM 79/F-PM	82/F-AM 77/F-PM
4	3rd St/Alameda St	Los Angeles	61/E-AM 69/E-PM	57/E-AM 68/E-PM

Source: Metro 2021s
Notes: [a] This column shows the peak-hour delay in seconds per vehicle, followed by the LOS for the AM peak hour, and then for the PM peak hour. For example, "21/C-AM 13/B-PM" means a 21-second/vehicle delay, which is LOS C, in the AM peak hour, and a 13-second/vehicle delay, which is LOS B, in the PM peak hour under the No Build condition. Some intersections have not been assessed for 2042 No Build operations, pending decisions on the alignment.
[b] This column shows the peak hour delay in seconds per vehicle, followed by the LOS. Yellow-shaded and bolded cells are those intersections where adverse effects are identified.
LOS = level-of -service

3.4.1.7 Maintenance and Storage Facility

Two potential site locations for the MSF have been identified and evaluated—one in the City of Bellflower and one in the City of Paramount. Only one MSF would be constructed as part of the Project.

Paramount MSF Site Option

The Paramount MSF site's major street is to the north at Rosecrans Avenue. The streets adjacent to the Paramount MSF site option mainly serve industrial/commercial facilities and the area is heavily traveled to the west by commercial vehicles. Rosecrans Avenue, Garfield Avenue, and Paramount Boulevard (north of Rosecrans Avenue) are designated truck routes near the Paramount MSF site option. Access to major streets is limited through Bianchi Way. East of the site, Paramount Boulevard (south of Rosecrans Avenue) and residential streets restrict commercial vehicle traffic. Access to the nearby I-710 and I-105 freeways are through Rosecrans Avenue, Garfield Avenue, and Paramount Boulevard. Traffic density around the site and on the local roadway network is moderate with the peak periods heavily traveled.

To assess potential impacts, traffic volumes from the Paramount MSF site option were evaluated. A peak hour trip generation rate was determined from driveway traffic counts at the Metro Division 22 LRT maintenance facility serving the Metro C (Green) Line (at 14724 Aviation Boulevard in Lawndale). The projected traffic to and from the Paramount MSF is 23 vehicle trips in the AM peak hour and 26 vehicle trips in the PM hour. These values are below LADOT's 2016 *Transportation Impact Study Guidelines* threshold for new developments (43 vehicle trips during the AM/PM peak hours). Therefore, the effect on traffic would not be adverse.

Trains entering and exiting the MSF would have to use the existing at-grade rail crossing on Rosecrans Avenue (between the signalized intersection at Garfield Avenue and Bianchi Way). The timing and frequency of these crossing events are anticipated to occur during off-peak traffic hours when traffic volumes would be lower. Therefore, these impacts would be not be substantial.

Bellflower MSF Site Option

The main street for access to the Bellflower MSF site is immediately north at Somerset Boulevard. The streets adjacent to the site mainly serve residential areas. The area is lightly traveled by commercial vehicles, and commercial vehicle traffic in the area is restricted to Somerset Boulevard. Somerset Boulevard and Clark Avenue are designated as truck routes near the Bellflower MSF site option. Access to the nearby I-105 freeway is through Somerset Boulevard, Lakewood Boulevard, Downey Avenue, and Clark Avenue. Traffic density around this site and local roadway network is moderate with the peak periods heavily traveled.

As with the Paramount MSF site option, the Bellflower MSF site option was considered to be similar to the Metro Division 22 LRT maintenance facility in purpose and operation. The projected traffic to and from the Bellflower MSF is 23 vehicle trips in the AM peak hour and 26 vehicle trips in the PM peak hour. LADOT's 2016 *Transportation Impact Study Guidelines* provides a threshold for new developments at 43 vehicle trips during the AM/PM peak hours. Because the projected peak hour vehicular trips generated by the proposed MSF are lower than LADOT's thresholds, the effect on traffic would not be adverse. There are no at-grade crossings between the proposed MSF site and the mainline rail. Therefore, no additional at-grade crossing impacts are anticipated.

3.4.2 Transit

This section describes the horizon year 2042 transit operating conditions for the No Build Alternative and each Build Alternative to identify potential impacts of the Project on transit service. Travel demand forecasts for the horizon year 2042 were developed using Metro's Corridors Base Model. Because transit services (e.g., bus routes and rail lines) are not confined to specific locations, the evaluation in this section is conducted for the Study Area as a whole.

In addition to systemwide metrics, the transit analysis considered the change in boardings on each of the connecting rail and bus lines. The analysis also considered the change in transit travel times with and without the Project.

3.4.2.1 No Build Alternative

The No Build Alternative represents transit service in the Study Area in the year 2042 if the Project is not built. The No Build Alternative transit network includes the bus and rail system programmed in Measure M by 2042 without the Project. Transit improvements included in the No Build Alternative are the Metro Eastside Transit Corridor Phase 2, the

Metro Regional Connector, the East San Fernando Valley Transit Corridor, and the Sepulveda Transit Corridor. Assumptions made may not reflect actual alignment and operating scenarios, as planning work advances on future projects. The opening of the Regional Connector would result in a change to Metro Rail operations with the creation of a North-South Line (current Metro A (Blue) and L (Gold) Lines) and an East-West Line (current E (Expo) Line and Metro L (Gold) Line Eastside Extension). Additional detail on the No Build Alternative is provided in Section 5.2.1 of the Transportation Impact Analysis Report (Appendix D).

3.4.2.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Alternative 1 largely assumes the same transit operating conditions as the No Build Alternative but also includes the addition of the Project. Off-street bus bays would be provided at select stations in the event that local transit providers decide to serve these stations in the future. Metro and/or the provider would conduct the necessary public outreach at the time route changes are made. Headways for all rail and bus lines, with the exception of the Project, would be the same under the No Build Alternative and Alternative 1. The alignments and headways for Alternative 1 are summarized in Table 3.19. Because the evaluation of transit conditions is broad, the evaluation in this section is conducted for the Study Area as a whole without specific analyses for the various areas of the Project.

Table 3.19. Proposed Headways for the Build Alternatives by Time Period

Alternative	Alignment	Weekday Headways	
		Peak	Off-Peak
Alternative 1	LAUS (Forecourt) – Pioneer	5	10
Alternative 2	7th St/Metro Center – Pioneer	2.5* - 5	10
Alternative 3	Slauson/A (Blue) Line – Pioneer	5	10
Alternative 4	I-105/C (Green) Line – Pioneer	5	10
Design Option 1 (MWD)	LAUS (MWD) — Pioneer	5	10
Design Option 2	LAUS (Forecourt) – Pioneer	5	10

Source: Prepared for Metro in 2021
Notes: * 2.5-minute headways proposed for Alternative 2 during 1 hour of weekday peak periods for the section between the 7th St/Metro Center Station and the Slauson/A Line Station.
LAUS = Los Angeles Union Station; MWD = Metropolitan Water District

The transit analysis considers the following metrics to assess the impact of Alternative 1 on the regional transit network:

- **Daily linked fixed-guideway trips:** A trip from origin to destination on the Metro Rail or BRT system, or the Metrolink commuter rail system. Even if a person must make several transfers during a journey, the trip is counted as one linked trip.
- **Daily linked bus trips:** A trip from origin to destination on the countywide bus system. Even if a person must make several transfers during a journey, the trip is counted as one linked trip on the countywide bus system.
- **Daily linked transit trips:** A trip from origin to destination on the countywide transit system (includes bus and rail modes). Even if a person must make several transfers

during a journey, the trip is counted as one linked trip on the countywide transit system.

- **Daily linked trips:** A trip from origin to destination utilizing any travel mode. Even if a person uses multiple modes or transfers within (bus to bus) or between modes (car to rail), the trip is counted as one linked trip on the system.
- **Total transit mode share:** The percentage share that transit has in relation to all modes of travel.
- **New transit trips:** The number of daily trips shifted from another mode (e.g., automobile) to transit with the implementation of the Project compared to the No Build Alternative.

Table 3.20 summarizes the projected number of countywide trips for the No Build Alternative and Alternative 1 based on forecasts from Metro's Corridors Base Model for the year 2042. Because the data are presented for the whole of LA County, the opening of the Project has a relatively small impact on overall transit ridership because it only serves a portion of the county.

Table 3.20. Regional Transit Performance Metrics – Los Angeles County for No Build Alternative and Build Alternatives (2042)

	No Build Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Design Option 1 (MWD)	Design Option 2 (Add Little Tokyo)
Daily linked fixed-guideway trips	781,687	803,831	806,202	793,125	787,517	804,748	801,951
Daily linked bus trips	965,231	961,462	960,940	962,999	964,150	961,459	961,974
Daily linked transit trips	1,746,918	1,765,293	1,767,142	1,756,124	1,751,667	1,766,207	1,763,925
Daily linked trips (Total all modes)	77,653,003	77,653,002	77,653,009	77,652,994	77,653,006	77,653,002	77,653,008
Total transit mode share	2.25%	2.27%	2.28%	2.26%	2.26%	2.27%	2.27%
Daily new transit trips	N/A	18,375	20,224	9,206	4,749	19,289	17,007

Source: Metro 2018f
Note: MWD = Metropolitan Water District; N/A = not applicable

Conditions under the No Build Alternative provide a basis of comparison for transit usage for Alternative 1 because the No Build Alternative includes all planned improvements for the year 2042 except the Project. Under the No Build Alternative, daily transit trips are projected to exceed 1.7 million in the year 2042, which would account for approximately 2.25 percent of the 77.7 million daily trips in the region.

Under Alternative 1, the number of countywide transit trips would increase compared to the No Build Alternative. As shown in Table 3.20, approximately 1.77 million daily transit trips are projected under Alternative 1. With the alternative, approximately 18,000 additional new daily transit trips are projected than would occur under the No Build Alternative. The overall

transit mode share would increase to approximately 2.27 percent for Alternative 1. Because Alternative 1 would increase transit's mode share, it would have a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.21. Daily boardings at each proposed station are presented in Table 3.22.

Table 3.21. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 1 (2042)

Line	No Build	Alternative 1	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	60,839	N/A
North-South	212,478	201,084	-5.4%
East-West	135,297	133,079	-1.6%
Metro D (Purple) Line	214,457	216,629	1.0%
Metro B (Red) Line	122,074	122,277	0.2%
Metro C (Green) Line	112,600	110,620	-1.8%

Source: Metro 2018f
Notes: N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.22. Station Boardings for Alternative 1 (2042)

Station	Alternative 1
Los Angeles Union Station	20,376
Little Tokyo	N/A
Arts/Industrial District (Alternative 1)	2,175
7th St/Metro Center	N/A
South Park/Fashion District	N/A
Arts/Industrial District (Alternative 2)	N/A
Slauson/A Line	8,438
Pacific/Randolph	3,096
Florence/Salt Lake	4,144
Firestone	4,941
Gardendale	1,272
I-105/C Line	5,797
Paramount/Rosecrans	2,245
Bellflower	2,649
Pioneer	5,706
Total Daily Boardings	**60,839**

Source: Metro 2018f
Note: N/A = not applicable

The number of bus trips made systemwide would decrease slightly under Alternative 1. Most lines that run parallel to the alternative would experience a slight decrease in boardings because Alternative 1 would provide faster and more reliable service. However, many of the routes that cross the corridor may experience a slight increase in boardings as passengers use these routes to access stations along the Project. More detailed information on the existing Metro Rail and bus service performance is provided in the Transportation Impact Analysis Report (Appendix D).

With Alternative 1, boardings on the future North-South Line (the current Metro A [Blue] and L [Gold] Lines with Regional Connector) would decrease, as the Project provides parallel north-south service into Downtown LA. By providing parallel service, Alternative 1 may help to alleviate some of the overcrowding currently experienced on the Metro A (Blue) Line. Similarly, boardings on the Metro C (Green) Line would slightly decrease. The impacts of Alternative 1 to boardings on the East-West Line (current Metro E [Expo] and L [Gold] Lines) and the B (Red) and D (Purple) Lines depend on the route selected into Downtown LA. With Alternative 1, boardings on the East-West Line would increase as passengers would transfer to the line to reach the downtown business core. Overall, impacts from Alternative 1 would be beneficial because a new LRT line would increase transit service in the Study Area. Under NEPA, Alternative 1 would not result in adverse effects related to transit service, and mitigation is not required.

3.4.2.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The transit operating conditions described in Section 3.4.2.2 are also applicable to Alternative 2. The alignment and headways for Alternative 2 are summarized in Table 3.19. Alternative 2 is the only alternative to have 2.5-minute headways proposed during 1 hour of weekday peak periods for the section between the 7th St/Metro Center Station and the Slauson/A Line Station.

Table 3.20 summarizes the projected number of countywide trips for the No Build Alternative and Alternative 2 based on forecasts from Metro's Corridors Base Model for the year 2042. Under Alternative 2, the number of countywide transit trips would increase compared to the No Build Alternative. As shown in Table 3.20, approximately 1.77 million daily transit trips are projected under Alternative 2. The alternative is projected to result in 20,000 additional new daily transit trips than under the No Build Alternative. The overall transit mode share would increase to approximately 2.28 percent for Alternative 2. Because Alternative 2 would increase transit's mode share, it would have a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.23. Daily boardings at each proposed station are presented in Table 3.24. With Alternative 2, boardings on the future North-South Line (the current Metro A [Blue] and L [Gold] Lines with Regional Connector) would decrease, as the Project would provide parallel north-south service into Downtown LA. By providing parallel service, Alternative 2 could help to alleviate some of the overcrowding currently experienced on the Metro A (Blue) Line. Similarly, boardings on the Metro C (Green) Line would slightly decrease. The impacts of Alternative 2 to boardings on the East-West (current E [Expo] and Metro L [Gold] Lines) and the Metro B (Red) and D (Purple) Lines would depend on the route selected into Downtown LA. Alternative 2 would provide the greatest decrease in boardings on the North-South Line because it provides the most direct parallel service into the downtown business core. Under Alternative 2, boardings on the Metro B (Red) and D (Purple) Lines would increase slightly, and boardings on the East-West Line would decrease slightly. Overall, impacts from Alternative 2 would be beneficial because a new

LRT line would increase transit service in the Study Area. Under NEPA, Alternative 2 would not result in adverse effects related to transit service, and mitigation is not required.

Table 3.23. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 2 (2042)

Line	No Build	Alternative 2	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	82,826	N/A
North-South	212,478	194,863	-8.3%
East-West	135,297	134,537	-0.6%
Metro D (Purple) Line	214,457	223,060	4.0%
Metro B (Red) Line	122,074	126,391	3.5%
Metro C (Green) Line	112,600	109,073	-3.1%

Source: Metro 2018f
Notes: N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.24. Station Boardings for Alternative 2 (2042)

Station	Alternative 2
Los Angeles Union Station	N/A
Little Tokyo	N/A
Arts/Industrial District (Alternative 1)	N/A
7th St/Metro Center	30,905
South Park/Fashion District	1,972
Arts/Industrial District (Alternative 2)	2,110
Slauson/A Line	15,135
Pacific/Randolph	3,473
Florence/Salt Lake	4,655
Firestone	5,473
Gardendale	1,371
I-105/C Line	6,414
Paramount/Rosecrans	2,400
Bellflower	2,819
Pioneer	6,099
Total Daily Boardings	**82,826**

Source: Metro 2018f
Note: N/A = not applicable

3.4.2.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The transit operating conditions described in Section 3.4.2.2 are also applicable to Alternative 3. The alignment and headways for Alternative 3 are summarized in Table 3.19.

Table 3.20 summarizes the projected number of countywide trips for the No Build Alternative and Alternative 3 based on forecasts from Metro's Corridors Base Model for the year 2042. Under Alternative 3, the number of countywide transit trips would increase compared to the No Build Alternative, but there would be fewer transit trips than under Alternatives 1 and 2. As previously shown in Table 3.20, Alternative 3 is projected to result in 1.76 million daily transit trips, with 9,000 more new transit trips than the No Build Alternative. The increase in transit trips under Alternative 3 is not as high as Alternatives 1 and 2 but would increase the overall transit mode share compared to the No Build Alternative, resulting in a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.25. Daily boardings at each proposed station are presented in Table 3.26. Compared to the No Build Alternative, Alternative 3 would result in a slight increase in boardings on the North-South and Metro D (Purple) and B (Red) Lines. Alternative 3 would result in a decrease in boardings on both the East-West Line and the Metro C (Green) Line. Because Alternative 3 continues north past the Metro C (Green) Line to the North-South Line, passengers would not be forced to transfer at the Metro C (Green) Line as with Alternative 4. Unlike Alternatives 1 and 2, Alternative 3 would increase ridership on the North-South Line because passengers would transfer to this line to reach destinations north, including downtown Los Angeles. Therefore, Alternative 3 would not help to alleviate overcrowding on the North-South Line. Overall, impacts from Alternative 3 would be beneficial because a new LRT line would increase transit service in the Study Area. Under NEPA, Alternative 3 would not result in adverse effects related to transit service, and mitigation is not required.

Table 3.25. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 3 (2042)

Line	No Build	Alternative 3	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	30,964	N/A
North-South	212,478	213,941	0.7%
East-West	135,297	134,129	-0.9%
Metro D (Purple) Line	214,457	215,692	0.6%
Metro B (Red) Line	122,074	122,513	0.4%
Metro C (Green) Line	112,600	111,338	-1.1%

Source: Metro 2018f
Notes: N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.26. Station Boardings for Alternative 3 (2042)

Station	Alternative 3
Los Angeles Union Station	N/A
Little Tokyo	N/A
Arts/Industrial District (Alternative 1)	N/A
7th St/Metro Center	N/A
South Park/Fashion District	N/A
Arts/Industrial District (Alternative 2)	N/A
Slauson/A Line	7,987
Pacific/Randolph	2,153
Florence/Salt Lake	3,132
Firestone	3,834
Gardendale	1,013
I-105/C Line	4,477
Paramount/Rosecrans	1,752
Bellflower	2,187
Pioneer	4,432
Total Daily Boardings	**30,964**

Source: Metro 2018f
Note: N/A = not applicable

3.4.2.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The transit operating conditions described in Section 3.4.2.2 are also applicable to Alternative 4. The alignment and headways for Alternative 4 are summarized in Table 3.19. Table 3.20 is a summary of the projected number of countywide trips for the No Build Alternative and Alternative 4 based on forecasts from Metro's Corridors Base Model for the year 2042. Under Alternative 4, the number of countywide transit trips would increase compared to the No Build Alternative, but there would be fewer transit trips than under Alternatives 1 and 2. As previously shown in Table 3.20, Alternative 4 is projected to result in 1.75 million daily transit trips, with 5,000 more new transit trips than the No Build Alternative. Alternative 4 does not increase transit trips as much as Alternatives 1 and 2, but they still provide 25 percent of the benefit. In other words, it would increase the overall transit mode share compared to the No Build Alternative, resulting in a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.27. Daily boardings at each proposed station are presented in Table 3.28. Compared to the No Build Alternative, Alternative 4 would result in a slight increase in boardings on the North-South and Metro D (Purple) and B (Red) Lines. Alternative 4 would result in a 3 percent increase in boardings on the Metro C (Green) Line because the alternative would terminate at the I-105/C Line Station, and passengers would be forced to transfer to the Metro C (Green) Line to reach destinations farther north. As with Alternative 3, Alternative 4 would increase ridership on the North-South Line because passengers would transfer to this line to reach destinations north, including downtown Los Angeles. Therefore, Alternative 4 would not help to alleviate overcrowding on the North-South Line. Overall, impacts from Alternative 4 would be beneficial because a new LRT line would increase transit service in the Study Area. Under NEPA, Alternative 4 would not result in adverse effects related to transit service, and mitigation is not required.

Table 3.27. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 4 (2042)

Line	No Build	Alternative 4	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	11,119	N/A
North-South	212,478	213,271	0.4%
East-West	135,297	135,320	0.0%
Metro D (Purple) Line	214,457	214,870	0.2%
Metro B (Red) Line	122,074	122,230	0.1%
Metro C (Green) Line	112,600	117,030	3.9%

Source: Metro 2018f
Notes: N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.28. Station Boardings for Alternative 4 (2042)

Station	Alternative 4
Los Angeles Union Station	N/A
Little Tokyo	N/A
Arts/Industrial District (Alternative 1)	N/A
7th St/Metro Center	N/A
South Park/Fashion District	N/A
Arts/Industrial District (Alternative 2)	N/A
Slauson/A Line	N/A
Pacific/Randolph	N/A
Florence/Salt Lake	N/A
Firestone	N/A
Gardendale	N/A

Station	Alternative 4
I-105/C Line	4,529
Paramount/Rosecrans	1,412
Bellflower	1,792
Pioneer	3,388
Total Daily Boardings	**11,119**

Source: Metro 2018f
Note: N/A = not applicable

3.4.2.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD

The transit operating conditions described in Section 3.4.2.2 are also applicable to Alternative 1 with Design Option 1 (MWD). The alignment and headways for Alternative 1 with Design Option 1 (MWD) are summarized in Table 3.19. Table 3.20 summarizes the projected number of countywide trips for the No Build Alternative and Alternative 1 with Design Option 1 (MWD) based on forecasts from Metro's Corridors Base Model for the year 2042. Under Alternative 1 with Design Option 1 (MWD), if the LAUS entrance is located near the MWD Building, the number of new transit trips is expected to be approximately 1,000 more than the Forecourt location, with 19,000 new daily transit trips, as shown in Table 3.20. The total transit mode share would remain the same as under Alternative 1 at 2.27 percent. Design Option 1 (MWD) may increase transit usage more than Alternative 1 because the transfer at LAUS between WSAB and the B (Red) and D (Purple) Lines would be shorter than under the LAUS Forecourt Station. As Design Option 1 (MWD) would still increase the overall transit mode share, it would have a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.29. Daily boardings at each proposed station are presented in Table 3.30. Under Design Option 1 (MWD), the effect of the Project on Metro rail lines and bus lines within the Study Area is similar to Alternative 1. However, if the LAUS entrance is shifted to the MWD Building instead of the Forecourt, the number of boardings at LAUS would double because the transfer distance between the Project and the Metro B (Red) and D (Purple) Lines is much shorter under Design Option 1 (MWD). The effect of Design Option 1 (MWD) on bus lines within the Study Area would be similar to Alternative 1. As Design Option 1 (MWD) would be underground, it would not introduce any new traffic impacts that were not already identified under Alternative 1, and therefore would not have any additional impacts to bus operations in mixed-flow traffic. Mode of access would be similar to Alternative 1 under Design Option 1 (MWD). Overall, impacts from Design Option 1 (MWD) would be beneficial because increased levels of transit service would be provided by a new LRT line.

Table 3.29. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 1 with Design Option 1 (2042)

Line	No Build	Alternative 1 with Design Option 1 (MWD)	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	65,158	N/A
North-South	212,478	205,888	-3.1
East-West	135,297	137,181	1.4
Metro D (Purple) Line	214,457	213,679	-0.4
Metro B (Red) Line	122,074	119,621	-2.0
Metro C (Green) Line	112,600	110,803	-1.6

Source: Metro 2018f
Notes: LAUS = Los Angeles Union Station; MWD = Metropolitan Water District; N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.30. Station Boardings for Alternative 1 with Design Option 1 (2042)

Station	Alternative 1 with Design Option 1 (MWD)
Los Angeles Union Station	20,632
Little Tokyo	N/A
Arts/Industrial District (Alternative 1)	2,238
7th St/Metro Center	N/A
South Park/Fashion District	N/A
Arts/Industrial District (Alternative 2)	N/A
Slauson/A Line	11,087
Pacific/Randolph	3,356
Florence/Salt Lake	4,412
Firestone	5,196
Gardendale	1,325
I-105/C Line	5,981
Paramount/Rosecrans	2,320
Bellflower	2,714
Pioneer	5,897
Total Daily Boardings	**65,158**

Source: Metro 2018f
Note: MWD = Metropolitan Water District; N/A = not applicable

Design Option 2: Add Little Tokyo Station

The transit operating conditions described in Section 3.4.2.2 are also applicable to Alternative 1 with Design Option 2. The alignment and headways for Alternative 1 with Design Option 2 are summarized in Table 3.19. Table 3.20 summarizes the projected number of countywide trips for the No Build Alternative and Alternative 1 with Design Option 2 based on forecasts from Metro's Corridors Base Model for the year 2042. If the Little Tokyo Station is included in

Alternative 1, the number of new transit trips is expected to increase by approximately 1,400 daily trips to 17,000 new daily transit trips, as previously shown in Table 3.20. The overall transit mode share would still increase to 2.27 percent. Because Design Option 2 would still increase the overall transit mode share, it would have a beneficial impact on the transit system.

The projected number of daily boardings on each Metro rail line that serves the Study Area is presented in Table 3.31. Daily boardings at each proposed station are presented in Table 3.32. Boardings on the East-West Line would increase and boardings on the Metro B (Red) and D (Purple) Lines would decrease as passengers would have to transfer at Little Tokyo instead of LAUS to the Metro B (Red) or D (Purple) Line to reach the downtown business core. The Little Tokyo Station would provide an earlier transfer point than having to travel to LAUS, reducing overall travel time to destination points in the central business district. As a result, project boardings at LAUS would decrease compared to Alternative 1. The effect of Design Option 2 on bus lines within the Study Area would be similar to Alternative 1. Mode of access would be similar to Alternative 1 under Design Option 2. Overall, impacts from Design Option 2 would be beneficial because increased levels of transit service would be provided by a new LRT line.

Table 3.31. WSAB Project and Metro Rail Daily Boardings by Line (within Study Area) for No Build Alternative and Alternative 1 with Design Option 2 (2042)

Line	No Build	Alternative 1 with Design Option 2	
	Number of Daily Boardings	Number of Daily Boardings	% Change from No Build
WSAB	N/A	68,785	N/A
North-South	212,478	209,668	-1.3%
East-West	135,297	142,759	5.5%
Metro D (Purple) Line	214,457	214,182	-0.1%
Metro B (Red) Line	122,074	119,937	-1.7%
Metro C (Green) Line	112,600	110,479	-1.9%

Source: Metro 2018f
Notes: N/A = not applicable; WSAB = West Santa Ana Branch

Table 3.32. Station Boardings for Alternative 1 with Design Option 2 (2042)

Station	Alternative 1 with Design Option 2
Los Angeles Union Station	9,610
Little Tokyo	16,002
Arts/Industrial District (Alternative 1)	2,119
7th St/Metro Center	N/A
South Park/Fashion District	N/A
Arts/Industrial District (Alternative 2)	N/A
Slauson/A Line	10,406
Pacific/Randolph	3,279
Florence/Salt Lake	4,314
Firestone	5,084

Station	Alternative 1 with Design Option 2
Gardendale	1,303
I-105/C Line	5,893
Paramount/Rosecrans	2,285
Bellflower	2,677
Pioneer	5,814
Total Daily Boardings	**68,786**

Source: Metro 2018f
Note: N/A = not applicable

3.4.2.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The Paramount and Bellflower MSF site options would not affect regional transit performance because the options would not alter existing or planned transit routes or station locations.

3.4.3 Active Transportation

The active transportation evaluation considers potential impacts to existing and funded pedestrian and bicycle facilities. Impacts would occur if the Project would remove or degrade a bike facility or sidewalk. Beneficial impacts may occur where new facilities are added or existing facilities are upgraded. The potential for pedestrian and bicycle impacts is evaluated in the areas adjacent to stations and along the alignment. Because the evaluation of active transportation is broad, the evaluation in this section is conducted for the Study Area. In addition, the new transit service provided by the Build Alternatives would increase demand on bicycle and pedestrian facilities.

As summarized in Chapter 4, Section 4.1 (Land Use), jurisdictions in the Study Area have planned bicycle facilities. Because these facilities are not currently funded or scheduled for implementation, they are not considered reasonably foreseeable. Therefore, potential transportation impacts to these facilities are not evaluated within this section. Refer to Section 3.6.1 and Section 4.1 for a summary of potential impacts to these facilities from the perspective of consistency with adopted plans and policies.

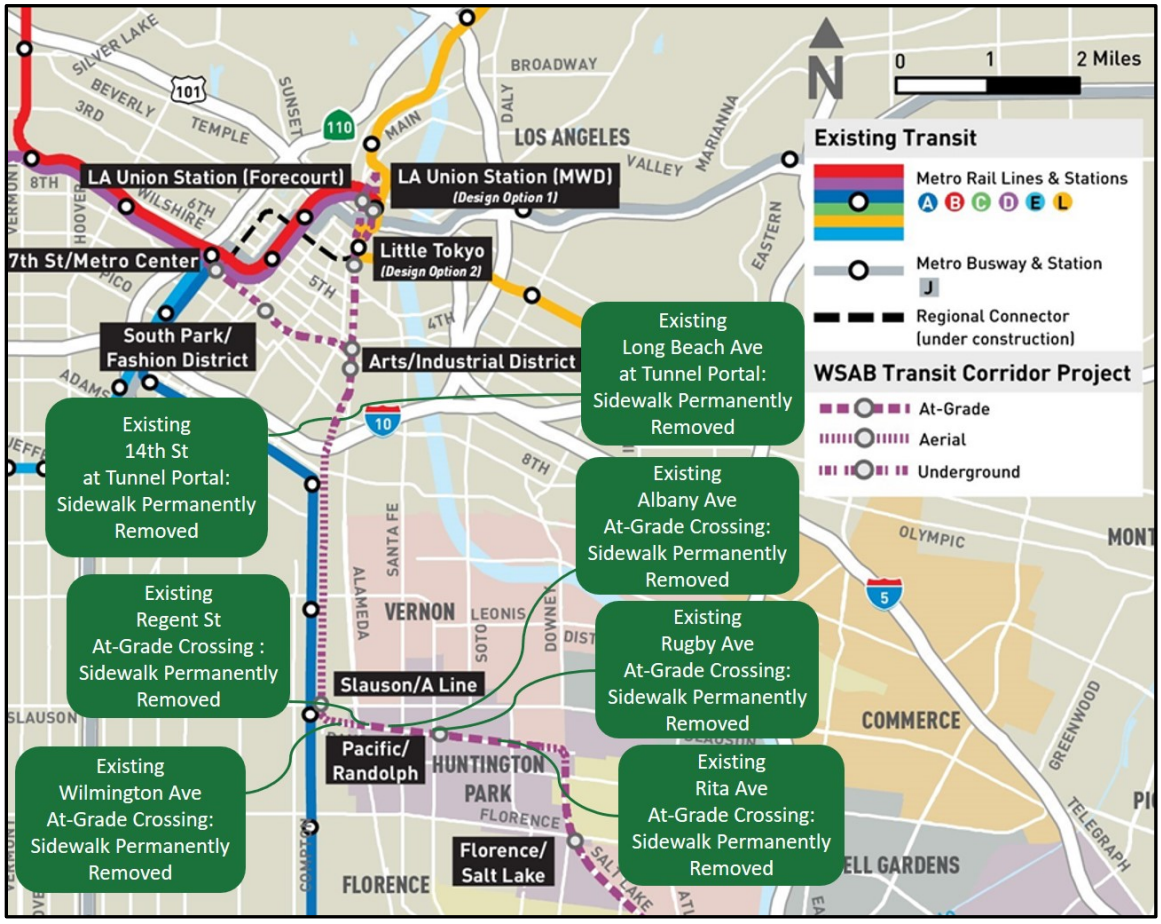
3.4.3.1 No Build Alternative

The committed and planned projects under the No Build Alternative may include potential impacts to and/or incorporation of active transportation elements to stand-alone or integrated projects. However, these projects and their potential impacts to active transportation elements would be subject to their own independent environmental review and approval process, which would identify and address potential impacts.

3.4.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

The bicycle and pedestrian system under Alternative 1 would generally be the same as with the No Build Alternative. Where features associated with Alternative 1 would encroach on existing bicycle facilities or sidewalks, these facilities would be realigned or reconstructed as part of Alternative 1, so the potential for permanent impacts would be avoided. Figure 3-8 and Figure 3-9 show the locations where Alternative 1 would remove or relocate existing pedestrian and bicycle facilities. These impacts are summarized as follows.

Figure 3-8. Active Transportation Facilities Removed or Relocated by the Project – Los Angeles to Huntington Park



Source: Metro 2021s

Figure 3-9. Active Transportation Facilities Removed or Relocated by the Project – Huntington Park to Artesia

Source: Metro 2021s

Alternative 1 would require closure of six existing at-grade crossings and one street closure to accommodate the tunnel portal. In these locations, the sidewalks would also be removed as they would no longer be required. Five of the at-grade crossing closures would occur along Randolph Street at: Wilmington Avenue, Regent Street, Albany Avenue, Rugby Avenue, and Rita Avenue. The other at-grade crossing closure would occur at 187th Street in Artesia. The street closure to accommodate the tunnel portal would occur along Long Beach Avenue between Olympic Boulevard and 14th Street. A portion of 14th Street just west of Long Beach Avenue would be closed as well.

Alternative 1 would be adjacent to the Paramount Bike Trail and Bellflower Bike Trail, located parallel along and partially within the Pacific Electric Right-of-Way (PEROW) in the Cities of Paramount and Bellflower. The Paramount Bike Trail is located south and adjacent to the rail ROW. Currently, the Paramount Bike Trail is between Somerset Boulevard and Lakewood Boulevard, but it is ultimately planned to be extended from the Los Angeles River

Bike Trail and connect to the Bellflower Bike Trail at Lakewood Boulevard. The Bellflower Bike Trail is located within the existing PEROW between Lakewood Boulevard and Ruth R. Caruthers Park and connects to the San Gabriel River Bike Trail.

The Paramount Bike Trail segment between Somerset Boulevard and Lakewood Boulevard is located within the PEROW. Segments of the PEROW extending south from the intersection of Rosecrans Avenue and Paramount Boulevard to Lakewood Boulevard may not have sufficient room to accommodate the alignment of Alternative 1, which may require a realignment of the Paramount Bike Trail. Specifically, under Alternative 1, tracks would be installed along the southwest side of the PEROW along this segment. To accommodate the track alignment, Alternative 1 would require the removal of an approximately 930-foot-long segment of the existing Paramount Bike Trail between Somerset Boulevard and Lakewood Boulevard. As part of Mitigation Measure LU-1 (Consistency with Bike Plans), as described in Section 4.1.4 of the Land Use Section, this segment of the existing bike trail would be realigned to the north side but within the PEROW in this area. The relocation of this segment of the Paramount Bike Trail would require users of the bike trail to cross the railroad tracks at Lakewood Boulevard to access the bike trail across the street. Although segments of the Paramount Bike Trail would be realigned, the bike trail would remain operational and the existing segment east of Lakewood Boulevard would remain..

Additionally, under Alternative 1 the Bellflower Station platform and tracks would conflict with an approximately 350-foot-long segment of the existing Bellflower Bike Trail east of Bellflower Boulevard. As part of Mitigation Measure LU-1 (Consistency with Bike Plans), as described in Section 4.1.4 of the Land Use Section, this segment of the existing bike trail would be realigned to the south side of the PEROW. The existing segment west of Bellflower Boulevard would remain.

Overall, although segments of the Paramount Bike Trail and Bellflower Bike Trail would be realigned with implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), the bike trails would remain operational within the PEROW and the function of the bike trails would be maintained. Therefore, continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail would be maintained and with mitigation, there would not be adverse effects to these facilities.

The Alternative 1 alignment has been developed in consideration of the planned bike trail extension north of Somerset Boulevard to Paramount Park as identified in the *Bellflower-Paramount Active Transportation Plan* (City of Bellflower and City of Paramount 2019).

Alternative 1 would also include a wide range of features to enhance active transportation facilities for the benefit of users, including physical improvements (e.g., barriers and gates), channelization and signing, illumination, and other design improvements that would enhance user experience and security. Where new pedestrian trips would occur between stations and parking areas, pedestrian facilities would be enhanced with improved signing and lighting as part of the Project. Additional sidewalks and bicycle facilities implemented as part of the Project would result in a beneficial impact, both for active transportation users accessing the stations and for the broader community. Additional detail regarding design improvements are provided in Sections 4.1.2 and 5.2.3 of the *West Santa Ana Branch Safety and Security Impact Analysis Report* (Metro 2021c) (Appendix F) and Section 4.18 of the Safety and Security Section.

Under NEPA, Alternative 1 would result in adverse effects related to the Paramount and Bellflower Bike Trails. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), these existing active transportation facilities would be realigned to maintain continuity. Therefore, there would not be adverse effects to these facilities with mitigation.

3.4.3.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The impact analysis described in Section 3.4.3.2 is also applicable to Alternative 2. As discussed in Section 3.4.3.2, the bicycle and pedestrian system with Alternative 2 would be the same as with Alternative 1 (see Figure 3-8 and Figure 3-9). The impact conclusions identified for Alternative 1 are also applicable for Alternative 2. Under NEPA, Alternative 2 would result in adverse effects related to the Paramount and Bellflower Bike Trails. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), these existing active transportation facilities would be realigned to maintain continuity. Therefore, there would not be adverse effects to these facilities with mitigation.

3.4.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The impact analysis described in Section 3.4.3.2 is also applicable to Alternative 3. As discussed in Section 3.4.3.2, the bicycle and pedestrian system with Alternative 3 would be the same as with Alternative 1 (see Figure 3-8 and Figure 3-9). The impact conclusions identified for Alternative 1 are also applicable for Alternative 3. Under NEPA, Alternative 3 would result in adverse effects related to the Paramount and Bellflower Bike Trails. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans), these existing active transportation facilities would be realigned to maintain continuity. Therefore, there would not be adverse effects to these facilities with mitigation.

3.4.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The impact analysis described in Section 3.4.3.2 is also applicable to Alternative 4. As discussed in Section 3.4.3.2, the bicycle and pedestrian system with Alternative 4 would be the same as with Alternative 1 south of I-105 (see Figure 3-9).Under NEPA, Alternative 4 would result in adverse effects related to the Paramount and Bellflower Bike Trails prior to mitigation. With implementation of Mitigation Measure LU-1 (Consistency with Bike Plans) these existing active transportation facilities would maintain continuity. Therefore, there would not be adverse effects to these facilities with mitigation.

3.4.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

The impact analysis described in Section 3.4.3.2 is also applicable to Design Options 1 and 2. Similar to Alternative 1, the bicycle and pedestrian system with Design Options 1 and 2 would generally be the same as with the No Build Alternative. Where construction would encroach on existing bicycle facilities or sidewalks, these facilities would be realigned or reconstructed as part of the Project. Under NEPA, Design Options 1 and 2 would not result in adverse effects to active transportation facilities.

3.4.3.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The Paramount MSF site option would not affect active transportation facilities because it would not result in the closure of sidewalks or bicycle facilities. Therefore, no impacts related to active transportation are anticipated and no resulting adverse effects would occur.

The realignment of the segment of the Bellflower Bike Trail located within the PEROW may preempt future development and implementation of the Bellflower Bike Trail to the west of the Bellflower MSF site option. Implementation of Mitigation Measure LU-1 (Consistency

with Bike Plans) would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. Therefore, although changes related to active transportation are anticipated, no adverse effect would occur.

3.4.4 Parking

As summarized in Section 3.2.4, effects to parking were assessed considering how the Build Alternatives would effect on- and off street parking supplies, and whether the demand for transit parking would exceed the available parking supply, resulting in spillover. The evaluation considered parking availability from field observation, the expected demand for park-and-ride trips at each station, and the addition (through a new dedicated transit park-and-ride lot) or reduction (parking permanently removed to accommodate a Build Alternative) of parking spaces.

3.4.4.1 No Build Alternative

The committed and planned projects under the No Build Alternative may include potential impacts to parking through removal, modification, or reductions to existing parking resources. However, these projects and their potential parking impacts would be subject to their own independent and required environmental approval process, which would identify and address potential impacts.

3.4.4.2 Alternative 1: Los Angeles Union Station to Pioneer Station

The following sections summarize the permanent physical loss of on- and off-street parking that would occur with implementation of Alternative 1. Additionally, spillover parking impacts associated with the demand for transit parking is also evaluated. As summarized in Table 3.33 and Table 3.34, Alternative 1 would result in the permanent loss of approximately 136 on-street and 133 off-street parking spaces. Alternative 1 would add 2,779 parking spaces at five of the proposed new transit stations.

On- and Off-Street Parking Impacts

The results of the on-street parking impact analysis are summarized in Table 3.33. As shown, under Alternative 1, on-street parking would remain unchanged along the majority of the proposed project alignment. On-street parking would be removed at four locations (two in the City of Los Angeles, one in Huntington Park, and one in South Gate). Implementation of Alternative 1 would require the removal of all on-street parking spaces at two of the four locations (one in the City of Los Angeles and one in South Gate), which could result in an adverse effect. The loss of parking at these locations is described further in the text that follows.

Table 3.33. On-Street Parking Effects

Location	Jurisdiction	Existing On-Street Parking Spaces	Observed Field Utilization[a]	Parking Spaces Added/ Removed[b]	Alternative(s) Affected	Description of Effect
Los Angeles Union Station	Los Angeles	47	90%	0	1	No change.
Little Tokyo Station	Los Angeles	1,803	90%	0	1	No change.
Arts/Industrial District Station	Los Angeles	980	90%	0	1, 2	No change.
South Park/Fashion District Station	Los Angeles	888	70%	0	2	No change.
7th Street/Metro Center Station	Los Angeles	465	90%	0	2	No change.
Long Beach Avenue between Olympic Boulevard and 14th Street (between Arts/Industrial District and Slauson/A Line Stations)	Los Angeles	20	90%	-20	1, 2	LRT track would displace all of the on-street parking along this segment.
Long Beach Avenue between Vernon Avenue and 24th Street (between Arts/Industrial District and Slauson/A Line Stations)	Los Angeles	109	20%	-25	1, 2	LRT track would remove approximately 23% of the existing on-street parking supply.
Slauson/A Line Station	Los Angeles	729	80%	0	1, 2, 3	No change.
Randolph Street between Holmes Avenue and State Street (between Slauson/A Line Station – through Pacific/Randolph – and Florence/Salt Lake Stations)	Huntington Park	550	70%	-79	1, 2, 3	LRT track would remove approximately 14% of the existing on-street parking supply.
Pacific/Randolph Station	Huntington Park	1,624	60%	0	1, 2, 3	No change.
Florence/Salt Lake Station	Huntington Park	1,106	30%	0	1, 2, 3	No change.
Firestone Station	South Gate	461	50%	+600	1, 2, 3	Alternatives 1, 2, and 3 would add off-street transit parking.

Location	Jurisdiction	Existing On-Street Parking Spaces	Observed Field Utilization[a]	Parking Spaces Added/ Removed[b]	Alternative(s) Affected	Description of Effect
Gardendale Station	Downey	688	40%	0	1, 2, 3	No change.
Main Street Grade Crossing (between Gardendale and I-105/C Line Stations)	South Gate	12	20%	-12	1, 2, 3	LRT track would displace all of the on-street parking along this segment.
I-105/C Line Station	Paramount	818	40%	+326	1, 2, 3, 4	Alternatives 1, 2, 3, and 4 would add off-street transit parking.
Paramount/Rosecrans Station	Paramount	350	70%	+490	1, 2, 3, 4	Alternatives 1, 2, 3, and 4 would add off-street transit parking.
Bellflower Station	Bellflower	576	30%	+263	1, 2, 3, 4	Alternatives 1, 2, 3, and 4 would add off-street transit parking.
Pioneer Station	Artesia	785	20%	+1,100	1, 2, 3, 4	Alternatives 1, 2, 3, and 4 would add off-street transit parking.

Source: Metro 2021s
Notes: [a] Observations made during peak parking periods.
[b] Based on engineering plans included in Appendix B.
LRT = light rail transit

Alternative 1 would remove all 20 on-street parking spaces along Long Beach Avenue, between Olympic Boulevard and 14th Street in the City of Los Angeles, as the Alternative 1 alignment transitions from underground to aerial. As shown in Table 3.33, these spaces were 90 percent utilized (i.e., 18 spaces were occupied at the time of the survey). The land uses adjacent to the street closure are light industrial and warehouse with off-street parking. While the loss of the 20 on-street parking spaces would not affect the function of the adjacent land uses, changes in the location and availability of parking could result in local concern because the destination of those utilizing on-street parking is unknown. A potential consequence of this change in parking is increased traffic circulation on streets near the lost parking as existing drivers utilizing those spaces search for new places to park. This could cause an increase in localized traffic and delay along roadways and at intersections, including a corresponding increase in idling and vehicular emissions, and could result in an adverse effect. Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]), described in Section 3.5.2.4, are proposed to reduce these impacts. Nevertheless, because parking demand, the subsequent strategies that may be utilized, and the community response are unknown, it is possible that adverse effects would remain after mitigation.

Alternative 1 would remove all 12 on-street parking spaces at the Main Street grade crossing location in the City of South Gate. As shown in Table 3.33, these spaces were 20 percent utilized (i.e., 2 spaces were occupied at the time of the survey). The land uses for the properties adjacent to this location include light industrial, warehouse, and a church. The properties to the northeast, southeast, and southwest of the Main Street grade crossing have off-street parking lots that would not be affected by Alternative 1. Additionally, on-street parking is available on adjacent streets to accommodate parking demand, and any circulation on local roads to find parking would be minimal. Therefore, because the loss of the on-street parking spaces on Main Street would not affect the function of the properties and drivers utilizing these spaces would be able to find available on-street parking with minimal circulation, Alternative 1 would not result in an adverse effect.

At the other two locations, the loss of parking would not result in the supply decreasing below the observed utilization. Therefore, it is anticipated that parking demand would be accommodated despite the loss of parking and there would not be adverse effects. While adverse effects are unlikely, the physical loss of parking could contribute to local concern. Mitigation Measure TRA-22 (Parking Mitigation Program [Permanent]) would be implemented at all locations with a physical loss of on-street parking.

Off-street parking effects were analyzed for properties where Alternative 1 would require a permanent property acquisition that would result in the permanent loss of off-street parking spaces. The analysis did not include properties where the permanent acquisition resulted in the loss of all off-street parking and the corresponding business(es) that utilized that supply. This is because the business(es) would no longer exist, and, consequently, the associated parking demand would be eliminated. The loss of off-street parking spaces would, therefore, have no effect on the function of the properties on these site(s).

The off-street parking impacts analysis considered whether the loss of off-street parking spaces would result in the supply for that property to fall below the requirement as per the parking code from the applicable city[2]. Table 3.34 summarizes the impacts at each location. Metro would provide compensation as required under the Uniform Act at properties where off-street parking is removed. Governmental institutions are not required to comply with parking code requirements. These properties are included in the table for completeness but were not assessed further. Metro would enter into an agreement with each of these properties for the use of the existing off-street parking.

Under Alternative 1, there are 12 locations where off-street parking would be removed permanently with a total of 133 parking spaces affected, of which 4 locations and 56 parking spaces are governmental institutions. These properties are located in the Cities of Los Angeles, Huntington Park, Vernon, South Gate, Downey, and Bellflower. The loss of parking would result from the addition of Alternative 1 elements, including ventilation shafts, station entrances, TPSS sites, grade crossing modifications, and the LRT track. The removal of off-street parking spaces would not cause the off-street parking supply to decrease below the respective city parking code requirements and, therefore, would not result in an adverse effect.

[2] City of Los Angeles Municipal Code: Chapter 1 Planning and Zoning Code, Section 12.21 General Provisions; City of South Gate Municipal Code: Chapter 11.33 Parking Standards; City of Huntington Park Municipal Code: Chapter 3 General Regulations Article 8 Off-Street Parking Standards. City of Vernon Zoning Ordinance: Article V. Sec. 26.5.1. Off-Street Parking and Loading Facilities; City of Downey Municipal Code: Chapter 7 Section 9712. Nonresidential Parking Requirements; City of Bellflower Municipal Code: Chapter 17.88 Off-Street Parking Requirements.

Table 3.34. Off-Street Parking Effects

Location	Jurisdiction	Project Element	Alternative(s) Affected	Number of Lost Spaces	Approximate % of Total Parking	Remaining Spaces Within Code Requirements?
Parking lot on northeast corner of South Figueroa Street and West 8th Street	Los Angeles	Station Entrance – 7th St/Metro Center Station	2	22	10%	n/a
Bus parking lot on southeast corner of East 7th Street and South Alameda Street	Los Angeles	Station Entrance – Arts/Industrial District Station	2	7	5%	yes
Office building on southwest corner of East 7th Street and South Alameda Street	Los Angeles	Station Entrance – Arts/Industrial District Station	2	12	5%	no
US Post Office between Bauchet Street and North Vignes Street	Los Angeles	Ventilation Shaft	Design Option 1	20	10%	n/a governmental facility
USPS building on the northeast corner of North Alameda Street and East Cesar E Chavez Avenue	Los Angeles	Ventilation Shaft	1	5	10%	n/a governmental facility
Industrial building on the southeast corner of East 6th Street and South Alameda Street	Los Angeles	Station Entrance – Arts/Industrial District Station	1	5	5%	yes

Location	Jurisdiction	Project Element	Alternative(s) Affected	Number of Lost Spaces	Approximate % of Total Parking	Remaining Spaces Within Code Requirements?
Industrial building on the east side of South Alameda Street between East 6th Street and Industrial Street	Los Angeles	Station Entrance – Arts/Industrial District Station	1	2	<5%	yes
Strip mall north of the Randolph Street and Rita Avenue intersection	Huntington Park	TPSS Site 15	1, 2, 3	32	10%	yes
Strip mall at the southwest corner of State Street and Randolph Street	Huntington Park	Grade Crossing	1, 2, 3	4	15%	yes
San Antonio Elementary School and Magnet Center on the southeast corner of State Street and Randolph Street	Huntington Park	Grade Crossing	1, 2, 3	15	25%	n/a governmental facility
Industrial building at the northeast corner of State Street and Randolph Street	Vernon	Grade Crossing	1, 2, 3	18	5%	yes
Strip mall on the northeast corner of Walnut Street and California Avenue	Huntington Park	TPSS Site 13(E)	1, 2, 3	13	30%	yes

Location	Jurisdiction	Project Element	Alternative(s) Affected	Number of Lost Spaces	Approximate % of Total Parking	Remaining Spaces Within Code Requirements?
South Gate City Office south of Santa Ana Street and Salt Lake Avenue intersection	South Gate	Grade Crossing	1, 2, 3	4	5%	n/a governmental facility
Medical building on the northwest corner of South Atlantic Avenue and Wright Place	South Gate	Grade Crossing	1, 2, 3	1	<5%	yes
Los Angeles County Agriculture building at the southern end of Vulcan Street	Downey	Track	1, 2, 3	32	20%	n/a governmental facility
Paramount Bilingual SDA Church at the southeast corner of Pacific Avenue and Alondra Boulevard	Bellflower	Grade Crossing	1, 2, 3, 4	2	5%	yes

Source: Metro 2021s
Notes: n/a = not applicable; TPSS = traction power substation; USPS = United States Postal Service

Spillover Parking Impacts

Dedicated transit parking would be provided at the Firestone, I-105/C Line, Paramount/Rosecrans Bellflower, and Pioneer Stations. Project Measure TR PM-10 (Pioneer Station Parking Access) would be implemented at the Pioneer Station to limit vehicles accessing the parking structure through the adjacent residential streets. Table 3.35 summarizes the parking demand at each station where transit parking would be added under Alternative 1. A spillover parking analysis was deemed unnecessary for stations north of the Firestone Station and at the Gardendale Station because no transit parking would be added at these stations; therefore, it is unlikely passengers would attempt to access these stations via driving. As shown in Table 3.8, there is limited parking supply and/or availability around the LAUS, Arts/Industrial District, and Slauson/A Line Stations. Additionally, on- and off-street parking near the stations in downtown Los Angeles are regulated with metered and paid and/or private (reserved) lots. Consequently, if transit passengers attempt to drive and park at the stations, the parking demand would adjust based on the willingness of the drivers to pay the associated parking fees, with those drivers

utilizing existing parking lots. On-street parking around the Pacific/Randolph, Florence/Salt Lake, and Gardendale Stations is largely time unlimited and was 60 percent or less utilized at the time of surveys. While it is not anticipated that transit passengers would access these station via car because dedicated parking is not provided, on-street parking capacity is available to accommodate those who may try to do so without passengers displacing others using the spaces. Therefore, adverse effects from spillover parking would not occur.

Table 3.35. Station Parking Demand – Alternative 1

Station	Proposed Station Parking Spaces	Projected 2042 Parking Demand*	Excess Transit Parking Demand	Existing Unused On-Street Parking Capacity	Parking Supply Projected to be Exceeded?
Firestone	600	960	360	230	yes
I-105/C Line	326	380	56	490	no
Paramount/Rosecrans	490	450	-40	105	no
Bellflower	263	560	297	400	no
Pioneer	1,100	1,450	350	630	no

Source: Metro 2021s
Notes: * Projected parking demand rounded to nearest tenth

As shown in Table 3.35, dedicated transit parking provided under Alternative 1 would not accommodate projected demand at the I-105/C Line, Bellflower, and Pioneer Stations. However, unutilized on-street parking is available to meet the excess parking demand. At the Paramount/Rosecrans Station, the projected demand would be lower than the proposed transit parking. Based on the results of the analysis, spillover parking impacts would not occur at these four stations.

Alternative 1 would include 600 transit parking spaces at the Firestone Station. A daily parking demand for 960 spaces is projected at this station in the 2042 horizon year, which is greater than the number of dedicated transit parking spaces provided. Transit passengers may utilize adjacent on-street parking once the park-and-ride lot reaches capacity. As shown in Table 3.33, approximately 50 percent of the existing on-street parking is unutilized under existing conditions. As such, approximately 230 spaces could be available for transit passengers. However, even with the available on-street parking, the demand would still exceed the combined total of dedicated transit and available on-street parking spaces by approximately 130 spaces. If the parking demand reaches the full projection at peak hours, adverse effects could occur as a result of drivers circulating along roads adjacent to the station as they attempt to find available parking. This would cause an increase in localized traffic and delay on roadways and at intersections, including idling and increased vehicular emissions. Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]), described in Section 3.5.2.4, are proposed to reduce these impacts. Nevertheless, because parking demand, the subsequent strategies that may be utilized, and the community response are unknown, it is possible that adverse effects would remain after mitigation.

While adverse effects are unlikely at the stations north of the Firestone Station, as well as the I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations, Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would be implemented. Mitigation would be implemented to the system as a whole and would apply to all proposed stations.

3.4.4.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The following sections summarize the results of the parking analysis for Alternative 2 based on the evaluation of permanent physical loss of on- and off-street parking and spillover parking impacts associated with the demand for transit parking. As summarized in Table 3.33 and Table 3.34, Alternative 2 would result in the permanent loss of approximately 136 on-street and 162 off-street parking spaces. Alternative 2 would add 2,779 parking spaces at five of the proposed new transit stations.

On- and Off-Street Parking Impacts

Implementation of Alternative 2 would have the same effect on on-street parking as Alternative 1, as the number of on-street parking spaces affected are identical. The two station locations unique to Alternative 2, South Park/Fashion District and 7th Street/Metro Center Stations, would not remove any additional on-street parking. Similarly, Alternative 2 would require the removal of all on-street parking spaces at one location in the City of Los Angeles and one location in the City of South Gate. In the City of Los Angeles, the removal of the 20 on-street parking spaces along Long Beach Avenue would not affect the function of the adjacent land uses. However, changes in the location and availability of parking could result in local concern because the destination of those utilizing on-street parking is unknown. A potential consequence of this change in parking is increased traffic circulation on streets near the lost parking as existing drivers utilizing those spaces search for new places to park. This could cause an increase in localized traffic and delay along roadways and at intersections, including a corresponding increase in idling and vehicular emissions, and could result in an adverse effect. Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]), described in Section 3.5.2.4, are proposed to reduce these impacts. Nevertheless, because parking demand, the subsequent strategies that may be utilized, and the community response are unknown, it is possible that adverse effects would remain after mitigation.

In the City of South Gate, the removal all 12 on-street parking spaces at the Main Street grade crossing location would not affect the function of the property. On-street parking is available directly adjacent to this location, and drivers utilizing these spaces would be able to find alternate parking with minimal circulation. Alternative 2 would not result in an adverse effect at this location.

At the other two locations where the removal of on-street parking is required, the loss of parking space would not result in the supply decreasing below the observed utilization. Therefore, the effects and impact conclusions described for on-street parking under Alternative 1 would also apply to Alternative 2, and Alternative 2 would not result in an adverse effect. While adverse effects are unlikely at these locations, the physical loss of parking could contribute to local concern. Mitigation Measure TRA-22 (Parking Mitigation Program [Permanent]) would be implemented at all locations with a physical loss of on-street parking.

Under Alternative 2, there are 12 locations where off-street parking would be removed permanently with a total of 162 parking spaces affected, of which 2 locations and 19 parking spaces are governmental institutions. These properties are located in the Cities of Los Angeles, Huntington Park, Vernon, South Gate, Downey, and Bellflower. Table 3.34 summarizes the results of the impact analysis at each location. Metro would provide compensation as required under the Uniform Act at properties where off-street parking is removed.

Similar to Alternative 1, governmental institutions are not required to comply with parking codes. Metro would enter into an agreement with each of these properties for the use of the existing off-street parking. Additionally, the public parking lot at South Figueroa Street and West 8th Street is not subject to parking code requirements; however, removal of parking at this location would be subject to the Uniform Act. The removal of off-street parking spaces under Alternative 2 would not cause the off-street parking supply to decrease below the respective city parking code requirements and, therefore, would not result in an adverse effect.

Spillover Parking Impacts

Alternative 2 would provide dedicated transit parking at the same five stations as Alternative 1, shown in Table 3.36. Project Measure TR PM-10 (Pioneer Station Parking Access) would be provided at Pioneer Station to limit vehicles accessing the parking structure through the adjacent residential streets. Compared to Alternative 1, while the number of proposed station parking spaces would be the same, the parking demand for Alternative 2 was projected to be higher at all five stations. This is because the Alternative 2 northern terminus station is more centrally located to the downtown Los Angeles business district core, an important activity center and destination. As such, compared to Alternative 1, Alternative 2 would have a higher ridership projection, and the corresponding higher parking demand.

Table 3.36. Station Parking Facility Demand – Alternative 2

Station	Proposed Station Parking Spaces	Projected 2042 Parking Demand*	Excess Transit Parking Demand	Existing Unused On-Street Parking Capacity	Parking Supply Projected to be Exceeded?
Firestone	600	1,120	520	230	yes
I-105/C Line	326	450	124	490	no
Paramount/Rosecrans	490	530	40	105	no
Bellflower	263	640	377	400	no
Pioneer	1,100	1,650	550	630	no

Source: Metro 2021s
Notes: * Projected parking demand rounded to nearest tenth

Similar to Alternative 1, spillover parking is not anticipated at the stations north of the Firestone Station or at the Gardendale Station as dedicated parking would not be provided at these stations. Similar to Alternative 1, on-street parking near the 7th Street/Metro Center, Arts/Industrial District, and South Park/Fashion District Stations is limited in supply and/or availability (Table 3.8). Additionally, on- and off-street parking around these stations is regulated with metered and paid and/or private (reserved) lots. Consequently, if transit

passengers attempt to drive and park at these stations, the parking demand would adjust based on the willingness of the drivers to pay the associated parking fees, with those drivers utilizing existing parking lots. The analysis presented for the Pacific/Randolph, Florence/Salt Lake, and Gardendale Stations for Alternative 1 would also apply to these stations under Alternative 2. Therefore, adverse effects from spillover parking would not occur at these stations.

The transit parking provided for all five locations under Alternative 2 would not accommodate the projected demand at each station. However, unutilized on-street parking is available at the I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations to meet the excess parking demand. Therefore, spillover parking impacts would not occur at these four stations.

At the Firestone Station, daily parking demand is projected to be 1,120 in the 2042 horizon year, which is greater than the 600 dedicated transit parking spaces provided. As shown in Table 3.36, even with the available on-street parking, the demand would still exceed the combined total of dedicated transit and available on-street parking spaces. If the parking demand reaches the full projection at peak hours, adverse effects could occur as a result of drivers circulating along roads adjacent to the station as they attempt to find available parking. This would cause an increase in localized traffic and delay on roadways and at intersections, including idling and increased vehicular emissions. Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]), described in Section 3.5.2.4, are proposed to reduce these impacts. Nevertheless, because parking demand, the subsequent strategies that may be utilized, and the community response are unknown, it is possible that adverse effects would remain after mitigation.

While adverse effects are unlikely at the stations where no additional parking is provided (stations north of the Firestone Station and Gardendale Station), as well as the I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations, Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would be implemented. Mitigation would be implemented to the system as a whole and would apply to all proposed stations.

3.4.4.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The following sections summarize the results of the parking analysis for Alternative 3 based on the evaluation of permanent physical loss of on- and off-street parking and spillover parking impacts associated with the demand for transit parking. As summarized in Table 3.33 and Table 3.34, Alternative 3 would result in the permanent loss of approximately 91 on-street and 89 off-street parking spaces. Alternative 3 would add 2,779 parking spaces at five of the proposed new transit stations.

On- and Off-Street Parking Impacts

Alternative 3 would have a shorter alignment than Alternatives 1 and 2 and would require the removal of fewer on- and off-street parking spaces. Similar to Alternatives 1 and 2, Alternative 3 would require the removal of all 12 on-street parking spaces at the Main Street grade crossing location in the City of South Gate, as summarized in Table 3.33. However, the removal of the 12 on-street parking spaces would not affect the function of the property. On street parking is available directly adjacent to this location, and drivers utilizing these

spaces would be able to find parking with minimal circulation. Alternative 3 would not result in an adverse effect at this location.

At the other locations where the removal of on-street parking is required, the loss of parking space would not result in the supply decreasing below the observed utilization. Therefore, the effects and impact conclusions described for on-street parking under Alternative 1 would also apply to Alternative 3, and Alternative 3 would not result in an adverse effect. While adverse effects are unlikely at these locations, the physical loss of parking could contribute to local concern. Mitigation Measure TRA-22 (Parking Mitigation Program [Permanent]) would be implemented at all locations with a physical loss of on-street parking.

Under Alternative 3, there are nine locations where off-street parking would be removed permanently with a total of 121 parking spaces affected, of which 2 locations and 19 parking spaces are governmental institutions. These properties are located in the Cities of Huntington Park, Vernon, South Gate, Downey, and Bellflower. Table 3.34 summarizes the impacts at each location. Metro would provide compensation as required under the Uniform Act at properties where off-street parking is removed. Similar to Alternatives 1 and 2, the removal of off-street parking spaces at these locations would not cause the off-street parking supply to decrease below the respective city parking code requirements and, therefore, would not result in an adverse impact.

Spillover Parking Impacts

Alternative 3 would provide dedicated transit parking at the same five stations as Alternatives 1 and 2. Project Measure TR PM-10 (Pioneer Station Parking Access) would be provided at Pioneer Station to limit vehicles accessing the parking structure through the adjacent residential streets. Table 3.37 summarizes the parking demand at each station with dedicated transit parking. Alternative 3 would have a shorter alignment than Alternatives 1 and 2, and a reduction in the projected ridership and corresponding parking demand is expected. The transit parking provided under Alternative 3 would accommodate projected demand at the I-105/C Line, Paramount/Rosecrans, and Pioneer Stations. Similar to the analysis presented for Alternatives 1 and 2, it is not anticipated that transit passengers would access stations without dedicated transit parking. Parking supply and availability is limited around the Slauson/A Line Station (Table 3.8). On-street parking supply is more available around the Pacific/Randolph, Florence/Salt Lake, and Gardendale Stations; therefore, if transit passengers access these stations via car, on-street parking capacity would likely be available to accommodate drivers without displacing others using the spaces. Therefore, spillover parking impacts would not occur at these stations.

The transit parking provided under Alternative 3 would not accommodate projected demand at the Firestone and Bellflower Stations. However, as shown in Table 3.37, unutilized on-street parking is available at both stations to meet the excess parking demand. Therefore, spillover parking impacts would not occur at these stations and Alternative 3 would not result in adverse effects related to spillover parking. While adverse effects are unlikely at all proposed stations, Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would be implemented.

Table 3.37. Station Parking Facility Demand – Alternative 3

Station	Proposed Station Parking Spaces	Projected 2042 Parking Demand*	Excess Transit Parking Demand	Existing Unused On-Street Parking Capacity	Parking Supply Projected to be Exceeded?
Firestone	600	670	70	230	no
I-105/C Line	326	240	-86	490	no
Paramount/Rosecrans	490	300	-190	105	no
Bellflower	263	420	157	400	no
Pioneer	1,100	1,090	-10	630	no

Source: Metro 2021s
Notes: * Projected parking demand rounded to nearest tenth

3.4.4.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The following sections summarize the results of the parking analysis for Alternative 4 based on the evaluation of permanent physical loss of on- and off-street parking and spillover parking impacts associated with the demand for transit parking. As summarized in Table 3.33 and Table 3.34, Alternative 4 would result in the permanent loss of approximately two off-street parking spaces and would not result in the permanent loss of on-street parking spaces. Alternative 4 would add 2,179 parking spaces at four of the proposed new transit stations.

On- and Off-Street Parking Impacts

Implementation of Alternative 4 would not require the removal of on-street parking and, therefore, would not result in an adverse effect related to on-street parking.

Alternative 4 would remove two off-street parking spaces at the Paramount Bilingual SDA Church in the City of Bellflower. Table 3.34 summarizes the results of the impact analysis at this location. Metro would provide compensation as required under the Uniform Act. The loss of parking at this location would not cause the off-street parking supply to decrease below the City of Bellflower parking code requirements and, therefore, Alternative 4 would not result in adverse effect related to off-street parking.

Spillover Parking Impacts

Dedicated transit parking would be provided at the I-105/C Line, Paramount/Rosecrans, Bellflower, and Pioneer Stations. All stations along the alignment would have dedicated transit parking. Project Measure TR PM-10 (Pioneer Station Parking Access) would be provided at Pioneer Station to limit vehicles accessing the parking structure through the adjacent residential streets Table 3.38 summarizes the parking demand at each station. Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3, and a reduction in the projected parking demand is expected. The transit parking provided under Alternative 4 would accommodate projected demand at the I-105/C Line, Paramount/Rosecrans, and Pioneer Stations. Therefore, spillover parking impacts would not occur at these stations.

Table 3.38. Station Parking Facility Demand – Alternative 4

Station	Proposed Station Parking Spaces	Projected 2042 Parking Demand*	Excess Transit Parking Demand	Existing Unused On-Street Parking Capacity	Parking Supply Projected to be Exceeded?
I-105/C Line	326	95	-231	490	no
Paramount/Rosecrans	490	210	-280	105	no
Bellflower	263	300	37	400	no
Pioneer	1,100	790	-310	630	no

Source: Metro 2021s
Notes: * Projected parking demand rounded to nearest tenth

The transit parking provided under Alternative 4 would not accommodate projected demand at the Bellflower Station. However, as shown in Table 3.38, unutilized on-street parking is available at the station to meet the excess parking demand. Therefore, spillover parking impacts would not occur at the Bellflower Station, and Alternative 4 would not result in adverse effects related to spillover parking. While adverse effects are unlikely at all proposed stations, Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would be implemented.

3.4.4.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

Design Option 1 would not require the removal of on-street parking and, therefore, would not result in an adverse effect. Implementation of Design Option 1 would result in the loss of 20 off-street parking spaces at the U.S. Post Office between Bauchet Street and North Vignes Street in the City of Los Angeles. As governmental institutions are not required to comply with parking codes, this property is included in Table 3.34 for completeness but was not assessed further. Design Option 1 would not result in adverse effects related to on- or off-street parking.

Design Option 2 would not result in the loss of on- or off-street parking. Therefore, Design Option 2 would not result in adverse effects related to on- or off-street parking.

Under Design Options 1 or 2, because no dedicated transit parking would be provided, it is unlikely passengers would attempt to access these stations via driving. Therefore, a spillover parking analysis was deemed unnecessary.

3.4.4.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The Paramount and Bellflower MSF site options would not require the removal of on-street parking. Off-street parking would be removed along with the business(es) utilizing that parking. Therefore, there would not be adverse effects.

A spillover parking analysis was unnecessary for the Paramount MSF or the Bellflower MSF site options as these are not ridership-generating facilities, and spillover parking from transit users is not expected.

3.5 Project Measures and Mitigation Measures

This section addresses the project and mitigation measures identified for the transportation elements. Project measures are included as part of the design of the Project and would minimize or avoid impacts. Mitigation measures would minimize or eliminate the adverse impacts from the Build Alternatives identified in Section 3.4. The evaluation methodology described in Section 3.2 is applied to determine the effectiveness of the mitigation measures.

3.5.1 Project Measures

TR PM-1: Pre-signals and Queue-cutter Signals. Installation of pre-signals or queue-cutter signals to prevent vehicles from stopping on tracks. Pre-signals are traffic-control devices that control traffic approaching a grade crossing in conjunction with the traffic control for the intersection(s) beyond the tracks. Pre-signals can be used to stop vehicular traffic before the railroad crossing. Queue-cutter signals only control traffic approaching a crossing and are operated independently of other traffic signals in the vicinity. The concept of operation of a queue-cutter is to hold traffic upstream from a crossing before a queue caused by a downstream traffic control signal or other roadway congestion can grow long enough to back up into the crossing.

TR PM-2: Lane Configurations. Existing lane configurations near the at-grade crossings would be modified at the respective crossings to operate the pre-signals or queue-cutter signals as required by regulations.

TR PM-3: Long Beach Avenue Closure. Closing Long Beach Avenue north of the 14th Street and closing 14th Street west of Long Beach Avenue to accommodate the WSAB light rail portal tunnel (transition area between underground and aerial alignment).

TR PM-4: Randolph Avenue Intersection Modifications. Intersection modifications along Randolph Avenue, closing access for vehicles to cross the existing train tracks, resulting in the removal of the existing at-grade train crossing at the following intersections:

- Wilmington Avenue
- Regent Street
- Albany Street
- Rugby Avenue
- Rita Avenue

TR PM-5: Randolph Avenue Lane Reduction. Randolph Avenue reduction to one lane in each direction from two lanes in each direction between Alameda Street (West) and State Street and providing left-turn lanes along Randolph Avenue at each middle-of-intersection at-grade crossing to accommodate existing on-street parking.

TR PM-6: Dakota Avenue Street Conversion. One-way street conversion to Dakota Avenue between Gardendale Street and Main Street to accommodate the LRT tracks.

TR PM-7: Alondra Boulevard Intersection Modifications. Intersection modifications on the adjacent intersections to the Alondra at-grade train crossing. The intersections are Alondra Boulevard at Flora Vista Street and Alondra Boulevard at Pacific Avenue. Right-turn access only entering and leaving Flora Vista Street and Pacific Avenue to accommodate crossing features required by regulations.

TR PM-8: 187th Street Closure. Closing 187th Street between Corby Avenue (West) and Corby Avenue (East) to accommodate nearby station features required by regulations.

TR PM-9: 188th Street Closure. Closing 188th Street between Corby Avenue (West) and Pioneer Boulevard to accommodate the station parking structure.

TR PM-10: Pioneer Station Parking Access. Vehicle access to Pioneer Station parking structure to be primarily directed through signage to enter/exit from Pioneer Boulevard. Corby Avenue to serve as a secondary entrance/exit point as required, limiting vehicle access to/from adjacent residential streets.

3.5.2 Mitigation Measures

3.5.2.1 Traffic Operations

This section addresses mitigation measures for the intersections with adverse impacts from the Build Alternatives, as identified in Section 3.4.1. The evaluation assumes the roadway project measures identified in Section 3.5.1 are part of the Build Alternatives. These measures include existing at-grade crossing improvements, traffic signal installations, lane modifications, and street closures to enhance the safety and operations of traffic operations with the Build Alternatives in place. The intersections are evaluated with a structured assessment approach, and the evaluations are delineated by section because the impacts are specific to localized areas.

As described in Section 3.4.1, Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 would result in adverse impacts at 20 intersections (related to LOS and delays). Alternative 4 would result in adverse impacts at 5 intersections. With the mitigation measures described, 8 of the 20 intersections would be fully mitigated (i.e., no adverse effects would remain after mitigation) under Alternatives 1 (with and without Design Options 1 and 2), 2, and 3. Mitigation would be effective for all 5 intersections that would have adverse impacts under Alternative 4, while adverse impacts would remain at 12 intersections for Alternatives 1 (with and without Design Options 1 and 2), 2, and 3.

Overview and Approach for Assessing Mitigation

For each intersection, potential mitigation measures, including strategies and improvement options, were identified and evaluated. The mitigation measures generally included three types of modifications:

- Signalizing intersections that are currently stop-controlled
- Adding lanes (right, through, and/or left)
- Extending turn bays (right or left)

In developing the mitigation options, consideration was given to the benefit of the mitigation (reducing delays); however, the potential for secondary impacts associated with mitigation measure implementation (typically right-of-way impacts to access, parking, or

adjacent properties) was considered. These mitigation strategies were then eliminated from further consideration.

In numerous scenarios, the mitigation options evaluated at one intersection could result in an effective mitigation or an additional impact at nearby intersections. For example, adding a turn lane to an intersection where the queues extend back to the upstream intersection would generally have a positive effect on both intersections. However, adding a through lane to one intersection may allow more traffic to pass through to a downstream intersection, thereby increasing delay and resulting in a potential impact.

Focused Assessment of Potential Mitigation Measures

Appendix A – Attachment 7 of the Transportation Impact Analysis Report (Appendix D) provides a detailed description of the evaluation of potential mitigation options to address traffic operations impacts. The discussion is organized by geographic section using groups of intersections with cross-effects between intersections (upstream or downstream). Six groups of intersections and two individual intersections were assessed. These are described in the following subsections.

Intersections Nos. 31, 35, 36, 39, 40, 42, 43, and 45: This intersection group is located on Randolph Street near the Pacific/Randolph Station and includes eight intersections:

- No. 31 – Randolph Street and Alameda Street (West)
- No. 35 – Randolph Street and Santa Fe Avenue
- No. 36 – Randolph Street and Malabar Street
- No. 39 – Pacific Boulevard and Clarendon Avenue
- No. 40 – Randolph Street and Pacific Boulevard
- No. 42 – Randolph Street and Seville Avenue
- No. 43 – Randolph Street and Miles Avenue
- No. 45 – Randolph Street and State Street

Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 are projected to result in adverse effects to these intersections during one or both peak periods. With the proposed Build Alternatives, LRT would travel in the median of Randolph Street, passing through the listed intersections at-grade.

Multiple mitigation measures were considered, but many measures would require right-of-way acquisition and would have secondary impacts. A list of feasible mitigation measures was developed, as summarized in Table 3.39.

While delays related to the Build Alternatives would be reduced, impacts would remain after implementation of mitigation measures. Adding additional lanes or lane extensions without acquiring right-of-way would not provide substantial reduction in vehicle delay. Therefore, impacts would remain adverse after mitigation. Figure 3-10 illustrates the intersection lane configurations with the mitigation measures.

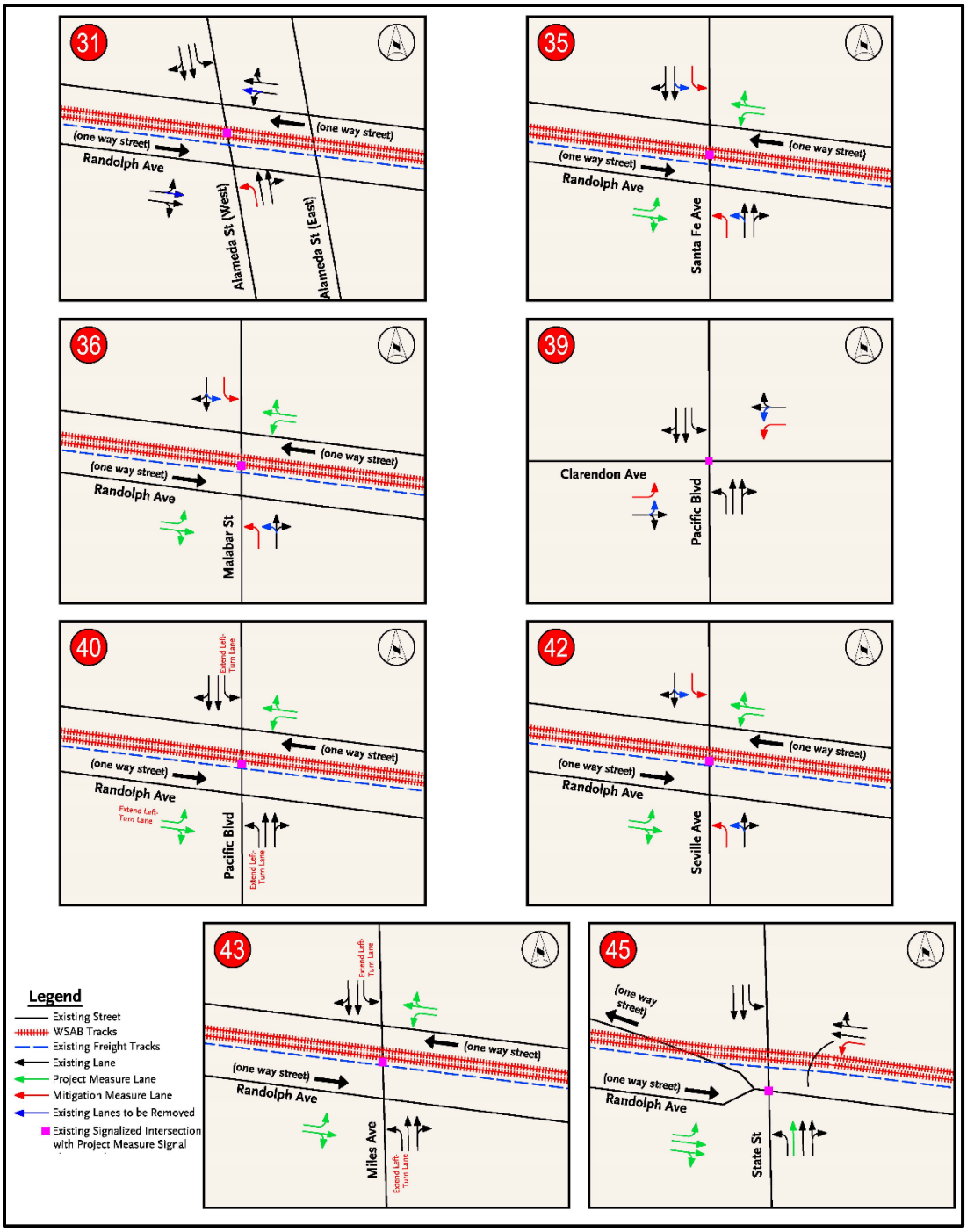
Table 3.39. Mitigation Measures for Intersections Nos. 31, 35, 36, 39, 40, 42, 43, and 45

No	Intersection	Mitigation Description	Peak	No Build Delay/ LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
31	Randolph Street/ Alameda Street (West)	TRA-12: Add northbound left-turn lane with 150-foot turn bay. Convert eastbound and westbound left-through lane to left-turn lanes. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	49.9/D	1, 2, 3, Design Options 1 and 2	142.7/F	71.9/E	**Yes**
			PM	60.8/E	1, 2, 3, Design Options 1 and 2	140.4/F	46.3/D	No
35	Randolph Street/Santa Fe Avenue	TRA-11: Add northbound and southbound left-turn lane with 150-foot turn bays. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	30.3/C	1, 2, 3, Design Options 1 and 2	114.8/F	95.1/F	**Yes**
			PM	30.1/C	1, 2, 3, Design Options 1 and 2	141.2/F	92.3/F	**Yes**
36	Randolph Street/ Malabar Street	TRA-10: Add northbound and southbound left-turn-only lanes with 100-foot turn bays. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	22.5/C	1, 2, 3, Design Options 1 and 2	81.9/F	58.6/E	**Yes**
			PM	22.1/C	1, 2, 3, Design Options 1 and 2	52.3/D	55.5/E	**Yes**
39	Pacific Boulevard/ Clarendon Avenue	TRA-9: Add eastbound and westbound left-turn lanes with 50-foot turn bays. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	10.8/B	1, 2, 3, Design Options 1 and 2	51.1/D	21.7/C	**Yes**
			PM	9.1/A	1, 2, 3, Design Options 1 and 2	14.2/B	8.9/A	No

No	Intersection	Mitigation Description	Peak	No Build Delay/ LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
40	Randolph Street/ Pacific Boulevard	TRA-8: Extend northbound, southbound, and eastbound left-turn lanes to 150-foot turn bays. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	26.0/C	1, 2, 3, Design Options 1 and 2	90.1/F	60.3/E	**Yes**
			PM	32.5/C	1, 2, 3, Design Options 1 and 2	73.2/E	53.9/D	**Yes**
42	Randolph Street/ Seville Avenue	TRA-7: Add northbound and southbound through lanes with 150-foot left-turn bays in each direction. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	37.5/D	1, 2, 3, Design Options 1 and 2	111.3/F	113.6/F	**Yes**
			PM	34.9/C	1, 2, 3, Design Options 1 and 2	129.4/F	102.8/F	**Yes**
43	Randolph Street/Miles Avenue	TRA-6: Extend northbound and southbound left-turn lanes to 150-foot turn bays. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	36.7/D	1, 2, 3, Design Options 1 and 2	91.5/F	120.0/F	**Yes**
			PM	36.2/D	1, 2, 3, Design Options 1 and 2	121.6/F	120.3/F	**Yes**
45	Randolph Street/State Street	TRA-5: Add a westbound left-turn lane with a 150-foot turn bay. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	43.6/D	1, 2, 3, Design Options 1 and 2	144.1/F	117.7/F	**Yes**
			PM	19.4/B	1, 2, 3, Design Options 1 and 2	76.1/E	73.4/E	**Yes**

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells highlighted in yellow with bold "Yes" text indicate that adverse effects still occur at the intersection after implementation of mitigation. The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-10. Nos. 31, 35, 36, 39, 40, 42, 43, and 45 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Intersections Nos. 48 and 49: This intersection group is located adjacent to the Gage Avenue crossing and includes intersections No. 48 – Gage Avenue and California Avenue and No. 49 – Gage Avenue and Salt Lake Avenue (West). Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 are projected to result in adverse effects to these intersections during both peak periods. With the proposed Build Alternatives, LRT would travel through the at-grade crossing between the two intersections.

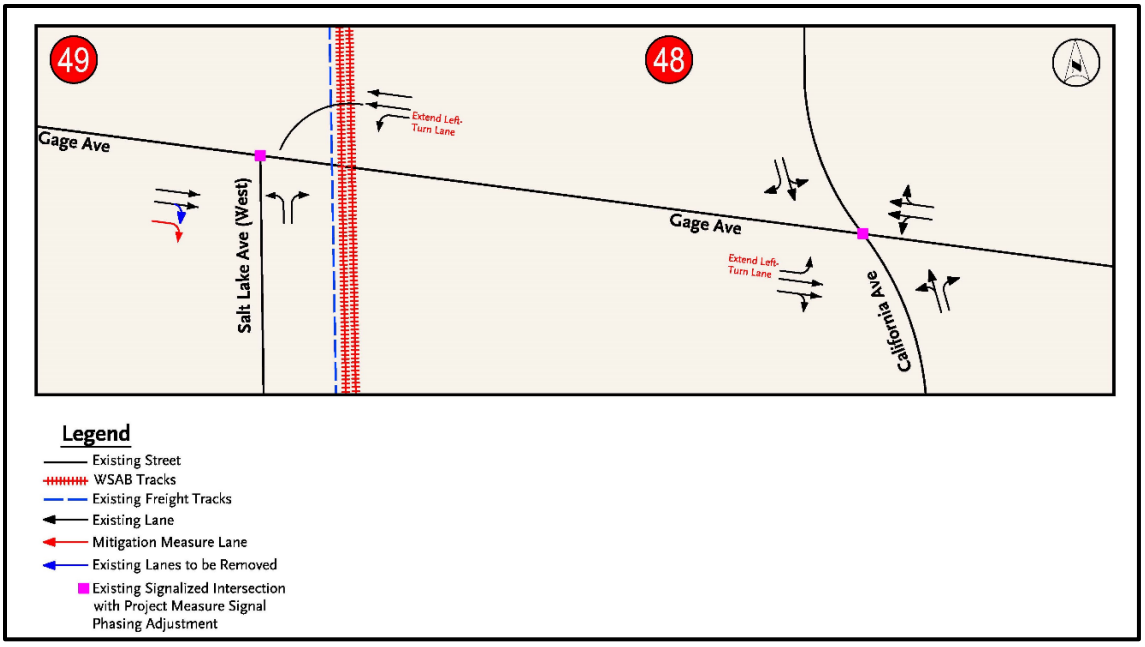
Multiple mitigation measures were considered, but many mitigation measures would require right-of-way acquisition and would have secondary impacts. A list of feasible mitigation measures was developed as summarized in Table 3.40. As shown, with implementation of mitigation, adverse effects would remain for both intersections during the AM and PM peak periods under the Build Alternatives. Figure 3-11 illustrates the intersection lane configurations with the mitigation measures.

Table 3.40. Mitigation Measures for Intersections Nos. 48 and 49

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS with Mitigation[a]	Adverse Effect With Mitigation?[b]
48	Gage Avenue/ California Avenue	TRA-4: Extend eastbound left-turn lane with a 150-foot turn bay. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bell).	AM	19.6/B	1, 2, 3, Design Options 1 and 2	69.4/E	63.1/E	**Yes**
			PM	97.5/F	1, 2, 3, Design Options 1 and 2	120.3/F	123.2/F	**Yes**
49	Gage Avenue/ Salt Lake Avenue (West)	TRA-3: Add eastbound right-turn lane with a 250-foot turn bay. Extend westbound left-turn lane with a 225-foot turn bay. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bell).	AM	16.3/B	1, 2, 3, Design Options 1 and 2	64.9/E	33.8/C	**Yes**
			PM	34.2/C	1, 2, 3, Design Options 1 and 2	114.4/F	100.9/F	**Yes**

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells highlighted in yellow with bold "Yes" text indicate that adverse effects still occur at the intersection after implementation of mitigation.
LOS = level-of-service

Figure 3-11. Intersections Nos. 48 and 49 Lane Configuration with Mitigation Measures



Source: Metro 2021s

While the projected delays are reduced, adverse effects would remain after implementation of the mitigation measures. Adding additional lanes or lane extensions would not provide substantial reduction in vehicle delay without acquiring right-of-way. Therefore, adverse effects would remain after mitigation.

Intersections No. 51: This intersection is located west of the Bell crossing. Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 are projected to result in adverse effects at this intersection during both peak periods. Under these alternatives, LRT would travel through the at-grade crossing to the east of the intersection, and there would be additional traffic volumes associated with the projected kiss-and-ride peak-hour trips from the Florence/Salt Lake Station traveling through the intersection.

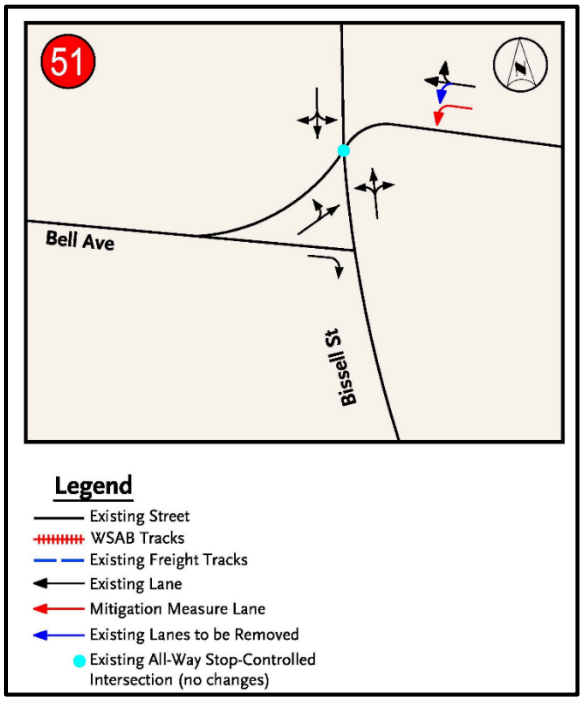
A set of mitigation measures, which eliminate the adverse impacts, is summarized in Table 3.41. Additionally, no right-of-way acquisitions associated with these mitigation measures are anticipated because they can be accommodated within the existing right-of-way. Figure 3-12 illustrates the intersection lane configurations with the mitigation measures.

Table 3.41. Mitigation Measures for Intersection No. 51

No	Intersection	Mitigation Description	Peak	No Build Delay/ LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
51	Bell Avenue/ Bissell Street	TRA-2: Add a westbound through-right lane. Convert westbound left-through-right lane into a left-turn lane. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bell).	AM	5.3/A	1, 2, 3, Design Options 1 and 2	13.9/B	6.8/A	No
			PM	5.7/A	1, 2, 3, Design Options 1 and 2	22.5/C	9.6/A	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-12. Intersection No. 51 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Intersections Nos. 53 and 54: This group of intersections is located north of the Florence/Salt Lake Station and includes intersections No. 53 – Florence Avenue and California Avenue (West) and No. 54 – Florence Avenue and California Avenue (East). Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 are projected to result in adverse effects to these intersections during one or both peak periods. With the proposed Build Alternatives, LRT would travel through the at-grade crossing between the two intersections, and there would be additional traffic volumes associated with the projected 40 kiss-and-ride peak hour trips at the Florence/Salt Lake Station.

After detailed evaluation, one feasible mitigation option was developed for No. 53 – Florence Avenue and California Avenue (West), and no feasible mitigation options were identified for No. 54 – Florence Avenue and California Avenue (East), as summarized in Table 3.42. The cells highlighted in yellow with bold "Yes" text indicate that adverse effects still occur at these intersections after implementation of mitigation. The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation. Figure 3-13 illustrates the intersection lane configurations with the mitigation measures.

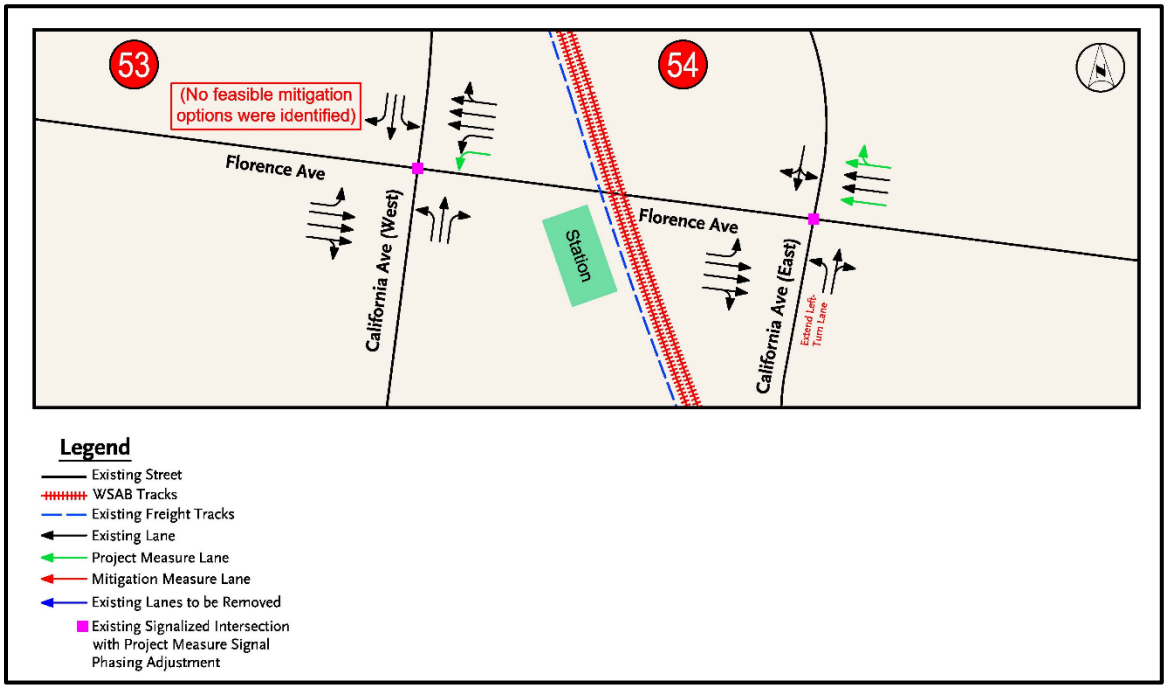
Table 3.42. Mitigation Measures for Intersections Nos. 53 and 54

No	Intersection	Mitigation Description	Peak	No Build Delay/ LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
53	Florence Avenue/ California Avenue (West)	No feasible mitigation options were identified.	AM	37.1/D	1, 2, 3, Design Options 1 and 2	103.2/F	101.7/F	**Yes**
			PM	42.3/D	1, 2, 3, Design Options 1 and 2	80.8/F	50.3/D	**Yes**

No	Intersection	Mitigation Description	Peak	No Build Delay/ LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
54	Florence Avenue/ California Avenue (East)	TRA-1: Extend the northbound left-turn lane to 300 feet. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Huntington Park).	AM	65.2/E	1, 2, 3, Design Options 1 and 2	143.2/F	142.3/F	**Yes**
			PM	44.3/D	1, 2, 3, Design Options 1 and 2	31.4/C	31.8/C	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells highlighted in yellow with bold "Yes" text indicate that adverse effects still occur at the intersection after implementation of mitigation. The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-13. Intersections Nos. 53 and 54 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Based on the preliminary evaluation, adverse effects would remain at both intersections after implementation of mitigation measures. Adding additional lanes or lane extensions would not provide substantial reduction in vehicle delay without acquiring right-of-way. Therefore, these impacts would be unmitigable and an adverse effect would remain.

Intersections Nos. 68 and 70: This intersection group is located adjacent to the Gardendale Station crossing and includes intersections No. 68 – Gardendale Street and Center Street and No. 70 – Gardendale Street and Industrial Avenue intersections. Alternatives 1 (with and without Design Options 1 and 2), 2, and 3 are projected to result in adverse effects to these intersections during both peak periods. With the Build Alternatives, LRT would travel through the at-grade crossing between the two intersections, and there would be additional traffic volumes associated with the projected 53 park-and-ride and 56 kiss-and-ride peak hour trips traveling through the intersection.

A set of mitigation measures, which would eliminate the anticipated adverse impacts, are summarized in Table 3.43. As shown, adverse effects would be fully mitigated, as indicated by cells with "No" text. No substantial right-of-way impacts are anticipated; however, there would be minor impacts to landscaping on the north side of both intersections. Otherwise, all mitigation measures would be accommodated within the existing right-of-way. Figure 3-14 illustrates the intersection lane configurations with the mitigation measures.

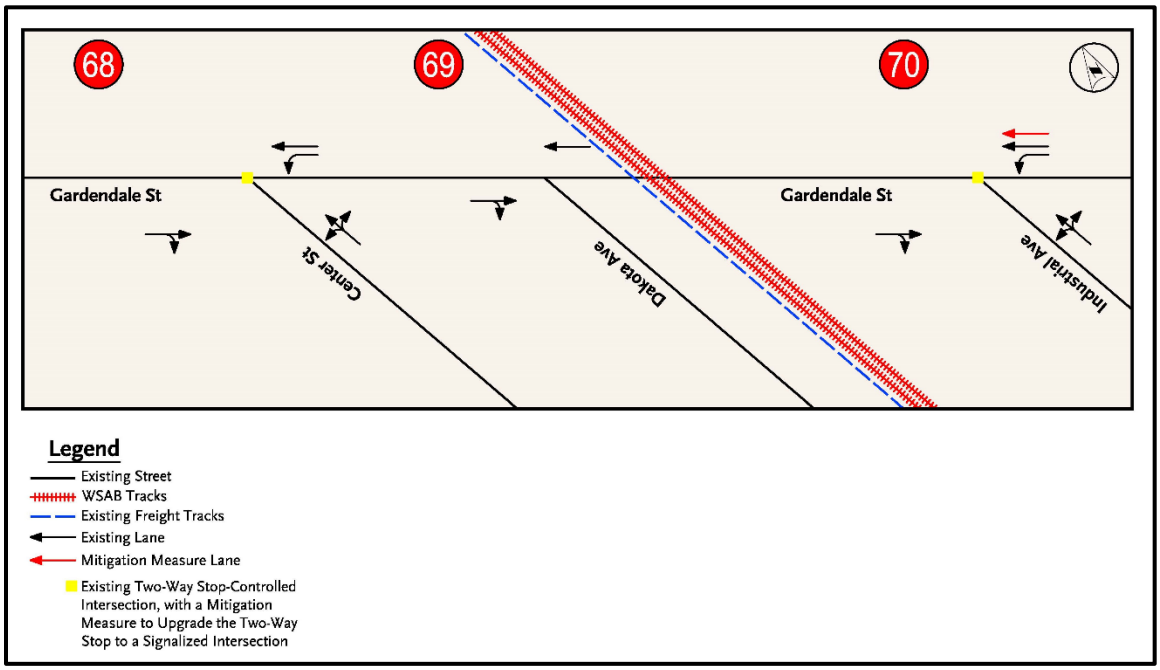
Table 3.43. Mitigation Measures for Intersections Nos. 68 and 70

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
68	Gardendale Street/ Center Street	TRA-13: Convert the two-way stop-controlled intersection to a signalized intersection. Metro would implement this measure subject to approval of the applicable jurisdiction (City of South Gate).	AM	23.5/C	1, 2, 3, Design Options 1 and 2	48.8/E	7.8/A	No
			PM	17.2/C	1, 2, 3, Design Options 1 and 2	41.0/E	15.6/B	No

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
70	Gardendale Street/ Industrial Avenue	TRA-14: Convert the two-way stop-controlled intersection to a signalized intersection. Add a westbound through lane, the length of which would continue through the grade crossing. Metro would implement this measure subject to approval of the applicable jurisdiction (City of South Gate).	AM	75.5/F	1, 2, 3, Design Options 1 and 2	594.2/F	4.0/A	No
			PM	28.9/C	1, 2, 3, Design Options 1 and 2	50.9/F	5.9/A	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-14. Intersections Nos. 68 and 70 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Intersections Nos. 81, 82, and 84: This intersection group is located adjacent to the Alondra and Clark crossings and includes intersections No. 81 – Flora Vista Street and Clark Avenue, No. 82 – Alondra Boulevard and Clark Avenue, and No. 84 – Alondra Boulevard and Flora Vista Street intersections. All Build Alternatives (with or without Design Options 1 and 2) are projected to result in adverse effects to these intersections during at least one peak period. With the Build Alternatives, LRT would travel through the at-grade crossing between the intersections, and there would be additional traffic volumes associated with the projected 20 park-and-ride and 7 kiss-and-ride peak hour trips traveling through the area.

A set of mitigation measures, which would address impacts, is summarized in Table 3.44. As shown, adverse effects would be fully mitigated such that no adverse effect would remain after mitigation. No right-of-way impacts are anticipated because all mitigation options can be accommodated within the existing right-of-way. Figure 3-15 illustrates the intersection lane configurations with the mitigation measures.

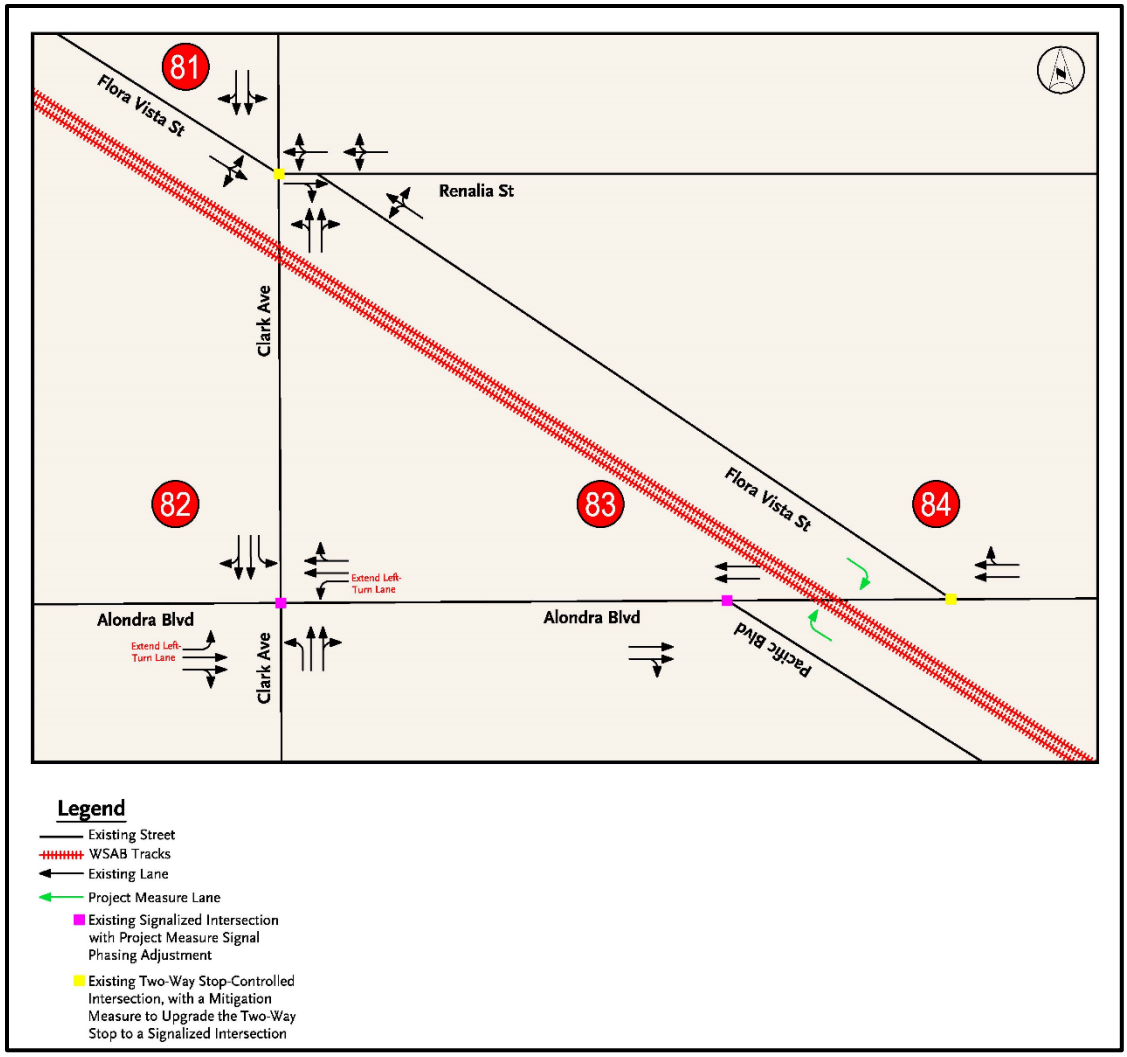
Table 3.44. Mitigation Measures for Intersections Nos. 81, 82, and 84

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
81	Flora Vista Street/ Clark Avenue	TRA-15: Convert the two-way stop-controlled intersection to a signalized intersection. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bellflower).	AM	7.6/A	1, 2, 3, 4, Design Options 1 and 2	172.1/F	10.1/B	No
			PM	22.4/D	1, 2, 3, 4, Design Options 1 and 2	389.0/F	12.3/B	No
82	Alondra Boulevard/ Clark Avenue	TRA-16: Extend eastbound left-turn lane to 150 feet. Extend westbound	AM	46.2/D	1, 2, 3, 4, Design Options 1 and 2	61.1/E	46.1/D	No

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS With Mitigation[a]	Adverse Effect With Mitigation?[b]
		left-turn lane to 200 feet. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bellflower).	PM	69.3/E	1, 2, 3, 4, Design Options 1 and 2	83.3/F	49.7/D	No
84	Alondra Boulevard/ Flora Vista Street	TRA-17: Convert the two-way stop-controlled intersection to a signalized intersection. Metro would implement this measure subject to approval of the applicable jurisdiction (City of Bellflower).	AM	52.6/F	1, 2, 3, 4, Design Options 1 and 2	420.6/F	30.8/C	No
			PM	41.4/E	1, 2, 3, 4, Design Options 1 and 2	37.6/E	4.0/A	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-15. Intersections Nos. 81, 82, and 84 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Intersection No. 89: Intersection No. 89 – Artesia Boulevard and Dumont Avenue is located adjacent to the Artesia crossing and was analyzed independently because there are no other existing intersections nearby. All Build Alternatives (with and without Design Options 1 and 2) are projected to result in adverse effects to these intersections during both peak periods. With the Build Alternatives, LRT would travel through the at-grade crossing east of the intersection.

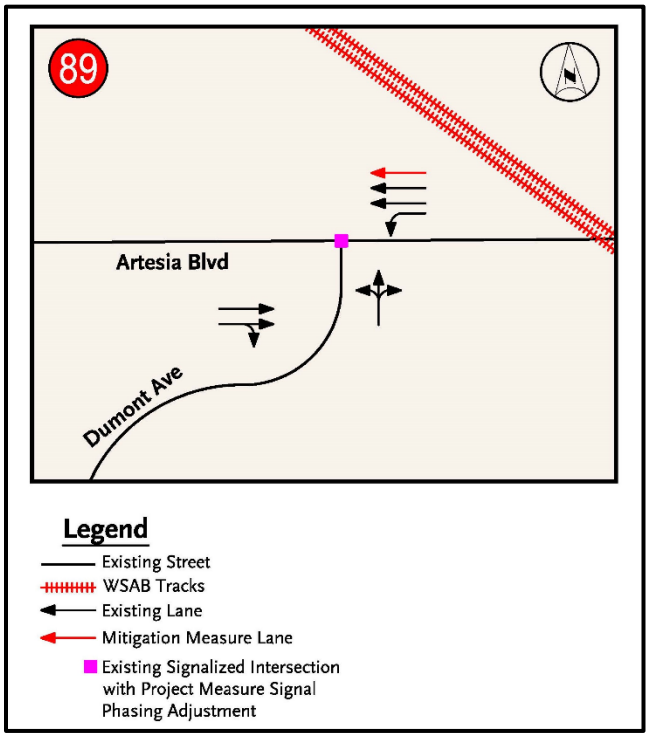
A mitigation measure, which would address the projected adverse impacts, is summarized in Table 3.45. As shown, adverse effects would be fully mitigated such that no adverse effect would remain after mitigation. Minimal right-of-way impacts are anticipated. The necessary right-of-way acquisition would include property on Artesia Boulevard west of Dumont Avenue, but these acquisitions would be limited to the existing landscaping areas along this street. Figure 3-16 illustrates the intersection lane configurations with the mitigation measures.

Table 3.45. Mitigation Measures for Intersection No. 89

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS with Mitigation[a,]	Adverse Effect With Mitigation?[b]
89	Artesia Boulevard/ Dumont Avenue	TRA-18: Add westbound through lane. Metro would implement this measure is subject to approval of the applicable jurisdiction (City of Cerritos).	AM	14.7/B	1, 2, 3, 4, Design Options 1 and 2	24.2/C	15.9/B	No
			PM	21.6/C	1, 2, 3, 4, Design Options 1 and 2	58.2/E	26.4/C	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

Figure 3-16. Intersection No. 89 Lane Configuration with Mitigation Measures



Source: Metro 2021s

Intersection No. 91: Intersection No. 91 – Business Circle and Studebaker Road is located adjacent to the Studebaker crossing and was analyzed independently because there are no other existing intersections nearby. All Build Alternatives (with and without Design Options 1 and 2) are projected to result in adverse effects to these intersections during the PM peak period. With the Build Alternatives, LRT would travel through the at-grade crossing south of the intersection.

A mitigation measure, which would address the projected adverse impacts, is summarized in Table 3.46. As shown, adverse effects would be fully mitigated such that no adverse effect would remain after mitigation. No right-of-way impacts are anticipated because the mitigation measure can be accommodated within the existing right-of-way. Figure 3-17 illustrates the intersection lane configurations with the mitigation measures.

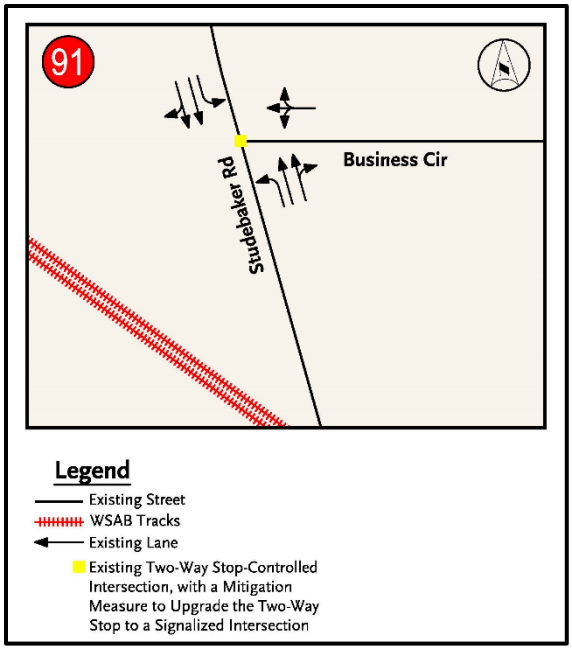
Table 3.46. Mitigation Measure for Intersection No. 91

No	Intersection	Mitigation Description	Peak	No Build Delay/LOS[a]	Build Alternatives	Build Alternatives Delay/LOS Without Mitigation[a]	Build Alternatives Delay/LOS with Mitigation[a,]	Adverse Effect With Mitigation?[b]
91	Business Circle/ Studebaker Road	TRA 19: Convert the two-way stop-controlled intersection to a signalized intersection. This measure is subject to approval of the applicable jurisdiction.	AM	8.4/A	1, 2, 3, 4, Design Options 1 and 2	3.3/A	6.3/A	No
			PM	8.0/A	1, 2, 3, 4, Design Options 1 and 2	15.3/C	8.9/A	No

Source: Metro 2021s
Notes: [a] This column shows the peak hour delay in seconds per vehicle, followed by the LOS.
[b] The cells with "No" text indicate adverse effects from the Project would be fully mitigated such that no adverse effect would remain after mitigation.
LOS = level-of-service

The mitigation measures described above would fully mitigate 9 of the 25 intersections where the Build Alternatives would result in impacts without mitigation. For the other 16 intersections, the identified mitigation measures would reduce the increase in delay caused by the Build Alternatives but not to the extent that the adverse impact would be fully mitigated. Mitigation measures that would further reduce delay, including adding additional lanes, were considered, but were determined to be infeasible, primarily because of the need to also acquire additional right-of-way. Therefore, adverse effects would remain after mitigation.

Figure 3-17. Intersection No. 91



Source: Metro 2021s

3.5.2.2 Transit Conditions

As described in Section 3.4.2, the Build Alternatives would be beneficial to transit conditions in the Study Area as increased levels of transit service would be provided by a new LRT line. No substantial impacts have been identified, so no adverse effects would result, and mitigation measures are not required.

Impacts to traffic operations, described in Section 3.4.1, have the potential to delay bus service and increase unreliability. While these impacts to traffic operations would affect bus operations, they would not result in adverse effects because the change in delays would be minimal because local bus service schedules are continually reviewed and adjusted by regional and local transit agencies.

3.5.2.3 Active Transportation

The Build Alternatives would affect existing and planned bicycle and pedestrian facilities at several locations. In addition, the new transit service provided by the Build Alternatives would increase demand for bicycle and pedestrian facilities. However, these facilities would be improved as part of the Build Alternatives, and no adverse effects to these facilities are anticipated; thus, no mitigation measures would be required. If it is not feasible to use the property that is currently a nursery for the Bellflower-Paramount Bike Trail, Mitigation Measure LU-1 (described in Section 4.1.4 of the Land Use Section and in more detail in the *West Santa Ana Branch Transit Corridor Project Final Land Use Impact Analysis Report* (Appendix E)) includes specific provisions that would help to modify the proposed Paramount Bike Trail sections west of Somerset Boulevard into a Class II bikeway.

3.5.2.4 Parking

Section 3.4.4 describes the expected parking impacts associated with the Build Alternatives. Parking impacts are associated with additional demand for new stations and the permanent loss of parking from station, track construction, and facilities to support the LRT operations. Mitigation Measures TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would be implemented to reduce the effects from the loss of on- and off-street parking spaces and the parking demand forecasted at the new stations.

TRA-21: Parking Monitoring and Community Outreach

- Within the one-half-mile area surrounding each WSAB station, an assessment would be conducted to monitor on-street and off-street parking activity resulting from project operation. The assessment would compare parking availability prior to the opening of service to the availability six months following the opening of service. Surveys would be conducted at each station area to identify where WSAB parking demand is at least 20 percent greater than the demand before opening of service (i.e., the new transit service has increased parking demand by 20 percent or more).
- Metro would work with the appropriate local jurisdiction, business owners, and affected communities for that station area to assess the need for an appropriate on- and off-street parking management program, considering the nearby community's and each proposed station's parking needs.
- Specific parking management strategies could include restriping, modifying parking restrictions, and adjusting the time limits for on-street parking. For off-street parking, signing and enforcement services could be included.
- Another element would be implementing or enhancing a residential permit parking program for the affected neighborhoods. Metro would coordinate with and support jurisdictions in outreach meetings within the affected communities to gauge the interest of residents participating in a residential permit parking program (prior to the opening of the new light rail service), regardless of whether parking shortages have been identified.

TRA-22: Parking Mitigation Program (Permanent)

Metro would coordinate with local jurisdictions to address the physical loss of public parking spaces resulting from implementation of the Project. This could include, but not be limited to, restriping the existing street to allow for diagonal parking, reducing the number of restricted parking areas, and adjusting the time limits for on-street parking.

Implementation of TRA-21 (Parking Monitoring and Community Outreach) and TRA-22 (Parking Mitigation Program [Permanent]) would reduce parking impacts and also provide indirect mitigation for the loss of off-street parking by allowing additional on-street parking where appropriate and feasible. These measures would be implemented shortly before the WSAB opening so that the parking, social, and economic conditions during that time are considered when identifying the most appropriate parking strategies to implement. Adverse effects would be reduced with implementation of this measure; however, adverse effects are likely to remain.

3.6 California Environmental Quality Act Determination

3.6.1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

3.6.1.1 No Project Alternative

Under the No Project Alternative, the Build Alternatives would not be introduced, and no changes would occur to the existing conditions within the Affected Area for operation of transit, roadway, bicycle, and pedestrian facilities. Therefore, conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system would not occur; impacts would be less than significant, and mitigation would not be required.

3.6.1.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Regionally, Alternative 1 comprises 1 of the 17 transit projects funded by Measure R, a one-half cent sales tax approved by LA County voters in November 2008, and Measure M, an extension of Measure R and an additional one-half cent sales tax approved by voters in November 2016. The Project is identified in the LRTP (Metro 2009a). Alternative 1 would provide expanded transit service through a new LRT line consistent with adopted policies, plans, and programs related to public transit.

Table 3.47 summarizes an evaluation of general plans or transportation and traffic study guidelines for 15 cities, as well as Metro and LA County within the Study Area. As shown, Alternative 1 would be consistent with plans, ordinances, and policies addressing the circulation system for transit, roadway, bicycle, and pedestrian facilities.

Alternative 1 would include physical changes to local streets within the roadway circulation system. Modifications would vary throughout the corridor and would include new train at-grade crossings, modified access near grade separations, new driveways to provide access to parking and stations, realignment of existing bike crossings, modification of existing pedestrian crossings, elimination of left-turn movements, including for trucks, and realignment of local streets. These modifications have been identified to improve operations and safety for drivers, bicyclists, and pedestrians. The location and nature of the modifications are consistent with the programs, plans, ordinances, and policies of the affected jurisdictions, as summarized in Table 3.47. The guidance in those documents was reviewed to confirm that there are no inconsistencies. Additionally, implementation of the Alternative 1 would not preclude construction of a roadway project identified in approved plans. The new project elements (e.g., tracks, stations, and supporting infrastructure) would be designed consistent with Metro Rail Design Criteria or equivalent criteria[3] and with the local city General Plan Circulation Elements (e.g., City of Bellflower Circulation Element, Section 6.3 – Goal 3: Provide residents and business occupants in the City of Bellflower with a convenient and viable public transportation system).

[3] Flexibility for the development of other performance criteria, perhaps in support of a Public-Private Partnership procurement, is provided. The ultimate criteria used will achieve the same performance standards as those established in the Metro guidance.

Table 3.47. Alternative 1 Consistency with Circulation System Policy, by Study Area Jurisdiction

No.	City/Agency	Circulation System				Source	Web Site
		Transit	Roadway*	Bicycle	Pedestrian		
1	Los Angeles	yes	yes	yes	yes	*Transportation Impact Study Guidelines* (LADOT 2016)	http://ladot.lacity.org/sites/g/files/wph266/f/COLA-TISGuidelines-010517.pdf
2	Vernon	yes	yes	yes	yes	*General Plan* (City of Vernon 2015)	http://www.cityofvernon.org/images/community-services/Zoning/Circulation%20&%20Infrastructure%20Element%202015.pdf
3	Huntington Park	yes	yes	yes	yes	*General Plan* (City of Huntington Park 1991)	http://www.hpca.gov/DocumentCenter/View/407
4	Maywood	yes	yes	yes	yes	*General Plan* (City of Maywood no date)	https://evogov.s3.amazonaws.com/media/100/media/35350.pdf
5	Bell	yes	yes	yes	yes	*General Plan* (City of Bell 1996)	http://www.cityofbell.org/home/showdocument?id=714
6	Cudahy	yes	yes	yes	yes	*General Plan* (City of Cudahy 2016)	http://www.cityofcudahy.com/uploads/5/3/9/9/53994499/cudahy_existing_conditions_report_2-2016_final.pdf
7	South Gate	yes	yes	yes	yes	*General Plan* (City of South Gate 2009)	http://www.cityofsouthgate.org/DocumentCenter/View/147
8	Bell Gardens	yes	yes	yes	yes	*General Plan* (City of Bell Gardens 2016)	https://www.bellgardens.org/government/city-departments/community-development/planning/general-plan
9	Lynwood	yes	yes	yes	yes	*General Plan* (City of Lynwood 2003)	http://lynwood.ca.us/wp-content/uploads/2016/07/2003-08CityofLynwoodGeneralPlan.pdf
10	Downey	yes	yes	yes	yes	*General Plan* (City of Downey 2005)	http://www.downeyca.org/civicax/filebank/blobdload.aspx?BlobID=3490

No.	City/Agency	Circulation System				Source	Web Site
		Transit	Roadway*	Bicycle	Pedestrian		
11	Paramount	yes	yes	yes	yes	*General Plan* (City of Paramount 2007)	http://cdm16255.contentdm.oclc.org/cdm/ref/collection/p266301ccp2/id/714
12	Bellflower	yes	yes	yes	yes	*General Plan* (City of Bellflower 1997)	https://www.bellflower.org/civicax/filebank/blobdload.aspx?BlobID=28088
13	Lakewood	yes	yes	yes	yes	*General Plan* (City of Lakewood 2009)	http://www.lakewoodcity.org/civicax/filebank/blobdload.aspx?BlobID=22728
14	Artesia	yes	yes	yes	yes	*General Plan* (City of Artesia 2010)	http://www.cityofartesia.us/DocumentCenter/View/101
15	Cerritos	yes	yes	yes	yes	*General Plan* (City of Cerritos 2004)	http://www.cerritos.us/GOVERNMENT/_pdfs/Chapter04.Circulation.pdf
16	Metro Congestion Management Program	yes	yes	yes	yes	*Congestion Management Program* (Metro 2010e)	http://media.metro.net/docs/cmp_final_2010.pdf
17	LA County	yes	yes	yes	yes	*Traffic Impact Analysis Report Guidelines* (LA County 1997)	http://dpw.lacounty.gov/traffic/traffic%20impact%20analysis%20guidelines.pdf

Source: Metro 2021s
Notes: * LOS was not considered when determining environmental impacts.
LA = Los Angeles; LADOT = Los Angeles Department of Transportation

Alternative 1 would improve transit service and accessibility, which is a broad goal of most plans. Because Alternative 1 would operate in an exclusive right-of-way, travel times with the LRT would be shorter than existing transit service in the corridor. Reliability would also improve. Existing transit services in the Study Area include Metro Rail (six lines), Metrolink (three lines), Metro Rapid (six routes), Metro Express (two routes), shuttle bus (two routes), local bus (nine routes), municipal operators (seven routes), and local operators. For all of these transit services, there is the potential for positive and negative changes to individual routes and stops/stations. New service on Alternative 1 would result in shifts in transit riders away from some services but could also increase ridership on feeder routes and on transit service in general.

Changes to active transportation (pedestrians and bicyclists) facilities would occur where Alternative 1 would remove or limit the functionality of a bike facility or sidewalk. These changes would either result in new facilities or existing facilities would be upgraded and overall function maintained. Impacts (both beneficial and significant) could occur in the areas adjacent to stations and along the alignment. Where construction would encroach on existing

bike facilities or sidewalks, such as the Paramount Bike Trail and Bellflower Bike Trail, Mitigation Measure LU-1 (Consistency with Bike Plans), described in Section 4.1.4 of the Land Use Section, would require realignment of these segments so the overall function would be maintained and operational and there would not be permanent significant impacts.

Alternative 1 could also preempt the future development and implementation of several proposed bicycle paths including the Class I bicycle path along Salt Lake Avenue (Cities of Huntington Park, Bell, and Cudahy) and Class I bicycle path north of Rayo Avenue and south of the LA River (City of South Gate). However; while planned, the bike facilities are unfunded and not scheduled for implementation. As further discussed in Section 4.1.3.2 of the Land Use Section and Section 4.16.3.2 of the Parklands Section, sufficient space would be available to develop a Class II or Class III bicycle path along the street, which would maintain the connectivity identified in the bicycle master plans. However, the reclassification of the bike paths is considered a conflict with the current bike plans and a significant impact would occur. Section 4.18.3.2 of the Safety and Security Section addresses pedestrian and bicycle safety at individual station locations near the guideway and at-grade crossings. Potential conflicts have been identified, and measures to address safety are provided. The net effect is that the bicycle system with Alternative 1 would generally be the same as with the No Project Alternative. Additional sidewalks and bicycle facilities would provide a beneficial impact, both for active transportation users accessing the stations and the broader community. The Alternative 1 design would also comply with ADA requirements. Alternative 1 would improve nonmotorized/active transportation facilities by replacing and upgrading the existing ones removed during construction and confirming those facilities (crosswalks, sidewalks, paths, and mid-block crossings) are retained and/or replaced to meet the required continuity and performance.

Under Mitigation Measure LU-1(Consistency with Bike Plans) described in Section 4.1.4, Metro would continue coordination efforts with the Cities of Huntington Park, Bell, Cudahy, and South Gate to minimize potential impacts to the future implementation of the planned bike trails identified in their bike master plans. As part of this effort, Metro, as appropriate, would support preparation of amended language for each affected bicycle plan demonstrating that planned bicycle facilities could still achieve an individual city's mobility and connectivity goals. However, because the process to amend bike plans is a local process, including public participation, the ultimate outcome and resolution of plan elements cannot be predicted. As such, despite Metro's best efforts and coordination and with the implementation of mitigation, Alternative 1 may still conflict with bike master plans. Therefore, even with implementation of mitigation, Alternative 1 would result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1

Impacts Remaining after Mitigation: Significant and unavoidable.

3.6.1.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.1.2 is also applicable to Alternative 2. Alternative 2 would have similar proposed improvements to the public transit system as Alternative 1. Alternative 2 could preempt the future development and implementation of several proposed bicycle paths. Under Mitigation Measure LU-1 (Consistency with Bike Plans), Metro would continue coordination efforts with the Cities of Huntington Park, Bell, Cudahy, and South Gate to minimize potential impacts to the future

implementation of the planned bike trails identified in their bike master plans. However, the reclassification of the bike paths is considered a conflict with the current bike plans and a significant impact would occur. Therefore, even with implementation of mitigation, Alternative 2 would result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1

Impacts Remaining after Mitigation: Significant and unavoidable.

3.6.1.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.1.2 is also applicable to Alternative 3. Alternative 3 would have similar proposed improvements to the public transit system as Alternative 1. Alternative 3 could preempt the future development and implementation of several proposed bicycle paths. Under Mitigation Measure LU-1 (Consistency with Bike Plans), Metro would continue coordination efforts with the Cities of Huntington Park, Bell, Cudahy, and South Gate to minimize potential impacts to the future implementation of the planned bike trails identified in their bike master plans. However, the reclassification of the bike paths is considered a conflict with the current bike plans and a significant impact would occur. Therefore, even with implementation of mitigation, Alternative 3 would result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1

Impacts Remaining after Mitigation: Significant and unavoidable.

3.6.1.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.1.2 is also applicable to Alternative 4. Alternative 4 would have similar proposed improvements to the public transit system as Alternative 1. Alternative 4 could preempt the future development and implementation of several proposed bicycle paths. Under Mitigation Measure LU-1 (Consistency with Bike Plans), Metro would continue coordination efforts with the Cities of Huntington Park, Bell, Cudahy, and South Gate to minimize potential impacts to the future implementation of the planned bike trails identified in their bike master plans. However, the reclassification of the bike paths is considered a conflict with the current bike plans and a significant impact would occur.. Therefore, even with implementation of mitigation, Alternative 4 would result in a significant and unavoidable impact.

Mitigation Measures: Mitigation Measure LU-1

Impacts Remaining after Mitigation: Significant and unavoidable.

3.6.1.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

The impact analysis described for Alternative 1 in Section 3.6.1.2 is also applicable to Design Options 1 and 2. The design options would have similar proposed improvements to the public transit system as the Build Alternatives. Therefore, less-than-significant impacts would occur, and mitigation would not be required.

3.6.1.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The impact analysis described for Alternative 1 in Section 3.6.1.2 also applies to the Paramount and Bellflower MSF site options. The Paramount MSF site option would be consistent with adopted policies, plans, or programs. Therefore, less-than-significant impacts would occur, and mitigation would not be required.

The realignment of the segment of the Bellflower Bike Trail located within the PEROW may preempt future development and implementation of the Bellflower Bike Trail to the west of the Bellflower MSF site option. Implementation of Mitigation Measure LU-1 would be effective to demonstrate that modifications to the bicycle facilities would maintain continuity with other segments of the Paramount Bike Trail and Bellflower Bike Trail. The Bellflower MSF site option would not result in inconsistencies with the *Bellflower-Paramount Active Transportation Plan*. Therefore, less-than-significant impacts would occur.

Mitigation Measures: Mitigation Measure LU-1

Impacts Remaining after Mitigation: Less than significant.

3.6.2 Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Section 15064.3(b) addresses both land use and transportation projects, and broadly describes the methodology (including the potential for qualitative analysis used to assess VMT). The overall guidance for transportation projects is that they will have a less-than-significant project impact if they reduce VMT. Agencies are given "broad discretion" to select the methodology for analysis, or even apply a qualitative approach. The assessment for this CEQA requirement is focused on the projected change in VMT with the Project.

3.6.2.1 No Project Alternative

Under the No Project Alternative, the Build Alternatives would not be introduced and there would be no change to the existing conditions within the Affected Area for traffic operations. Therefore, there would be no change in VMT associated with the Project, and there would not be any significant impacts.

3.6.2.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Using the regional travel demand model, VMT was assessed for Alternative 1. The six-county SCAG region was used as the basis for the geographic evaluation of VMT. Table 3.48 is a summary of the VMT for Alternative 1 (assuming operation in 2017) compared to the existing condition. The VMT for Alternative 1 regionally is approximately 463 million VMT per day. Alternative 1 would result in a reduction in VMT of approximately 0.05 percent.

Table 3.48. Existing and Build Alternatives Daily Vehicle Miles Traveled (2017)

Alternative	Daily Regional VMT	Reduction (over Existing) in VMT (Miles)	Reduction
Existing	463,245,800	-	-
Alternative 1	463,029,700	216,100	-0.05%
Alternative 2	463,030,800	215,000	-0.05%
Alternative 3	463,174,000	71,800	-0.02%

Alternative	Daily Regional VMT	Reduction (over Existing) in VMT (Miles)	Reduction
Alternative 4	463,209,500	36,300	-0.01%
Design Option 1 (MWD)	463,009,500	236,300	-0.05%
Design Option 2	463,027,300	218,500	-0.05%

Source: Metro 2018f
Notes: MWD = Metropolitan Water District; VMT = vehicle miles traveled

Table 3.49 is a summary of the VMT measure for Alternative 1 compared to the No Build Alternative for 2042. As shown, Alternative 1 would decrease VMT by approximately 0.06 percent compared to the No Build Alternative.

Table 3.49. No Build and Build Alternatives Daily Vehicle Miles Traveled (2042)

Alternative	Daily Regional VMT	Reduction (over the No Build) in VMT (Miles)	Reduction
No Build	606,329,900	-	-
Alternative 1	605,938,400	391,500	-0.06%
Alternative 2	605,952,500	377,400	-0.06%
Alternative 3	606,199,000	130,900	-0.02%
Alternative 4	606,259,100	70,800	-0.01%
Alternative 1 with Design Option 1 (MWD)	605,892,100	437,800	-0.07%
Alternative 1 with Design Option 2	605,931,500	398,400	-0.07%

Source: Metro 2018f
Notes: MWD = Metropolitan Water District; VMT = vehicle miles traveled

Alternative 1 would have a less-than-significant impact because VMT would be reduced under both the existing and horizon year scenarios, and mitigation would not be required. This conclusion is reinforced by guidance published by the OPR in December 2018. *CEQA Guidelines* Section 15064.3(b)(2) provides that "[t]ransportation projects that reduce, or have no impact on, [VMT] should be presumed to cause a less-than-significant transportation impact." Similarly, the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018) notes that "transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation."

3.6.2.3 Alternative 2: 7th St/Metro Center to Pioneer Station

As shown in Table 3.48 and Table 3.49, Alternative 2 would reduce VMT compared to conditions without the Project, both under existing conditions and in the 2042 horizon year. Therefore, Alternative 2 would have a less-than-significant impact, and mitigation would not be required.

3.6.2.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

As shown in Table 3.48 and Table 3.49, Alternative 3 would reduce VMT compared to conditions without the Project under both existing conditions and the 2042 horizon year. Therefore, Alternative 3 would have a less-than-significant impact, and mitigation would not be required.

3.6.2.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

As shown in Table 3.48 and Table 3.49, Alternative 4 would reduce VMT compared to conditions without the Project under both existing conditions and the 2042 horizon year. Therefore, Alternative 4 would have a less-than-significant impact, and mitigation would not be required.

3.6.2.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD

The VMT analysis for Design Option 1 (MWD) included the same geographic area as the Build Alternatives. As shown in Table 3.48 and Table 3.49, Alternative 1 with Design Option 1 (MWD) would reduce VMT compared to conditions without the Project under both existing condition and the 2042 horizon year. Therefore, Design Option 1 (MWD) would result in a less-than-significant impact, and mitigation would not be required.

Design Option 2: Add Little Tokyo Station

The VMT analysis for Design Option 2 included the same geographic area as the Build Alternatives. As shown in Table 3.48 and Table 3.49, Alternative 1 with Design Option 2 would reduce VMT compared to conditions without the Project under both existing condition and the 2042 horizon year. Therefore, Design Option 2 would result in a less-than-significant impact, and mitigation would not be required.

3.6.2.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The Paramount and Bellflower MSF site options are project features of the Build Alternatives described in the prior sections. There is an overall VMT reduction associated with the Build Alternatives, and the MSF site options are integral elements of the Build Alternatives. The two MSF site options support the WSAB improvements that ultimately reduce VMT. Therefore, the MSF site options would have less-than-significant impacts and mitigation would not be required.

3.6.3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

3.6.3.1 No Project Alternative

Under the No Project Alternative, the Build Alternatives would not be introduced and there would be no change to the existing conditions within the Affected Area for traffic operations. Therefore, there would be no change in hazards, and mitigation would not be required.

3.6.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

This impact is discussed in Section 6.3 of the Safety and Security Impact Analysis Report (Appendix F) and Section 4.18.5 of the Safety and Security Section where a similar CEQA

threshold, "Would the Project Substantially Increase Hazards Due to a Design Feature or Incompatible Uses?" has been presented and analyzed. As shown in those sections, impacts from the Build Alternatives would be less than significant after mitigation (Mitigation Measure SAF-1, described in Section 4.18.4 of the Safety and Security Section).

Additionally, at-grade crossings would be designed with safety measures. Changes to the lengths of vehicle queues from nearby intersections back to train crossings could result in vehicle delays. The result could be vehicles stopped on the tracks, unless other measures are taken, such as placing signs to indicate that stopping on the tracks is not permitted. To minimize the potential for vehicles queuing onto at-grade crossings, Project Measures TR PM-1 (Pre-signals and Queue-cutter Signals) though TR PM-9 (188th Street Closure) will be implemented. Safety requirements would be established in accordance with FTA and CPUC requirements, along with coordination with the freight operators. At freeway crossing locations, safety requirements would be established in accordance with Caltrans requirements. Metro design criteria would also be followed; therefore, the at-grade crossings would be operated in accordance with Metro system safety plans, policies, and procedures. These strategies would reduce the potential for hazards between other users and the new LRT service to a less-than-significant level after mitigation.

Mitigation Measures: Mitigation Measure SAF-1 (introducing intrusion crash walls and intrusion detection systems), as described in Section 4.18.4 of the Safety and Security Section, would require implementation of an encroachment detection system to detect unauthorized entry into Metro right-of-way to reduce the potential safety impacts associated with operation of freight and LRT in shared right-of-way. With implementation of this measure, impacts would be less-than-significant.

Impacts Remaining after Mitigation: With implementation of Mitigation Measure SAF-1, impacts associated with the introduction of LRT vehicle operations along the corridor and the corresponding safety hazards that would result from these operations, as well as the corresponding interface with vehicular, bicycle, pedestrian, and freight rail operations, would be less than significant.

3.6.3.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The impact analysis, mitigation measure, and conclusions described for Alternative 1 in Section 3.6.3.2 are also applicable to Alternative 2. The strategies would reduce the potential for hazards between other users and the new LRT service to a less-than-significant level after mitigation.

Mitigation Measures: Mitigation Measure SAF-1

Impacts Remaining after Mitigation: Less than significant.

3.6.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The impact analysis, mitigation measure, and conclusions described for Alternative 1 in Section 3.6.3.2 are also applicable to Alternative 3. The strategies would reduce the potential for hazards between other users and the new LRT service to a less-than-significant level after mitigation.

Mitigation Measures: Mitigation Measure SAF-1

Impacts Remaining after Mitigation: Less than significant.

3.6.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The impact analysis, mitigation measure, and conclusions described for Alternative 1 in Section 3.6.3.2 are also applicable to Alternative 4. The strategies would reduce the potential for hazards between other users and the new LRT service to a less-than-significant level after mitigation.

Mitigation Measures: Mitigation Measure SAF-1

Impacts Remaining after Mitigation: Less than significant.

3.6.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD

Design Option 1 (MWD) would not introduce design elements that could increase hazards (e.g., new at-grade crossings, unsafe pedestrian crossings). The impact analysis described for design options in Section 6.3 of the Safety and Security Impact Analysis Report (Appendix F) and Section 4.18.5 of the Safety and Security Section has been presented and analyzed. Therefore, Design Option 1 (MWD) would have a less-than-significant impact, and mitigation would not be required.

Design Option 2: Add Little Tokyo Station

Design Option 2 would result in the addition of a station and the corresponding design features; however, these changes would not result in the introduction of new hazards associated with geometric design or incompatible uses. The impact analysis for design options is included in Section 6.3 of the Safety and Security Impact Analysis Report (Appendix F) and Section 4.18.5 of the Safety and Security Section. As summarized in those sections, Design Option 2 would have a less-than-significant impact and mitigation would not be required.

3.6.3.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The Paramount and Bellflower MSF site options would not introduce design elements that could increase hazards (e.g., new at-grade crossings, pedestrian crossings with safety issues). The MSF site options would be located on a site with fencing, preventing public access. Therefore, the MSF site options would not introduce design features that could result in hazards, would have less-than-significant impacts, and mitigation would not be required.

3.6.4 Result in inadequate emergency access?

3.6.4.1 No Project Alternative

Under the No Project Alternative, the Build Alternatives would not be introduced and there would be no change to the existing conditions within the Affected Area for traffic operations. Therefore, there would be no changes that would result in inadequate emergency access and no impacts would occur.

3.6.4.2 Alternative 1: Los Angeles Union Station to Pioneer Station

As described in Section 4.18.5.1 of the Safety and Security Section, the potential for significant impacts would be less than significant because Alternative 1 would not interfere with adopted emergency response or evacuation plans, emergency service providers, or otherwise increase the demand for emergency response services, and mitigation would not be required. Alternative 1 would not remove access routes used by existing emergency

service providers. Delays in emergency response services or evacuation plans due to at-grade crossings gate down times would also be less than significant because these plans would not typically involve crossing active rail corridors.

3.6.4.3 Alternative 2: 7th St/Metro Center to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.4.2 is also applicable to Alternative 2 because project elements and impact minimization strategies would be similar. Alternative 2 would not be expected to interfere with emergency response plans or increase the demand for emergency response services. Therefore, less-than-significant impacts would occur, and mitigation would not be required.

3.6.4.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.4.2 is also applicable to Alternative 3 because project elements and impact minimization strategies would be similar. Alternative 3 would not be expected to interfere with emergency response plans or increase the demand for emergency response services. Therefore, less-than-significant impacts would occur, and mitigation would not be required.

3.6.4.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

The impact analysis described for Alternative 1 in Section 3.6.4.2 is also applicable to Alternative 4 because project elements and impact minimization strategies would be similar. Alternative 4 would not be expected to interfere with emergency response plans or increase the demand for emergency response services. Therefore, less-than-significant impacts would occur, and mitigation would not be required.

3.6.4.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

The impact analysis described for Alternative 1 in Section 3.6.4.2 would also apply to Design Options 1 and 2 because project elements and impact minimization strategies would be similar. The design options would not be expected to interfere with emergency response plans or increase the demand for emergency response services. Therefore, the design options would result in less-than-significant impacts, and mitigation would not be required.

3.6.4.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The impact analysis described for Alternative 1 in Section 3.6.4.2 also applies to the Paramount MSF site option. The Paramount MSF site option would have similar impacts as described above because of the at-grade crossing to access the MSF site option. The Paramount MSF site option would use a connection track that uses the existing Rosecrans Avenue at-grade crossing to connect the remote MSF site option to the rest of the LRT track network. The Bellflower MSF site option would not add train crossing events, as it would be directly connected to the rest of the LRT track network. Train crossing frequency related to the Paramount MSF site option would be less compared to the Build Alternatives. The MSF site options would not remove access routes used by existing emergency service providers. Therefore, the MSF site options would not interfere with local jurisdictions' emergency response plans and would not overtax existing emergency service providers. Emergency response services could experience delays during gate down times at the at-grade crossing

associated with the Paramount MSF site, but those delays would result in less-than-significant impacts, and mitigation would not be required.

3.7 Construction

3.7.1 Construction Activities

The Project would include track and station construction at-grade through and adjacent to local streets with live traffic, underground track and station construction, overhead/aerial track and station construction, at-grade station parkway construction, and street closure/turning movement restrictions. The following summarizes Metro's current assumptions regarding construction activities; refer to the *West Santa Ana Branch Transit Corridor Project Construction Methods Report* (Metro 2021g) (Appendix L) and Section 4.19 of the Construction Section for additional detail. The analysis conservatively assumes longer durations of closures and more peak hour, weekday, and full street closures than are likely to be required.

Tunnels for the underground parts of Alternatives 1 and 2 would be constructed using tunnel boring machines (TBMs) to control ground and groundwater inflows into the tunnel that could lead to surface settlement if not mitigated. In addition, this technology allows the tunnel lining to be installed concurrently, which also prevents groundwater from entering the tunnel behind the TBM. The TBM would be launched from a portal located on a property adjacent to Long Beach Avenue between East 14th and Newton Streets. The TBM would be retrieved at a designated end point through a crossover cavern. The extraction of the TBMs would occur at the station box at the terminus locations for Build Alternative 2 in the downtown transit core or Build Alternative 1 at LAUS. In-street work areas would only be used when there is no viable off-street alternative.

Construction of the LRT tracks for the Project would occur within active and inactive rail corridors, depending on the location. In the San Pedro Subdivision, which is currently used for freight, a temporary shoo-fly track would be constructed to allow for the construction of new freight tracks. Freight trains would be redirected to the temporary shoo-fly while new freight tracks are constructed. After construction of the new freight tracks is complete, freight rail services would be transferred to the newly constructed freight tracks. The new LRT tracks would be constructed after the existing freight track service is switched to the relocated track. Coordination with the existing freight operator would be required.

Construction of an LRT aerial guideway would begin with the installation of piles for columns and piers that support the structure and loads that would be carried on it. Pile-supported columns would be constructed in two main stages. In the first stage, piles made from steel or concrete, typically about 12 to 15 inches in diameter, would be driven into the ground by vibratory or pile driving equipment or, alternatively, cast-in-drilled-hole (CIDH) piles. The second stage joins the piles with the construction of the pile cap, typically a 4- to 5-foot slab of reinforced concrete. The pile cap would be constructed to distribute the structural load to two or more piles. Large-diameter CIDH pile construction consists of drilling shafts that are up to 8 feet in diameter, or larger, with the placement of a rebar cage inside the shaft, and then filling it with concrete. The diameter of the CIDH piles would depend on the structural load limit to be supported. Driven piles and regular CIDH piles require a pile cap. Large-diameter CIDH piles do not require a pile cap and can be as large, or larger than, the column it supports. At a few locations along Long Beach Avenue, straddle bents would be used when a singular column supporting the aerial guideway is not feasible. These would occur, for example, to maintain an existing left-hand turn lane. Straddle bents consist of two large-

diameter columns, offset from the row of typical columns, with a beam between them and the aerial guideway on top of the beam.

At-grade crossings would use embedded tracks. The construction method for embedded tracks would begin with the demolition of existing median or roadway where the LRT would be built, preparation of the rail track bed, installation of the supporting track slab, and laying of the rail tracks. Grade crossings would be constructed using pre-fabricated panels that would incorporate the rails and roadway surface. To accommodate the guideway, street sections may require widening or reconstruction. Street reconstruction activities would be required at potential at-grade crossing locations and within the affected street right-of-way. Street reconstruction would allow for track slab placement, crossing gates, traffic signals, and rails.

The Project would require cut-and-cover construction for underground stations and track crossover caverns from the ground surface. This construction would entail a shoring system with a temporary deck over the excavated area, constructing the underground facilities beneath the deck, and then backfilling and restoring the surface once the facilities are complete. Underground stations would be constructed using a TBM or the cut-and-cover construction method. Temporary concrete decking could be placed over the cut immediately following the first lift of excavation (at about 12 to 15 feet below ground surface) to allow traffic to pass above. Construction of underground stations may also require the support of existing underground utilities that cannot be relocated.

Construction of the at-grade stations would involve cast-in-place concrete or pre-cast panels to construct platform along with ramps and stairs. Station furnishings would then be installed, including canopies, railings, lighting, seating, signage, artwork, bike racks, and fare vending equipment.

Construction of the surface parking facilities would involve initial demolition of each site where existing structures and pavement are present, subgrade preparation of the parking area, paving, and striping. Concrete curbs, lighting, driveways, sidewalks, and landscaping would be installed as necessary.

Table 3.50 is a summary of the potential staging and laydown area options. Multiple construction staging areas would be used throughout construction of the Project. Table 3.50 also lists the associated highways and streets where haul routes would likely operate. The haul routes were selected on the basis of safety and travel time while minimizing the potential effects to traffic, residences, and businesses. Highway haul routes would include I-10, I-105, I-110, I-605, I-710, SR-91, US-101, and others as appropriate. Major arterial streets are used for the haul routes. These haul routes would need approval from the local jurisdiction city or agency. Temporary easements would be required on sidewalks, streets, and private property in proximity to some of these construction staging areas and work areas. The staging, laydown, and haul routes are based on the latest information as identified at this stage of project development and are currently in review. All are subject to change based on coordination with the applicable local cities/agencies and optimization by the contractor during construction. Once the contractor has developed a detailed construction staging approach in coordination with the applicable local cities and/or agencies, Metro would review the approach for consistency with the project approval and Record of Decision. Based on the review, FTA and Metro would complete additional environmental documentation, if any is necessary.

Table 3.51 provides a summary of the anticipated road, sidewalk, and bicycle facility closures, and affected transit routes due to construction activities.

Table 3.50. Construction Staging Areas and Haul Routes

No.	Build Alternative Affected	Location	Location Description	Private/Public Ownership	Project Component	Haul Route
1	1	Northeast corner, Alameda St and Cesar Chavez Blvd	United States Postal Service parking lot	Private	LAUS – Forecourt	US-101, Alameda St, Commercial St, Los Angeles St
2	1	Northeast corner, Alameda St and Los Angeles St	LAUS Parking Lot B	Public	LAUS – Forecourt	US-101, Alameda St, Commercial St, Los Angeles St
3	1	Southeast corner, Alameda St and Los Angeles St	La Petite Academy of Los Angeles parking lot	Public	LAUS – Forecourt	US-101, Alameda St, Commercial St, Los Angeles St
4	1	East side of LAUS, north of US-101 freeway, west of Metro L (Gold) Line platform	LAUS Parking Lot P and landscape	Public	LAUS – Forecourt	US-101, Alameda St, Commercial St, Los Angeles St
5	1, Design Option 2	Northeast corner, E 1st St and Alameda St	Regional Connector staging site	Public	Little Tokyo Station	US-101, Alameda St, Arcadia St, Commercial St, Los Angeles St
6	1, Design Option 2	Northwest corner, E. 2nd St and Alameda St	Office Depot parking lot	Public and private	Little Tokyo Station	US-101, Alameda St, Arcadia St, Commercial St, Los Angeles St
7	1	West side of Alameda St between 6th and 7th St	Bus facility, partial sidewalk, and southbound lanes	Public and Metro-owned	Arts/Industrial District Station	I-10, Alameda St, Newton St
8	1	East side of Alameda St between 7th St and Alameda St	Bus facility, partial sidewalk, one northbound lane, commercial buildings	Permanent/partial take	Arts/Industrial District Station	I-10, Alameda St, Newton St

No.	Build Alternative Affected	Location	Location Description	Private/Public Ownership	Project Component	Haul Route
9	2	North side of 8th St between Francisco St and Figueroa St	Located on vacant parcel between Target parking structure and 777 S Figueroa St, Los Angeles, CA 90017. Partial lane and sidewalk	Public and private	7th St/Metro Center Station	I-110, 8th St, James M Wood Blvd/9th St
10	2	Southeast corner, 8th St and S Figueroa St	Parking lot	Private	7th St/Metro Center Station	I-110, 8th St, James M Wood Blvd/9th St
11	2	North side of 8th St between Figueroa Flower St	Partial lane and sidewalk	Public	7th St/Metro Center Station	I-110, 8th St, James M Wood Blvd/9th St
12	2	North side of 8th St between Flower St and Hope St	Partial lane and sidewalk	Public	7th St/Metro Center Station	I-110, 8th St, James M Wood Blvd/9th St, Hope St
13	2	South side of 8th St between Main St and Los Angeles St	Partial westbound lane and sidewalk	Public	South Park/Fashion District Station	I-10, 8th St, 18th St, Main St, Los Angeles St
14	2	South side of 8th St between Los Angeles St and Santee St	Partial lane street and sidewalk	Public	South Park/Fashion District Station	I-10, 8th St, 9th St, 18th St, Main St, Los Angeles St, Santee St
15	2	Northern end of Santee St, north of 8th St	End of local street	Public	South Park/Fashion District Station	I-10, 8th St, 9th St, 18th St, Main St, Los Angeles St, Santee St
16	2	Southwest corner, 8th St and Santee St	Parking lot	Private	South Park/Fashion District Station	I-10, 8th St, 9th St, 18th St, Main St, Los Angeles St, Santee St
17	1, 2	East side and West side of Long Beach Ave between Olympic Blvd and 14th St	Commercial/Industrial	Private	TBM launch portal	I-10, Long Beach Ave, 14th St, 16th St, 17th St, Alameda St, Newton St

No.	Build Alternative Affected	Location	Location Description	Private/Public Ownership	Project Component	Haul Route
18	1, 2	Long Beach Ave between Olympic Blvd and 14th St	Metro Bus facility partial strip of street and sidewalk	Public and private	TBM launch portal	I-10, Long Beach Ave, 14th St, 16th St, 17th St, Alameda St, Newton St
19	1, 2	Long Beach Ave between Olympic Blvd and 14th St	Industrial/Commercial/ street and sidewalk	Public and private	TBM launch pit	I-10, Long Beach Ave, 14th St, 16th St, 17th St, Alameda St, Newton St
20	1, 2	West side of Long Beach Ave between 14th and 15th St	Industrial/Commercial	Private	TBM launch pit	I-10, Long Beach Ave, 14th St, 16th St, 17th St, Alameda St, Newton St
21	1, 2	West side of Long Beach Ave, below I-10 Freeway	Freeway underpass	Public and private	TBM staging area	I-10, 14th St, 16th St, 17th St, Alameda St, Long Beach Ave, Newton St
22	1, 2	Northeast corner, Long Beach Ave and Washington Blvd	Parking lot and industrial property 1700 Long Beach Ave, Los Angeles	Private	Long Beach Blvd viaduct	I-10, 16th St, 17th St, Alameda St, Central Ave, Compton Ave, Washington Blvd
23	1, 2	Northwest corner, Long Beach Ave and Washington Blvd	Industrial building	Private	Long Beach Blvd viaduct	I-10, 16th St, 17th St, Alameda St, Central Ave, Long Beach Ave, Washington Blvd
24	1, 2	Northwest corner, Long Beach Ave and 20th St	Fueling facility	Private	Long Beach Blvd viaduct	I-10, 16th St, 20th St, Alameda St, Compton Ave, Hooper Ave, Washington Blvd
25	1, 2	Northeast corner, Long Beach Ave and Vernon Ave	Light Industrial	Public and private	Long Beach Blvd viaduct	I-10, Alameda St, Newton St, Vernon Ave
26	1, 2, 3	Northeast corner, Long Beach Ave and Slauson Ave	Industrial	Private	Long Beach Blvd viaduct	I-10, Alameda St, Newton St, Slauson Ave
27	1, 2, 3	Southeast corner, Long Beach Ave and Slauson Ave	Industrial	Private	Long Beach Blvd viaduct	I-10, Alameda St, Newton St, Slauson Ave

No.	Build Alternative Affected	Location	Location Description	Private/Public Ownership	Project Component	Haul Route
28	1, 2, 3	Southeast corner, Slauson Ave and Randolph St	Industrial	Private (UPRR ROW)	Long Beach Blvd viaduct	I-110, I-710, Alameda St, Atlantic Blvd, Florence Ave, Slauson Ave
29	1, 2, 3	Existing railroad ROW at Bissell St and Randolph St	Railroad ROW	Private (UPRR ROW)	Randolph Grade Separation	I-710, Atlantic Blvd, Florence Ave, Randolph St
30	1, 2, 3	Southeast of Firestone Blvd between Patata St and Mason St along railroad ROW	Warehousing/Logistics	Private	Firestone Station and grade separation	I-710, Firestone Blvd
31	1, 2, 3	West of Salt Lake Ave at end of Wood Ave	Vacant	Private	Los Angeles River Bridge	I-710, Firestone Blvd, Miller Way, Rayo Ave, Salt Lake Ave, Southern Ave
32	1, 2, 3	East of Salt Lake Ave between Duncan Way and Wood Ave	Vacant	Public and private	Los Angeles River Bridge	I-710, Firestone Blvd, Miller Way, Rayo Ave, Salt Lake Ave, Southern Ave
33	1, 2, 3	South of Miller Way, adjacent to I-710	Light Industrial Storage	Public and private	I-710 Undercrossing and Rio Hondo Channel Bridge	I-710, Firestone Blvd, Garfield Ave, Miller Way, Southern Ave
34	1, 2, 3	Northeast corner, railroad ROW and Garfield Ave, south of Imperial Hwy	Vacant	Private	Los Angeles River Bridge and I-170 Undercrossing	I-710, Imperial Hwy, Garfield Ave
35	1, 2, 3, 4	East of Center St and west of Industrial Ave between Lincoln and Nevada	Parking lot/ Commercial/Recycling	Public (permanent/full take for project facility)	I-105/C Line Station	I-105, Century Blvd, Center St
36	1, 2, 3, 4	North of Rosecrans Ave, South of San Pedro Subdivision railroad ROW	Railroad ROW	Private (rail ROW)	Paramount/ Rosecrans Station and grade separation	I-105, I-710, Rosecrans Ave, Paramount Blvd, Garfield Ave

No.	Build Alternative Affected	Location	Location Description	Private/Public Ownership	Project Component	Haul Route
37	1, 2, 3, 4	North of Rosecrans Ave, South of San Pedro Subdivision railroad ROW	Commercial and Industrial GCR Tires & Service 7801 E Rosecrans, Paramount	Public and private	Paramount/ Rosecrans Station and grade separation	I-105, I-710, Rosecrans Ave, Paramount Blvd, Garfield Ave
38	1, 2, 3, 4	Northwest corner, Bellflower Blvd and railroad ROW	Commercial and parking lot	Permanent/full take (project parking facility)	Bellflower Station	SR-91, Bellflower Blvd
39	1, 2, 3, 4	Southwest corner, San Gabriel River and SR-91	Vacant	Metro-owned right-of-way	San Gabriel River bridge	I-605, SR-91, Alondra Blvd, Artesia Blvd, Bellflower Blvd, South St, Studebaker Rd
40	1, 2, 3, 4	Northwest and Southwest corner, 188th and Pioneer Blvd	Commercial	Permanent/full take (project parking facility)	Pioneer Station parking structure	I-605, South St

Source: Metro 2021s
Notes: LAUS = Los Angeles Union Station; ROW = right-of-way; TBM = tunnel boring machine; UPRR = Union Pacific Railroad

Table 3.51. Anticipated Construction-Related Closures

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
City of Los Angeles	1	1, Design Option 2	Road	Little Tokyo Station	Temporary	Alameda St	1st St and Traction Ave	24-48	-	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	2	1, Design Option 2	Sidewalk	Little Tokyo Station	Temporary	Alameda St	1st St and Traction Ave	24-48	-	Half of west sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	3	1	Road	Arts/Industrial District Station	Temporary	Alameda St	6th St and Industrial St	24-48	-	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	4	1	Sidewalk	Arts/Industrial District Station	Temporary	Alameda St	6th St and Industrial St	24-48	-	Half of west sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	5	1, 2	Road	Tunnel portal	Permanent	Long Beach Ave	Olympic Blvd and Newton St	N/A	-	-
	6	1, 2	Sidewalk	Tunnel portal	Permanent	Long Beach Ave	Olympic Blvd and 14th St	N/A	-	At tunnel portal only
	7	1, 2	Sidewalk	Tunnel portal	Temporary	Long Beach Ave	Olympic Blvd and Newton St	24-48	-	Sidewalks on each side of street leading to portal

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	8	1, 2	Road	Tunnel portal	Permanent	14th St	Compton Ave and Long Beach Ave	N/A	-	-
	9	1, 2	Sidewalk	Tunnel portal	Permanent	14th St	Compton Ave and Long Beach Ave	N/A	-	-
	10	2	Road, bicycle	7th St/Metro Center Station pedestrian tunnel	Temporary	Figueroa St	7th St and 8th St	24-48	Metro 493, 495, 497, 498, 499, 699; DASH 423, F	Two traffic lanes closed during construction
	11	2	Sidewalk	7th St/Metro Center Station pedestrian tunnel	Temporary	Figueroa St	7th St and 8th St	24-48	Metro 493, 495, 497, 498, 499, 699; DASH 423, F	East side full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	12	2	Road	7th St/Metro Center Station	Temporary	8th St	Francisco St to Figueroa Ave	24-48	Metro 66	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	13	2	Sidewalk	7th St/Metro Center Station	Temporary	8th St	Francisco St to Figueroa Ave	24-48	Metro 66	North half of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	14	2	Road	7th St/Metro Center Station	Temporary	8th St	Figueroa Ave to Flower St	24-48	Metro 66	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	15	2	Sidewalk	7th St/Metro Center Station	Temporary	8th St	Figueroa Ave to Flower St	24-48	Metro 66	Southern half of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	16	2	Road	7th St/Metro Center Station	Temporary	8th St	Flower St to Hope St	24-48	Metro 66	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	17	2	Sidewalk	7th St/Metro Center Station	Temporary	8th St	Flower St to Hope St	24-48	Metro 66	Southern half of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	18	2	Road	South Park/ Fashion District Station	Temporary	8th St	Main St to Los Angeles St	24-48	Metro 66	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	19	2	Sidewalk	South Park/ Fashion District Station	Temporary	8th St	Main St to Los Angeles St	24-48	Metro 66	Southern half of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	20	2	Road	South Park/ Fashion District Station	Temporary	8th St	Los Angeles St to Santee St	24-48	Metro 66	Half of temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	21	2	Sidewalk	South Park/ Fashion District Station	Temporary	8th St	Los Angeles St to Santee St	24-48	Metro 66	Southern half of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	22	2	Road	Arts/Industrial District Station	Temporary	8th St	Alameda St to Naomi St	24-48	-	Half of street temporarily; full street closure (typically intermittently during nighttime or off-peak periods)
	23	2	Sidewalk	Arts/Industrial District Station	Temporary	8th St	Alameda St to Naomi St	24-48	-	Both sides of sidewalk temporarily; full sidewalk closure (typically intermittently during nighttime or off-peak periods)
	24	1, 2	Road	I-10 Bridge	Temporary	I-10	-	12-24	-	Intermittent nighttime closures

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	25	1, 2	Road	Long Beach Ave viaduct	Temporary	Long Beach Ave; NB Lanes	Washington Blvd to Slauson Blvd	24-48	Metro A (Blue) Line	Half of northbound road temporarily closed; intersections closed (typically intermittently during nighttime or off-peak periods)
City of Huntington Park	26	1, 2, 3	Road	Grade crossing	Permanent grade crossing	Randolph St	Wilmington Ave, Regent St, Albany St, Rugby Ave, Rita Ave	N/A	-	Cross street closed to crossing railroad ROW; access to Randolph St limited to right-in and right-out turning movements
	27	1, 2, 3	Sidewalk	Grade Crossing	Permanent grade crossing	Randolph St	Wilmington Ave, Regent St, Albany St, Rugby Ave, Rita Ave	N/A	-	Cross street closed to crossing railroad ROW; access to Randolph St limited to right-in and right-out turning movements
	28	1, 2, 3	Road	Pacific/Randolph Station	Permanent	Randolph St	Rugby Ave to Arbutus Ave	N/A	-	Loss of street parking on both sides of street (due to Pacific/Randolph Station)
	29	1, 2, 3	Sidewalk	Grade crossing	Temporary	Randolph St	Santa Fe Ave, Malabar St, Seville Ave, Miles Ave, Pacific Blvd, State St, Arbutus St, Alameda St,	1	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	30	1, 2, 3	Road	Grade crossing	Temporary	Randolph St	State St	3-6	Metro 254	Temporary lane closures and relocations during grade-crossing construction
	31	1, 2, 3	Road	Grade crossing	Temporary	Gage Ave	-	1	Metro 110	Temporary lane closures and relocations during grade-crossing construction; full closures (typically intermittently during nighttime)
	32	1, 2, 3	Road	Grade crossing	Temporary	Otis Ave	-	1	-	Temporary lane closures and relocations during grade-crossing construction; full closures (typically intermittently during nighttime)
	33	1, 2, 3	Sidewalk	Grade crossing	Temporary	Gage Ave	-	1	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	34	1, 2, 3	Sidewalk	Grade crossing	Temporary	Otis Ave	-	1	Metro 612	Close sidewalks during reconstruction and integration of new grade-crossing equipment
City of Bell	35	1, 2, 3	Road	Grade crossing	Temporary	Bell Ave	-	1	-	Temporary lane closures and relocations during grade-crossing construction; intermittent nighttime closures

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	36	1, 2, 3	Sidewalk	Grade crossing	Temporary	Bell Ave	-	1	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
City of Huntington Park/Bell/ Cudahy	37	1, 2, 3	Sidewalk	Grade crossing	Temporary	Florence Ave	-	1-3	Metro 111, 612	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	38	1, 2, 3	Road	Grade crossing	Temporary	Florence Ave	-	1-3	Metro 111, 612	Close sidewalks during reconstruction and integration of new grade-crossing equipment
City of Huntington Park/ Cudahy/ South Gate	39	1, 2, 3	Sidewalk	Grade crossing	Temporary	Santa Ana St	Salt Lake Ave	1-3	Metro 611	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	40	1, 2, 3	Road	Grade crossing	Temporary	Santa Ana St	Salt Lake Ave	1-3	Metro 611	Temporary lane closures and relocations during grade crossing and median construction; intermittent nighttime closures
City of Cudahy	41	1, 2, 3	Sidewalk	Grade crossing	Temporary	Ardine St	Salt Lake Ave	1-3	-	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	42	1, 2, 3	Road	Grade crossing	Temporary	Ardine St	Salt Lake Ave	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
City of South Gate	43	1, 2, 3	Road	Firestone grade separation	Temporary	Atlantic Ave and Firestone Blvd	-	12-24	Metro 115, 260, 762	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)
	44	1, 2, 3	Sidewalk	Grade crossing	Temporary	Southern Ave, Rayo Ave	-	1-3	Metro 115	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	45	1, 2, 3	Road, bicycle	Grade crossing	Temporary	Southern Ave, Rayo Ave	-	1-3	Metro 115	Temporary lane closures and relocations during grade-crossing construction; full closures (typically intermittently during nighttime)
	46	1, 2, 3	Road	I-710 undercrossing	Temporary	I-710	-	6-12	-	Full lane closures (typically intermittently during nighttime)
	47	1, 2, 3	Road	Grade crossing	Permanent Grade Crossing	Frontage Rd and Miller Way	-	1-3	-	Closure of private driveway grade crossings

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	48	1, 2, 3	Road	Grade separation	Temporary	Imperial Blvd and Garfield Ave	-	12-24	Metro 117, 120, 258	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)
	49	1, 2, 3	Sidewalk	Grade separation	Temporary	Imperial Blvd and Garfield Ave	-	12-24	-	Close sidewalks during reconstruction
	50	1, 2, 3	Road	Grade crossing	Temporary	Main St	-	1-3	-	Temporary lane closures and relocations during grade-crossing construction; full closures (typically intermittently during nighttime)
	51	1, 2, 3	Sidewalk	Grade crossing	Temporary	Main St	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	52	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Century Blvd	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	53	1, 2, 3, 4	Road	Grade crossing	Temporary	Century Blvd	-	1-3	-	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
City of South Gate/ Cudahy	54	1, 2, 3, 4	Road	Grade crossing	Temporary	Gardendale St	-	1 – 3	-	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)
	55	1, 2, 3, 4	Road	Grade crossing	Permanent	Gardendale St	-	-	-	Westbound left-turn lane closed
	56	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Gardendale St	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
City of Paramount	57	1, 2, 3, 4	Road	Grade separation	Temporary	N. Somerset Ranch Rd	-	12-24	-	Full closures (typically intermittently during nighttime)
	58	1, 2, 3, 4	Road	Grade separation	Temporary	I-105	-	12-24	Metro C (Green) Line	Full closures (typically intermittently during nighttime); potential lane width reduction
	59	1, 2, 3, 4	Road	Grade separation	Temporary	S. Somerset Ranch Rd	-	12-24	-	Full closures (typically intermittently during nighttime)
	60	1, 2, 3, 4	Road	Grade separation	Temporary	Paramount Blvd	-	12-24	Metro 265	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	61	1, 2, 3, 4	Sidewalk	Grade separation	Temporary	Paramount Blvd	-	12-24	Metro 265	Close sidewalks during reconstruction
	62	1, 2, 3, 4	Road	Grade separation	Temporary	Rosecrans Ave	-	12-24	Metro 125	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)
	63	1, 2, 3, 4	Sidewalk	Grade separation	Temporary	Rosecrans Ave	-	12-24	Metro 125	Close sidewalks during reconstruction
	64	1, 2, 3, 4	Road	Grade separation	Temporary	Downey Ave	-	12-24	LBT 22	Lane width reduction to accommodate construction of modified median and grade separation column; full road closures (typically intermittently during nighttime)
	65	1, 2, 3, 4	Sidewalk	Grade separation	Temporary	Downey Ave	-	12-24	LBT 22	Close sidewalks during reconstruction
	66	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Somerset Blvd	-	1-3	Metro 127	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	67	1, 2, 3, 4	Road, bicycle	Grade crossing	Temporary	Somerset Blvd	-	1-3	Metro 127	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	68	1, 2, 3, 4	Road, bicycle	Grade separation	Temporary	Woodruff Ave and Flower St	-	12-24	NTS 1; LBT 92	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	69	1, 2, 3, 4	Sidewalk	Grade separation	Temporary	Woodruff Ave and Flower St	-	12-24	NTS 1; LBT 92	Close sidewalks during reconstruction
City of Bellflower	70	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Lakewood Blvd	-	1-3	Metro 266	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	71	1, 2, 3, 4	Road, bicycle	Grade crossing	Temporary	Lakewood Blvd	-	1-3	Metro 266	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	72	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Clark Ave	-	1-3	NTS 1	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	73	1, 2, 3, 4	Road, bicycle	Grade crossing	Temporary	Clark Ave	-	1-3	NTS 1	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	74	1, 2, 3, 4	Road, bicycle	Grade crossing	Permanent	Clark Ave	-	-	NTS 1	Lane width reduction
	75	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Alondra Blvd	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	76	1, 2, 3, 4	Road, bicycle	Grade crossing	Temporary	Alondra Blvd	-	1-3	Metro 127, 128	Temporary lane closures and relocations during grade crossing and median construction; full closures (typically intermittently during nighttime)
	77	1, 2, 3, 4	Road, bicycle	Grade crossing	Permanent	Alondra Blvd	-	-	Metro 127, 128	Lane width reduction
	78	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Bellflower Blvd	-	1-3	LBT 91, 93	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	79	1, 2, 3, 4	Road, bicycle	Grade crossing	Temporary	Bellflower Blvd	-	1-3	LBT 91, 93	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	80	1, 2, 3, 4	Road, bicycle	Grade crossing	Permanent	Bellflower Blvd	-	-	LBT 91, 93	Lane width reduction

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
City of Cerritos	81	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Artesia Blvd	-	1-3	Metro 130; COW 1B, 1C	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	82	1, 2, 3, 4	Road	Grade crossing	Temporary	Artesia Blvd	-	1-3	Metro 130; COW 1B, 1C	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	83	1, 2, 3, 4	Road	Private driveway	Permanent	Extra Space Storage	San Gabriel River and Artesia Blvd	-	-	Close private driveway
	84	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Studebaker Rd	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	85	1, 2, 3, 4	Road	Grade crossing	Temporary	Studebaker Rd	-	1-3	Metro 130; COW 1B, 1C; LBT 172, 173; NTS 2	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
	86	1, 2, 3, 4	Road	Grade crossing	Permanent	South St	-	-	COW 1B, 1C; LBT 173; OCTA 30	Lane width reduction
City of Cerritos/ Artesia	87	1, 2, 3, 4	Road	Grade separation	Temporary	Gridley Rd and 183rd St	-	12-24	Metro 62; COW 1B, 1C; LBT 172, 173; NTS 2; OCTA 30	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	88	1, 2, 3, 4	Sidewalk	Grade separation	Temporary	Gridley Rd and 183rd St	-	12-24	Metro 62; COW 1B, 1C; LBT 172, 173; NTS 2; OCTA 30	Close sidewalks during reconstruction
	89	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	Pioneer Blvd	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	90	1, 2, 3, 4	Road	Grade crossing	Temporary	Pioneer Blvd	-	1-3	-	Temporary lane closures and relocations during grade-crossing and median construction; full closures (typically intermittently during nighttime)
	91	1, 2, 3, 4	Road	Grade crossing	Permanent	Pioneer Blvd	-	-	-	Lane width reduction

City	No.	Build Alternative Affected	Closure Element	Project Element/Area	Closure Type	Street	Cross Street	Approximate Closure Duration (months)	Affected Transit Routes	Closure Details
City of Artesia	92	1, 2, 3, 4	Road	Grade crossing	Temporary	186th St	-	1-3	-	Temporary lane closures and relocations during grade-crossing construction; full closures (typically intermittently during nighttime)
	93	1, 2, 3, 4	Sidewalk	Grade crossing	Temporary	186th St	-	1-3	-	Close sidewalks during reconstruction and integration of new grade-crossing equipment
	94	1, 2, 3, 4	Road	Grade crossing	Permanent	187th St	Corby Ave (West) to Corby Ave (East)	N/A	-	-
	95	1, 2, 3, 4	Sidewalk	Grade crossing	Permanent	187th St	Corby Ave (West) to Corby Ave (East)	N/A	-	-
	96	1, 2, 3, 4	Road	Parking structure	Permanent	188th St	Corby Ave (West) to Pioneer Blvd	N/A	-	-

Source: Metro 2021s
Notes: COW = Cerritos on Wheels; DASH = Downtown Area Short Hop; LBT = Long Beach Transit; Metro = Los Angeles County Metropolitan Transportation Authority; N/A = not applicable; NTS = Norwalk Transit System; OCTA = Orange County Transportation Authority; ROW = right-of-way

3.7.2 Construction Methodology

Refer to Section 3.2 for a discussion of the approach to assessing impacts to the transportation system. The evaluation considered the locations, number of lanes, and the duration of closures for traffic and parking. The methodology applied to the CEQA evaluation is described in Section 3.2.6. To satisfy CEQA requirements, transportation impacts related to construction are analyzed in accordance with Appendix G of the *CEQA Guidelines*, identified in Section 3.7.4 of this chapter.

3.7.3 Construction Impacts

3.7.3.1 No Build Alternative

The construction activities associated with the other planned projects under the No Build Alternative would include temporary street closures/turning restrictions, temporary lane closures, and road detours. All planned projects would undergo the required environmental approval process, which would disclose adverse construction impacts to the public if any are identified and unable to be fully mitigated.

3.7.3.2 Alternative 1: Los Angeles Union Station to Pioneer Station

Railroad Freight Effects

Table 3.52 summarizes the miles of existing freight tracks where Alternative 1 would share the rail ROW with active freight operations. Figure 3-18 identifies areas of relocation and ownership of railroad ROW. After construction, freight operations would be accommodated by Alternative 1. Metro would coordinate with rail operators to maintain freight operations during construction activities for Alternative 1 to the extent feasible. The LRT tracks would be designed with sufficient space that would separate Alternative 1 from existing freight. The spacing between LRT tracks and freight tracks would follow the safety standards set by the governing jurisdiction as currently exists on the Metro A (Blue) Line along the Wilmington Branch, where it shares ROW with freight tracks, so that that the freight mainline, storage tracks, loading docks/zones, and siding tracks would not be disrupted.

Table 3.52. Freight Shared Right-of-Way for Build Alternatives

Rail ROW	Shared ROW by Build Alternatives (miles)			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wilmington Branch	1.8	1.8	0.5	—
La Habra Branch	2.3	2.3	2.3	—
San Pedro Subdivision	6.1	6.1	6.1	0.8
Metro-owned PEROW	1.2	1.2	1.2	1.2
Total	**11.4**	**11.4**	**10.1**	**2.0**

Source: Metro 2021g
Notes: PEROW = Pacific Electric Right-of-Way; ROW = right-of-way

Figure 3-18. Proposed Freight Relocation and Existing Rail Right-of-Way Ownership

Source: Metro 2021s

Where the rail ROW is limited, changes to the existing freight track alignment would be required to accommodate the Project. Table 3.53 summarizes the miles of existing freight tracks that would require relocation to accommodate Alternative 1. Specifically, freight track relocation would be required from Slauson Avenue and east along Randolph Street from Holmes Avenue to the San Pedro Subdivision ROW, along the San Pedro Subdivision ROW (Randolph to the PEROW), and along the PEROW from the San Pedro ROW to Somerset Boulevard in the City of Paramount.

Table 3.53. Length of Freight Relocation for Build Alternatives

Rail ROW	Freight Relocation by Build Alternatives (miles)			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wilmington Branch	0.1	0.1	0.1	—
La Habra Branch	2.0	2.0	2.0	—
San Pedro Subdivision	5.4	5.4	5.4	0.7
Metro-owned PEROW	0.6	0.6	0.6	0.6
Total	**8.1**	**8.1**	**8.1**	**1.3**

Source: Metro 2021g
Notes: PEROW = Pacific Electric Right-of-Way; ROW = right-of-way

As summarized in Section 3.7.1, the new freight, storage, and/or siding track(s) would be constructed first to minimize disruptions to freight operations. A temporary shoo-fly track would be constructed to allow for the construction of new freight tracks. The freight rail would be redirected to the temporary shoo-fly while new freight tracks are constructed. At the completion of the new freight infrastructure, existing freight operations would be transferred to the new freight track. The old freight track would be demolished to allow space for the construction of the new LRT tracks.

Traffic circulation disruptions around the construction activities for freight track relocation would be minimized by staging construction so as to keep existing train crossings open (when feasible), providing detours with minimal additional delay, or conducting closures during nonpeak travel times (when feasible). Construction activities requiring closure of an existing train crossing could include installation of embedded tracks or installation of the overhead catenary system. Parking areas adjacent to construction areas would be accommodated when feasible by employing the same construction strategies for vehicular circulation, including staging construction strategies to minimize impacts or establishing nonpeak parking restrictions when parking demand is the lowest.

Staging and laydown areas would be adjacent or away from the railroad freight tracks and would not affect freight operations. Haul routes that cross existing at-grade crossings would comply with all the warning device signage and signaling when a freight train crosses. Therefore, no impacts to railroad freight associated with the staging/laydown areas or haul routes would occur and no adverse effects would result.

Traffic Operations Effects

Construction activities would have temporary traffic effects associated with lane closures, reconfiguration of roads, detours, and traffic related to construction workers accessing and departing construction staging areas, as summarized in Table 3.51. Temporary street and lane closures, width reductions, and reductions in the number of lanes would occur. In general, the traffic operations effects of restrictions would result in increased delay for drivers where there are lane reductions or increased travel distances due to detours, which would result in additional delay and traffic circulation. Where there is reduced capacity or where detours would be required for some construction activities, some travelers may choose alternate routes around the area to avoid construction activity and traffic delays. Detours would be identified to preserve circulation around temporary street closures or where turning movements are restricted. The detour route would be assessed to provide sufficient capacity. These enhancements could include adjusting traffic signal timing or installing temporary traffic signals.

In the northern end, Alternative 1 would cross existing freeways at US-101 and I-10. At the US-101 crossing, the alignment crosses in a tunnel configuration underneath the freeway. Construction would not impact the existing freeway infrastructure.

Alternative 1 would cross over the I-10 freeway in an aerial configuration to avoid potential traffic impacts to 15th and 16th Streets. The alignment would pass over the I-10 freeway in an aerial viaduct structure and continue south, parallel to the existing Metro A (Blue) Line at Washington Boulevard. Construction would require temporary closure of the existing freeway. These closures would occur during off-peak travel hours to the extent feasible, including the overnight hours to minimize the disruption to the traveling public. Detour routes would be identified. However, because of the impacts of the temporary closures and the identified detours, adverse effects would occur.

In the southern end, Alternative 1 would cross existing freeways at I-710, I-105, SR-91, and I-605. At the SR-91 and I-605 freeway crossings, the existing bridge structures contain sufficient space to accommodate the LRT tracks. Construction would occur below the existing bridges and would not result in adverse effects on the existing freeway travel lanes.

At I-710, there is insufficient horizontal clearance for the new LRT tracks, and the opening through the embankment would need to be widened. Therefore, a jacked box structure underneath the freeway is proposed. Construction is not anticipated to impact peak freeway operations, although ground improvements from the surface of the freeway may be needed to maintain support. The I-710 freeway would require ground monitoring to measure potential settlement that may occur during the jacking and excavation operations. It is anticipated the freeway lanes would remain open during this process, although there may be temporary closures to install ground-monitoring instruments and/or ground support infrastructure in the median. These closures would occur during the off-peak travel hours to the extent feasible, including the overnight hours to minimize disruption to travelers. Detour routes would be identified. Based on the timing of temporary closures and the implementation of detour routes, adverse effects would still occur.

During all construction activities, freeway access (i.e., on-ramps and off-ramps) would be maintained by not implementing long-term ramp closures. Short-term ramp closures would occur during off-peak travel hours to the extent feasible to minimize disruption to motorists.

Detour routes would be identified accordingly. All construction activities near or on freeway facilities, including ramp closures, would be coordinated with Caltrans.

Minor impacts to traffic operations associated with the staging/laydown areas and haul routes would occur. Construction vehicles and trucks entering and exiting the staging/laydown areas would increase traffic on local streets. All construction trucks would use designated haul routes, as listed in Table 3.50, to access the regional freeway system. The construction-related traffic volumes would be minimal compared to overall background traffic volumes and would generally occur during off-peak periods when volumes and congestion are lower. In addition, the increased traffic associated with these activities would be temporary. The impacts would be further minimized with the implementation of Mitigation Measure TRA-20 (Transportation Management Plan), which is described in Section 3.7.3.8.

Transit Effects

Construction of Alternative 1 may require temporary rerouting of existing transit routes. Table 3.51 outlines the locations and anticipated duration where transit routes would be affected by construction activities. Transit vehicles would experience minor increases in travel time. However, coordination with transit service operators would help to maintain transit routes and schedules. A detour route around the work zone would be identified, as well as temporary relocation of transit stops outside the work zone. Transit stop access would be maintained while providing ADA-compliant access. Although the temporary construction impacts would remain, no adverse effects are anticipated.

There would be impacts to transit associated with the staging and laydown areas. Transit stops may need to be relocated if there is a conflict with traffic at the staging area or with the physical constraints of the site itself. These impacts would be temporary and fully addressed by modifications (minor relocations) to transit stops. There would be impacts on transit associated with the haul routes, and adverse effects would result.

Active Transportation Effects

Construction of Alternative 1 may require temporary closures of sidewalks, crosswalks, and bicycle facilities to protect the safety of pedestrians, bicyclists, and construction workers. Table 3.51 outlines the locations and anticipated duration where sidewalk and bicycle facilities would be affected by construction activity. As a result, pedestrian and bicycle access routes in the construction area would be temporarily disrupted during construction. Many sidewalks along local streets in the vicinity of and/or crossed by improvements in the Build Alternatives are ADA-compliant. Because local streets, sidewalks, and crosswalks would be closed temporarily during construction, there could be alternative ADA accessibility routes identified during those closures to maintain access.

There would be impacts to active transportation associated with the staging and laydown areas. There also may be localized conflicts between bicycle and pedestrian facilities at staging areas if local access requires modifications to sidewalks or bike lanes. These impacts would be temporary and fully mitigated by contractor requirements to provide alternate access. There would be impacts on active transportation associated with the haul routes.

Section 7.3.2.1 of the Safety and Security Impact Analysis Report (Appendix F) and Section 4.19.2.18 of the Construction Section outlines the impacts of temporary construction-related activities/conditions on pedestrian, bicycle, and motorist safety. The Build Alternatives would

include designation of detour routes and signage to address the potential for these temporary impacts. In addition, a construction mitigation program would be developed during final design and would be implemented during construction. This program would be used for communicating traffic control measures, schedules of activities, appropriate detours, and durations of operations to the public and stakeholders. Nevertheless, temporary construction impacts would remain, and adverse effects associated with the impacts described above are anticipated.

Parking Effects

Temporary parking losses would occur during construction. Most impacts would be associated with physical construction activities, including the temporary shifting of vehicle lanes onto existing on-street parking areas to maintain the number of lanes. Table 3.51 lists the locations where temporary road closures and shifting lanes are anticipated to occur.

Table 3.50 lists the potential staging and laydown area options that could affect parking. Off-street parking would be temporarily removed where needed by the Project, specifically at parking lot locations. On-street parking adjacent to the staging areas could be temporarily removed during construction. There would also be effects on parking associated with the haul routes. Available open space for use as temporary parking is currently not available, resulting in the inability to accommodate any displaced parking areas by the construction activities and thereby resulting in an adverse impact. Mitigation Measure TRA-23 (Loss of Parking [Construction]), described in Section 3.7.3.8, has been identified to minimize parking impacts. Adverse effects would be reduced with implementation of this measure; however, adverse effects would likely remain.

3.7.3.3 Alternative 2: 7th St/Metro Center to Pioneer Station

Railroad Freight Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 2. Table 3.52 summarizes the miles of existing freight tracks that Alternative 2 would share with active freight operations, and Table 3.53 summarizes the miles of existing freight tracks Alternative 2 would require for relocation and reconstruction.

Traffic Operations Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 2. Construction activities would have temporary traffic effects associated with lane closures, reconfiguration of roads, detours, and traffic related to construction workers accessing and departing construction staging areas, as summarized in Table 3.51. In addition, Alternative 2 tail tracks would partially cross I-110. Mitigation Measure TRA-20 (Transportation Management Plan) (Section 3.7.3.8) would apply during construction and would involve implementing similar minimization strategies as described for Alternative 1. With implementation of the TMP, temporary construction-related impacts would be minimized, but adverse effects would occur resulting from construction activities on the street and highway system.

Transit Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 2. Strategies for the temporary rerouting of existing transit routes as described for Alternative 1 would be implemented. Although the temporary construction impacts would remain, no adverse effects are anticipated.

Similar to Alternative 1, there would be impacts to transit associated with the staging and laydown areas. Transit stops may need to be relocated if there is a conflict with traffic at the staging area or with the physical constraints of the site itself. These impacts would be temporary and fully addressed by modifications (minor relocations) to transit stops. There would be impacts on transit associated with the haul routes, and adverse effects would result.

Active Transportation Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 2. Construction activity may require temporary closures of sidewalks, crosswalks, and bicycle facilities to protect the safety of pedestrians, bicyclists, and construction workers, as described for Alternative 1. This would result in temporary construction impacts, and adverse effects associated with the impacts described above are anticipated.

Parking Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 2. Similar temporary parking losses would occur during construction, as described for Alternative 1. Therefore, Mitigation Measure TRA-23 (Loss of Parking [Construction]) would be implemented. Adverse effects would be reduced with implementation of this measure; however, adverse effects would likely remain.

3.7.3.4 Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Railroad Freight Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 3. Table 3.52 summarizes the miles of existing freight tracks that Alternative 3 would share with active freight operations, and Table 3.53 summarizes the miles of existing freight tracks Alternative 3 would require for relocation and reconstruction.

Traffic Operations Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 3, except that the northern terminus for Alternative 3 would be located at the Metro Slauson/A Line Station. Therefore, Alternative 3 has fewer closures than Alternatives 1 and 2 as summarized in Table 3.51. In addition, freeway crossings at US-101 and I-10 would be eliminated for this alternative. Mitigation Measure TRA-20 (Transportation Management Plan) (described in Section 3.7.3.8) would apply during construction and would involve implementing similar minimization strategies as described for Alternatives 1 and 2. With the implementation of the TMP, temporary construction-related impacts would be minimized, but adverse effects would still occur resulting from construction activities on the street and highway system.

Transit Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 3. The strategies for temporary rerouting of existing transit routes as described for Alternative 1 would be implemented. Although temporary construction impacts would remain, no adverse effects are anticipated.

Similar to Alternatives 1 and 2, there would be impacts to transit associated with the staging and laydown areas. Transit stops may need to be relocated if there is a conflict with traffic at the staging area or with the physical constraints of the site itself. These impacts would be

temporary and fully addressed by modifications (minor relocations) to transit stops. There would be impacts on transit associated with the haul routes, and adverse effects would result.

Active Transportation Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 3. Construction activity may require temporary closures of sidewalks, crosswalks, and bicycle facilities to protect the safety of pedestrians, bicyclists, and construction workers, as described for Alternative 1. As a result, temporary construction impacts would remain, and adverse effects associated with the impacts described above are anticipated.

Parking Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 3. Similar temporary parking losses would occur during construction, as described for Alternative 1. Therefore, Mitigation Measure TRA-23 (Loss of Parking [Construction]) would be implemented. Adverse effects would be reduced with implementation of this measure; however, adverse effects would likely remain.

3.7.3.5 Alternative 4: I-105/C (Green) Line to Pioneer Station

Railroad Freight Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 4. Table 3.52 summarizes the miles of existing freight tracks that Alternative 4 would share with active freight operations, and Table 3.53 summarizes the miles of existing freight tracks that Alternative 4 would require for relocation and reconstruction.

Traffic Operations Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 4. However, Alternative 4's northern end begins at the I-105/C Line Station. Therefore, Alternative 4 has fewer closures than Alternatives 1, 2, and 3, as summarized in Table 3.51. In addition, there is no freeway crossing at US-101, I-10, and I-710 for this alternative. Mitigation Measure TRA-20 (Transportation Management Plan) (described in Section 3.7.3.8) would apply during construction and would involve implementing similar minimization strategies as described for Alternatives 1, 2, and 3. With implementation of the TMP, temporary construction-related impacts would be minimized, but adverse effects would occur resulting from construction activities on the street and highway system.

Transit Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 4. The strategies for temporary rerouting of existing transit routes as described for Alternative 1 would be implemented. Although temporary construction impacts would remain, no adverse effects are anticipated.

Similar to Alternatives 1, 2, and 3 there would be impacts to transit associated with the staging and laydown areas. Transit stops may need to be relocated if there is a conflict with traffic at the staging area or with the physical constraints of the site itself. These impacts would be temporary and fully addressed by modifications (minor relocations) to transit stops. There would be impacts on transit associated with the haul routes, and adverse effects would result.

Active Transportation Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 4. Construction activity may require temporary closures of sidewalks, crosswalks, and bicycle facilities to protect the safety of pedestrians, bicyclists, and construction workers, as described for Alternative 1. As a result, temporary construction impacts would remain, and adverse effects associated with the impacts described above are anticipated.

Parking Effects

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Alternative 4. Similar temporary parking losses would occur during construction, as described for Alternative 1. Therefore, Mitigation Measure TRA-23 (Loss of Parking [Construction]) would be implemented. Adverse effects would be reduced with implementation of this measure; however, adverse effects are likely to remain.

3.7.3.6 Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station

The analysis described for Alternative 1 in Section 3.7.3.2 is also applicable to Design Options 1 and 2. Design Option 2 would also add road and sidewalk closures on Alameda Street between 1st Street and Traction Avenue, as summarized in Table 3.51. The design options include similar project elements and impact minimization strategies as Alternative 1.

3.7.3.7 Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options

The impact analysis described for Alternative 1 in Section 3.7.3.2 also applies to the Paramount and Bellflower MSF site options, which include similar project elements and impact minimization strategies as Alternative 1.

3.7.3.8 Mitigation Measures

TRA-20: Transportation Management Plan(s) (TMP)

TMP(s) would be prepared to address construction impacts on transportation facilities as applicable under the jurisdiction of all involved cities and agencies.

The TMP(s) would address potential impacts from construction activities on vehicular, transit, pedestrian, and bicycle access and mobility, including, but not limited to, temporary lane/roadway, sidewalk, bicycle facility, and freeway ramp closures; detours; increases in traffic volumes (including regular traffic and construction traffic, construction equipment, materials delivery vehicles, waste/haul vehicles, and employee commutes); construction parking; and emergency services (e.g., fire, police, ambulances).

The development of the TMP would be coordinated with Metro, local jurisdictions (cities and the county), agencies, and other potentially affected parties (e.g., school bus and transit operators and police, fire, and emergency services providers). The TMP(s) would identify specific TMP strategies, the party/parties responsible for implementing those strategies, the agencies and parties the TMP strategies would be coordinated with, and implementation timing.

TMPs are a proven strategy for minimizing impacts during construction. Metro has successfully implemented TMPs on its sponsored projects to minimize short-term transportation impacts during construction. These plans have proved to be effective at reducing potential transportation impacts during construction. Metro proactively follows the strategies identified in its TMPs and makes adjustments during construction to best accommodate all vehicles and active transportation users.

Additionally, temporary construction-related impacts would be minimized, but adverse effects would occur resulting from construction activities on the street and highway system.

TRA-23: Loss of Parking (Construction)

Metro would coordinate with local jurisdictions to address the loss of public parking spaces during construction. This could include, but not be limited to, restriping the existing street to allow for diagonal parking, reducing the number of restricted parking areas, phasing construction activities in a way that minimizes parking disruption, and adjusting the time limits for on-street parking.

Implementation of TRA-23 would reduce parking impacts and also provide indirect mitigation for the loss of off-street parking by allowing additional on-street parking where appropriate and feasible. Adverse effects would be reduced with implementation of this measure; however, adverse effects would likely remain.

3.7.4 California Environmental Quality Act Determination

3.7.4.1 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle and pedestrian facilities?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts would occur under the No Project Alternative, and no mitigation measures would be required.

Alternative 1: Los Angeles Union Station to Pioneer Station

Construction activities would not conflict with plans, policies, or ordinances associated with the transportation system. All modes of transportation would be accommodated within the construction areas when feasible. When closures would be needed, alternate routes would be provided to maintain connectivity for all modes of transportation. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Alternative 2: 7th St/Metro Center to Pioneer Station

Alternative 2 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: The impact analysis described for Alternative 1 is also applicable to Design Options 1 and 2. The design options would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options: The impact analysis described for Alternative 1 is also applicable to the Paramount and Bellflower MSF site options. The MSF construction activities would be consistent with adopted policies, plans, and programs. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be implemented to further reduce impacts of construction activities.

Impacts Remaining after Mitigation: Less than significant.

3.7.4.2 Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts would occur, and no mitigation measures would be required.

Alternative 1: Los Angeles Union Station to Pioneer Station

Section 3.7.1 describes the construction activities anticipated for the Build Alternatives, and impacts are summarized in Section 3.7.3.2. Impacts during construction are identified for freight operations, traffic operations, transit, active transportation, and parking. VMT would be similar to the existing conditions within the Study Area. Construction activity would be localized to the work area and would not significantly change vehicle circulation in the Study Area as a whole. Therefore, no mitigation measures are required, and construction would have less-than-significant impacts.

Alternative 2: 7th St/Metro Center to Pioneer Station

Alternative 2 would have similar construction activities as described for Alternative 1. Therefore, no mitigation measures are required, and construction would have less-than-significant impacts.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have similar construction activities as described for Alternative 1. Therefore, no mitigation measures are required, and construction would have less-than-significant impacts.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have similar construction activities as described for Alternative 1. Therefore, construction would have less-than-significant impacts.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: The impact analysis described for Alternative 1 is also applicable to Design Options 1 and 2. The design options would have similar construction activities as described for Alternative 1. Therefore, no mitigation measures are required, and construction would have less-than-significant impacts.

Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options: The impact analysis described for Alternative 1 is also applicable to the Paramount and Bellflower MSF site options. The MSF site options would be part of the construction activities. Therefore, no mitigation measures are required, and construction would have less-than-significant impacts.

3.7.4.3 Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts would occur, and no mitigation measures would be required.

Alternative 1: Los Angeles Union Station to Pioneer Station

Construction activity associated with Alternative 1 would require, as needed, the temporary modification of the existing transportation facilities. These temporary modifications would follow standard construction practices for temporary vehicle, freight, pedestrian, and bicycle handling that would minimize hazards. These standards would also include preparation of a detailed transportation/traffic management plan. While application of these standards would not completely eliminate hazards, the resulting impacts would be less than significant.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Alternative 2: 7th St/Metro Center to Pioneer Station

Alternative 2 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have a shorter alignment than Alternatives 1 and 2 and would have fewer potential hazards impacts. South of 55th Street/Long Beach Avenue, Alternative 3 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities

Impacts Remaining after Mitigation: Less than significant.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have a shorter alignment than Alternatives 1, 2, and 3 and would have fewer potential hazards impacts. South of Main Street/San Pedro Subdivision, Alternative 4 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: The impact analysis described for Alternative 1 is also applicable to Design Options 1 and 2. The design options would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities.

Impacts Remaining after Mitigation: Less than significant.

Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options: The impact analysis described for Alternative 1 is also applicable to the Paramount and Bellflower MSF site options. The MSF site options would be part of the construction activities. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)) would be used to further reduce the hazards of construction activities.

Impacts Remaining after Mitigation: Less than significant.

3.7.4.4 Result in inadequate emergency access?

No Project Alternative

Project-related construction activities would not occur under the No Project Alternative. Therefore, no construction-related impacts would occur, and no mitigation measures would be required.

Alternative 1: Los Angeles Union Station to Pioneer Station

Construction activity would require, as needed, the temporary modification of the existing transportation facilities. Coordination with emergency responders would occur to maintain emergency access or to minimize delays in response times. However, the coordination would not completely eliminate interference with local jurisdictions' emergency response plans for emergency service providers.

As presented in Section 3.7.3.2, Mitigation Measure TRA-20 (Transportation Management Plan(s)) would require development of a TMP. As part of the TMP, all closures and detours would be coordinated with the affected emergency service providers to address access and response time requirements during construction and, once in operation, would reduce impacts to a less-than-significant level.

Section 5.2.5 of the Safety and Security Impact Analysis Report (Appendix F) and Section 4.18.3.2 of the Safety and Security Section describe the Emergency Preparedness Plan that would be integrated with local jurisdictional emergency response plans. The Emergency Preparedness Plan would be part of the Build Alternatives and would reduce impacts on emergency access by establishing the roles and responsibilities that would be carried out by emergency response agencies in the event of a fire, medical, or security emergency. Through this process and coordination with local jurisdictions, the construction and operation of the

Build Alternatives would avoid interference with emergency response plans, minimize scenarios where the emergency response services providers are overtaxed, and reduce the potential for significant delayed response times.

Mitigation Measures: Mitigation Measure TRA-20 (Transportation Management Plan(s)). Mitigation Measure COM-1 (Construction Outreach Plan), described in Section 4.19.11.2 of the Construction Section, would be implemented, which requires development of a Construction Outreach Plan in coordination with affected communities and businesses that would be implemented by Metro and its contractors during construction of the Project.

Impacts Remaining after Mitigation: Less than significant.

Alternative 2: 7th St/Metro Center to Pioneer Station

Alternative 2 would have similar construction activities as described for Alternative 1. Therefore, construction would have less-than-significant impacts.

Mitigation Measures: Mitigation Measures TRA-20 (Transportation Management Plan(s)) and COM-1 (Construction Outreach Plan)

Impacts Remaining after Mitigation: Less than significant.

Alternative 3: Slauson/A (Blue) Line to Pioneer Station

Alternative 3 would have similar construction activities as described for Alternative 1. Therefore, construction would have less-than-significant impacts.

Mitigation Measures: Mitigation Measures TRA-20 (Transportation Management Plan(s)) and COM-1 (Construction Outreach Plan)

Impacts Remaining after Mitigation: Less than significant.

Alternative 4: I-105/C (Green) Line to Pioneer Station

Alternative 4 would have similar construction activities as described for Alternative 1. Therefore, construction would have less-than-significant impacts.

Mitigation Measures: Mitigation Measures TRA-20 (Transportation Management Plan(s)) and COM-1 (Construction Outreach Plan)

Impacts Remaining after Mitigation: Less than significant.

Design Options—Alternative 1

Design Option 1: LAUS at MWD and Design Option 2: Add Little Tokyo Station: Design Options 1 and 2 would have similar construction activities as described for Alternative 1. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measures TRA-20 (Transportation Management Plan(s)) and COM-1 (Construction Outreach Plan)

Impacts Remaining after Mitigation: Less than significant.

Maintenance and Storage Facility

Paramount and Bellflower MSF Site Options: The impact analysis described for Alternative 1 is also applicable to the Paramount and Bellflower MSF site options. Therefore, less-than-significant impacts from construction activities would occur.

Mitigation Measures: Mitigation Measures TRA-20 (Transportation Management Plan(s)) and COM-1 (Construction Outreach Plan)

Impacts Remaining after Mitigation: Less than significant.