

ENVIRONMENTAL JUSTICE TECHNICAL MEMORANDUM

Brightline West Cajon Pass High-Speed Rail Project

October 2022

Prepared for
Federal Railroad Administration

Prepared by
Circlepoint

Contents

Abbreviations and Acronyms	iv
1. Introduction	1
2. Project Description	2
2.1. Background.....	2
2.2. Project Area	2
2.3. Purpose of and Need for the Project	2
2.3.1. Purpose	2
2.3.2. Need.....	3
2.4. Project Elements	9
2.4.1. Build Alternative	9
3. Methodology.....	13
3.1. Relevant Regulations, Plans, and Policies	13
3.2. Study Area	13
3.3. Methods Used	15
3.3.1. Definition of Environmental Justice Populations.....	15
3.3.2. Methodology for Identifying Disproportionately High and Adverse Impacts.....	15
4. Affected Environment.....	16
5. Environmental Consequences and Mitigation.....	18
5.1. Build Alternative.....	19
5.1.1. Construction of the Build Alternatives	19
5.1.2. Operation of the Build Alternative	24
5.1.3. Cumulative Impacts	29
5.2. No Build Alternative	29
5.2.1. Construction of the Build Alternative	29
5.2.2. Operation of the Build Alternative	29
5.3. Avoidance, Minimization, and/or Mitigation Measures	30
6. References	31

Appendices

Appendix A

Appendix B

Figures

Figure 2-1. Project Area and Vicinity	4
Figure 3-1. Map of Census Tracts in the Project Study Area	14

Tables

Table 5-1. Reference Community Demographics	17
Table 5-2. Demographics by Census Tract	17

Abbreviations and Acronyms

ACS	American Community Survey
ADT	average daily traffic
ARRIVE	Advanced Regional Rail Integrated Vision – East
BMP	best management practice
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CEQ	Council on Environmental Quality
CGP	Construction General Permit
CHP	California Highway Patrol
EIR	Final Environmental Impact Report
EIS	Environmental Impact Statement
EJ	Environmental Justice
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
GHG	greenhouse gas
HMMP	Hazardous Materials and Management Plan
HOV	high-occupancy vehicle
HSR	high-speed rail
I-	Interstate
LOS	level of service
MOU	memorandum of understanding
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
Project	Cajon Pass High-Speed Rail Project
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SBCTA	San Bernardino County Transportation Authority
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCORE	Southern California Optimized Rail Expansion
SPCC	Spill Prevention, Control, and Countermeasure

SR	State Route
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TCA	temporary construction area
TESC	Temporary Erosion and Sediment Control
TWPC	Temporary Water Pollution Control
US-395	US Highway 395
USDOT	US Department of Transportation
VHT	vehicle hours traveled
VMT	vehicle miles traveled

1. Introduction

Brightline West proposes to construct and operate the Project, a 49-mile train system capable of speeds up to 180 miles per hour (mph) between Victor Valley, California, and Rancho Cucamonga, California. The Project includes two railway stations—one in Hesperia, and one in Rancho Cucamonga. The station in Victor Valley would be constructed as part of a separate project that was evaluated in the DesertXpress Final Environmental Impact Statement (Final EIS; FRA 2011).

The Project would be powered by overhead electric catenary within the Interstate 15 (I-15) right-of-way for 48 miles and on existing transportation corridors for the last mile into the proposed Rancho Cucamonga station. The Project would require construction of one new traction power substation in the Hesperia area. The maintenance facility that was evaluated with the Brightline West Victor Valley High-Speed Rail Passenger Project would provide the primary maintenance functions, although layover tracks are anticipated at the Rancho Cucamonga station, which could include light maintenance capability, such as interior cleaning and daily inspection.

Trains are expected to operate daily on 45-minute headways between Victor Valley and Rancho Cucamonga. The trip between Victor Valley and Rancho Cucamonga would be approximately 35 minutes. Service would be coordinated with existing and planned Metrolink service at the Rancho Cucamonga station to provide a convenient connection between the high-speed rail and commuter rail systems.

The Project would be constructed and operated under a lease agreement with the California Department of Transportation (Caltrans) for the use of the I-15 right-of-way and the station at Hesperia. Brightline West would secure additional agreements for Right-of-Way Use, Design & Construction Oversight and Reimbursement, and Operations & Maintenance, as necessary.

2. Project Description

2.1. Background

Early Project coordination for High-Speed Rail (HSR) service from Victor Valley to Rancho Cucamonga began in 2020, with Brightline West meeting with the San Bernardino County Transportation Authority (SBCTA) to examine a connection between Victor Valley and Rancho Cucamonga. This meeting resulted in a memorandum of understanding (MOU) that was fully executed in July 2020 between Brightline West and SBCTA to study the potential of building HSR within the I-15 right-of-way between Victor Valley and Rancho Cucamonga. A separate MOU was executed in September 2020 between Brightline West and the Southern California Regional Rail Authority, which operates Metrolink, for connection to the existing Metrolink station in Rancho Cucamonga. Additionally, the California State Transportation Agency (CalSTA), Caltrans, the California High-Speed Rail Authority, and Brightline West have executed an MOU regarding the Project. The MOU reflects both the regional and statewide interest and value in the Project, including interconnectivity opportunities, and outlines how the parties will work together to advance their shared interest in the success of the Project.

2.2. Project Area

The Project would construct and operate a 49-mile train system capable of speeds up to 180 mph between Victor Valley, California and Rancho Cucamonga, California. The Project includes two railway stations: one in Hesperia, and one in Rancho Cucamonga. The proposed rail alignment would be located predominantly in the median or immediately alongside the I-15 freeway between Victor Valley and Rancho Cucamonga, within the Caltrans I-15 right-of-way. The Project area is depicted in Figure 2-2-1.

2.3. Purpose of and Need for the Project

2.3.1. Purpose

The purpose of the Project is to provide reliable and safe passenger rail transportation between the Los Angeles metropolitan region and the High Desert of San Bernardino County. The Project would provide a convenient, efficient, and environmentally sustainable alternative to automobile travel on the highly congested I-15 freeway. The Project would add capacity to the overall transportation system by introducing a new HSR service from Victor Valley to Rancho Cucamonga. The Project would reduce travel time, improve reliability, and increase the mobility options for travel between metropolitan regions. Travel time from Victor Valley to Rancho Cucamonga, as a result of the Project, would be reduced by half compared to driving during normal conditions and by substantially more during congestion peak periods. The Project would reduce automobile vehicle miles traveled (VMT), resulting in a corresponding reduction in greenhouse gas emissions (GHG) and air quality emissions.

2.3.1.1. Multi-Modal Use of the I-15 Corridor

Operation of the Project would significantly increase the capacity of I-15 as a multi-modal corridor in Southern California. This increase in capacity would benefit freeway operations by providing an alternative to automobile travel that would reduce travel time. This shift of people

from automobile to train travel along the I-15 corridor would reduce the need for programmed and/or planned freeway improvement and widening projects.

2.3.2. Need

The Project is needed to address transportation capacity deficiencies, major points of congestion, limited travel mode choices, safety deficiencies, and reduce GHG emissions.

Travel demand analysis completed on behalf of the Project in 2020 forecasts 49.1 million one-way trips between Southern California and Las Vegas in 2025, with approximately 85 percent of travelers making the trip by automobile. Most of these trips use the Cajon Pass segment of the I-15, which is capacity-constrained. Further, the freeway system leading into the I-15 from points west, east, and south, including I-10, State Route 210 (SR-210), I-215 and SR-60 have similar delays and capacity constraints. The Project would address this demand by providing a transportation alternative to vehicle travel, and it would allow access to the Brightline West service from the Greater Los Angeles and the Riverside-San Bernardino-Ontario Metropolitan areas, as well as points beyond, with a connection to the Metrolink system in Rancho Cucamonga.

The Project would also support Federal and state policies focused on climate change and the need to reduce VMT and associated GHG emissions.

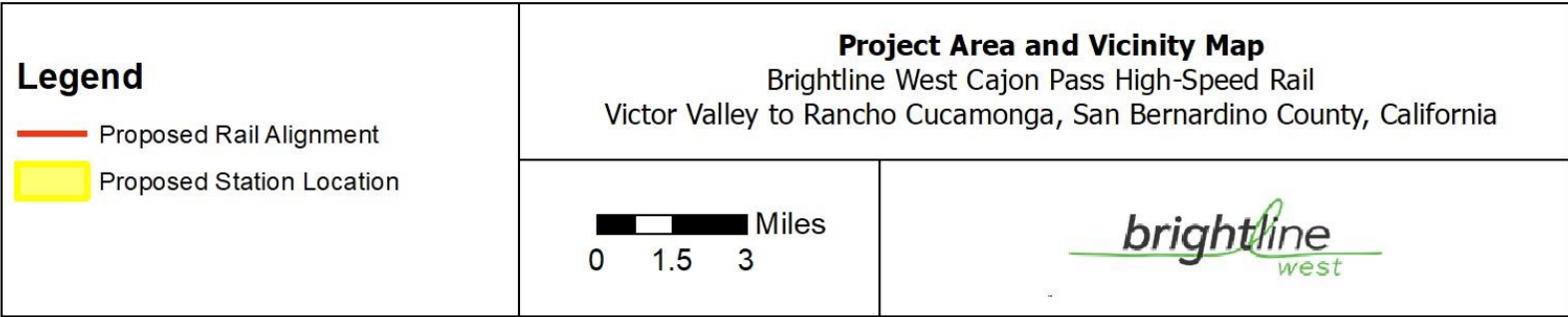
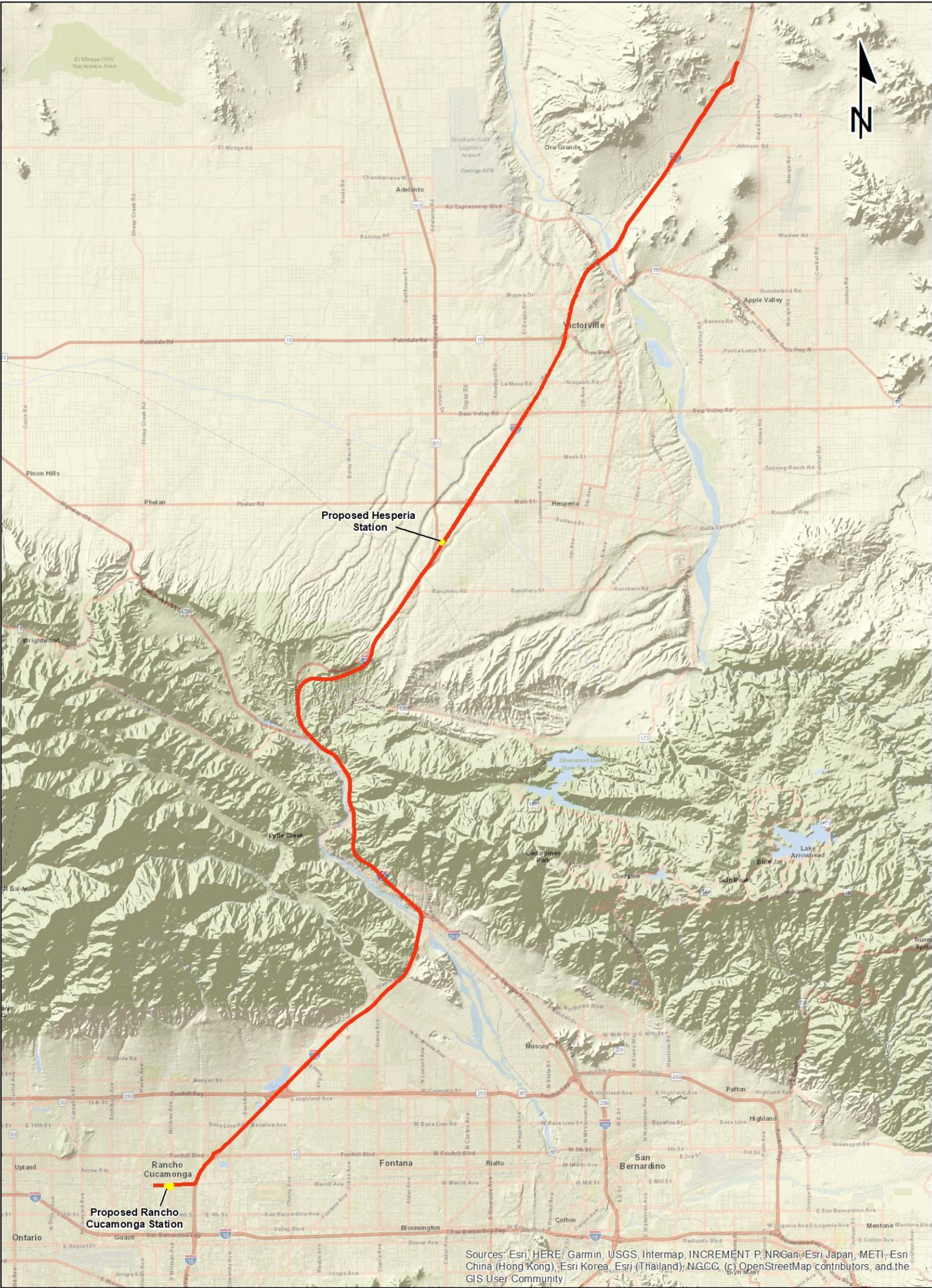


Figure 2-2-1. Project Area and Vicinity

2.3.2.1. *Capacity Constraints*

I-15 through the Cajon Pass is one of the most congested segments of I-15, with no alternative routes that provide comparable direct road travel capability because of the mountainous topography. Through the Cajon Pass, I-15 supports daily workforce commuters, recreational travel, and regional and interstate freight and goods movement. According to the traffic study prepared for the I-15 Corridor Project Initial Study/Environmental Assessment (Caltrans and SBCTA 2018), unreliability in travel time along segments of I-15 and surrounding roadways is caused by roadway capacity constraints, frequent accidents, and various factors that cause unanticipated congestion. Travelers using the Project would no longer need to drive through the most congested parts of the corridor in the Cajon Pass for interstate or commuter trips, thereby avoiding idling and inefficient stop-and-go traffic conditions.

By 2045, travel speeds are expected to decrease on all but one segment of I-15 between the San Bernardino Valley and Apple Valley in the AM peak period, and travel speeds on most segments would also decrease—some by more than 10 mph—in the PM peak period (SCAG 2020). Based on the Project Report for the I-15 Corridor Study (addition of express lanes), traffic volumes on I-15 between I-10 and SR-210 are expected to increase in the range of 31 to 38 percent from 2014 to 2045. The Project Report states the existing level of service (LOS) is acceptable in most locations but that there are bottlenecks in each direction of travel that degrade traffic operation, especially between Baseline Road and SR-210. Because the express lane project is increasing capacity by adding express lanes, the traffic volumes are projected to increase by an additional 27 percent. The Project Report further mentions that, although the express lane project would improve conditions in the general-purpose lanes in many segments, it would cause the segment between the I-10 and Fourth Street to worsen in the PM peak hour (both directions). In the AM peak hour, the segment between Arrow Route and Fourth Street would worsen in the southbound direction. The segment between Baseline Road and SR-210 would continue to operate at over capacity conditions in all scenarios.

As documented above, given the attractiveness of the origins and destinations, the transportation capacity constraints on I-15 as described in current and predicted average daily traffic (ADT) and LOS limit reasonable highway access between Rancho Cucamonga, Hesperia, and Victor Valley.

I-10 is the primary commuter corridor from San Bernardino County and the San Gabriel Valley to Los Angeles. Based on the Final Environmental Impact Report (FEIR) by Caltrans in 2012 for I-10 high-occupancy vehicle (HOV) lanes from Puente Avenue to SR -57/SR -71, the westbound direction of I-10 experiences recurrent congestion in the AM peak hour and eastbound direction experiences recurrent congestion in the PM peak hour. Additionally, most of I-10 operates at capacity in both the AM and PM peak hour with spillbacks at the SR- 57/SR- 71 interchange and I-605 interchange. In addition, due to short spacing between interchanges, there is insufficient weaving distance leading to much lower speeds in the right lanes of the freeway. The FEIR also indicated that even with the HOV lanes, the forecast volumes (year 2035) are generally going to result in continued recurrent congestion (Caltrans 2012).

Due to heavy congestion, both SBCTA and LA Los Angeles Metro are currently converting HOV lanes on the I-10, on which operations are degraded according to Federal standards to High-Occupancy Toll/Express Lanes (priced lanes). In addition, LA Los Angeles Metro and Metrolink are also coordinating to extend service on the Gold Line to Azusa and eventually to Montclair in San Bernardino County. The Brightline service would provide an option that addresses longer distance trips that would otherwise burden the peak travel periods on I-10 and other roadways.

2.3.2.2. *Travel Demand*

In addition to providing an alternative to congested travel conditions on I-15, the proposed Project is anticipated to reduce VMT, vehicle hours traveled (VHT), CAPs, and GHG emissions by offering residents of San Bernardino and Los Angeles, Riverside, Orange, and San Diego Counties a reliable and environmentally friendly alternative to driving as well as shortened driving distances to access the Brightline West high-speed rail system to Las Vegas.

While the Victor Valley station site would be located at the convergence of all the highways *en route* to Las Vegas for Southern California travelers, the Rancho Cucamonga station would be closer to major population centers in Southern California. Compared to the Victor Valley station, the proposed HSR station in Rancho Cucamonga, located in Greater Los Angeles, would provide more direct access to the densely populated centers in Southern California for both drivers and Metrolink rider; 87 percent of the potential market for trips between Las Vegas and Southern California (equivalent to 42.7 million of the one-way, in-scope trips in 2025) live within 75 miles of the location of the proposed Rancho Cucamonga station. The proposed station in Rancho Cucamonga, with an express rail connection to Los Angeles, would further meet the forecasted demand of the 49.1 million one way trips between Las Vegas and Southern California estimated in 2025. Similarly, the proposed Hesperia station would be at the convergence of US Highway 395 (US-395) and I-15, so it would serve commuters to Greater Los Angeles from the major corridors in the Victor Valley.

The Project would also support Southern California Association of Governments' (SCAG) Connect SoCal Passenger Rail Technical Report, which identifies closing connectivity gaps as a major strategy to increase mobility and improve sustainability. The Project would facilitate transit connections and would allow residents of the Greater Los Angeles and the Riverside-San Bernardino-Ontario Metropolitan areas to travel exclusively by mass transit and passenger rail to and from the High Desert of San Bernardino. Southern California residents could take the Los Angeles Metro rail, regional bus systems, Amtrak, or Metrolink to Los Angeles Union Station to connect via the Metrolink San Bernardino Line to the Rancho Cucamonga station. Residents could also take the planned West Valley Connector Bus Rapid Transit service that will operate between the Pomona station on the Metrolink Riverside Line in eastern Los Angeles County and the Rancho Cucamonga station.

Additionally, SBCTA and SCAG's 2015 Advanced Regional Rail Integrated Vision – East (ARRIVE Corridor) plan proposes strategies for transitioning the Metrolink San Bernardino Line, which would serve the Rancho Cucamonga station, from a traditional commuter rail line to one that promotes transit-oriented development. Improvements to Metrolink, its transit connections, and additional development of the station areas with transit-supportive uses at greater

densities and intensities will encourage the formation of areas that are walkable and that provide mobility options in the region. The Project would further the goals of the ARRIVE Corridor plan by increasing the activity centers that can be accessed by Southern California's rail network. The Metrolink Southern California Optimized Rail Expansion (SCORE) program also includes capital improvements within the Metrolink corridor that would improve service to Rancho Cucamonga, including the Marengo Siding Extension, El Monte Siding Extension/Tyler and Cogswell Grade Crossing Improvements, Rancho Siding Extension, and Lone Hill to White Double Track.

SCAG forecasts, in its 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), that the population of San Bernardino County will grow to 2,815,000 by 2045, a 29 percent increase from the US Census Bureau's 2018 population estimate of 2,180,085, and that the number of households will grow to 875,000, a 39 percent increase over the 2018 household estimate of 630,633 (US Census Bureau 2020). Additionally, the 2020-2045 RTP/SCS forecasts employment in San Bernardino County will increase to 1,064,000 by 2045, a 72 percent increase from the US Census Bureau's estimate of 617,828 in 2018.

The anticipated substantial increases in population, housing, and employment in San Bernardino County will result in greater demand for transportation facilities and services, including increased travel demand that will result in congestion on roadways if capacity does not keep up with the demand. The Hesperia station in the High Desert would provide a convenient connection between High Desert communities and the more urbanized San Bernardino Valley and Metropolitan Los Angeles. The High Desert provides lower cost housing options for Southern California residents, while the Rancho Cucamonga/Ontario area around Ontario International Airport has become a significant employment center.

In 2010, the San Bernardino Associated Governments (the predecessor agency to SBCTA) completed the Victor Valley Long Distance Commuter Needs Assessment, which identified a phased set of commuter improvement projects. Those projects ranged from expanded park and ride facilities to an express bus service linking the Victor Valley area of the High Desert to the Rancho Cucamonga Metrolink station. In 2017, SCAG and SBCTA amended the Transportation Improvement Program to include an expansion of the Hesperia Park & Ride area at Joshua Street from 188 spaces to nearly 400 spaces. The Joshua Street Park & Ride is next to the Project's proposed station in Hesperia. Such commuter-focused planned improvements highlight the need for travel options that reduce the number of single occupancy automobiles on I-15 in San Bernardino County, particularly through the Cajon Pass.

SCAG's Connect SoCal Goods Movement Technical Report identifies I-15 as part of the US Department of Transportation's (USDOT) Primary Highway Freight Network and among the network segments that carry the highest volumes of truck traffic in the region. It also identifies the entirety of the Cajon Pass as a truck bottleneck, with over 15,000 annual vehicle hours of delay. The Federal Highway Administration (FHWA) has previously invested \$200 million in improvements to the I-15/I-215 interchange at the southern end of the Cajon Pass because of the corridor's significance as a major truck and trade route.

FHWA's Southern California Regional Freight Study (USDOT 2020) identifies I-15 as a major interstate highway corridor that provides access to the interior of the United States for goods

arriving at the ports of the Los Angeles region and ranks it among the highest truck volume corridors in the western United States. Caltrans' 2015 Interregional Transportation Strategic Plan identifies I-15 as a high priority corridor, among six nationally identified "Corridors of the Future," and a "vital link between Mexico, Southern California, and locations to the north and east of the region." I-15 also connects Southern California and the southwestern United States to the San Joaquin Valley's agricultural goods via SR-58. By providing passenger rail capacity in the corridor, the Project would help maintain freeway capacity for truck freight use by removing passenger vehicles from the roadway network.

2.3.2.3. *Safety*

Alternatives to automobile travel would provide improved safety conditions on the I-15 corridor with diversion of vehicle trips to HSR. On a national level, comparing miles traveled via commercial aircraft, train, and automobiles on highways, auto travel on highways has by far the highest rate of passenger fatalities per mile traveled. In 2019, the average rate of passenger fatalities from highway travel was more than 75 times the comparable rate for travel by air and 34 times the comparable rate by rail. For 2016, the Bureau of Transportation Statistics' National Transportation Statistics (USDOT 2018) reported a rate of passenger fatalities per 100 million passenger miles traveled by highway nearly 10 times greater than the rates for travel by air or rail. HSR is one of the safest forms of travel.

The California Office of Traffic Safety ranks San Bernardino County 16th-worst out of 58 counties for total fatal and injury crashes in 2018 (the most recent year of data available). According to the University of California, Berkeley, and SafeTREC's Transportation Injury Mapping System, there were 819 collisions with one or more deaths or injuries along I-15 in San Bernardino County in 2019. Of these, nearly one quarter (199) occurred in the 12 miles of the Cajon Pass, although the Cajon Pass accounts for only 6.5 percent of the length of I-15 in the county.

A study by the I-15 Mobility Alliance found that the segment of I-15 from I-215 in San Bernardino to I-40 in Barstow had a fatality rate 0.009 per million VMT, well above the alliance's performance goal of 0.003 fatalities per million. Segments immediately north of that segment were even more deadly (I-15 Mobility Alliance 2017). By connecting the Victor Valley to Rancho Cucamonga, the Project would allow more travelers to stay off the most dangerous segments of I-15.

2.4. Project Elements

2.4.1. Build Alternative

The Build Alternative (i.e., the Project) consists of a proposed HSR passenger railway with associated infrastructure, including two proposed passenger stations. Nearly all of the Project would be built within the I-15 right-of-way. Near the proposed southern terminus station in Rancho Cucamonga, approximately 1 mile of the rail alignment would be in city street, railroad, or utility rights-of-way.

The proposed rail alignment would be located predominantly in the median or immediately alongside the I-15 freeway between Victor Valley and Rancho Cucamonga. The rail alignment would be predominately at grade (the same elevation as the existing freeway), with select segments of the alignment on aerial structures or in a trench to allow for grade separations and to provide a safe incline for train operation. The rail alignment would be predominantly single-track, with limited double-track segments in Victor Valley (2.6 miles), Hesperia (5.5 miles), and Rancho Cucamonga (2.1 miles). This would allow for 45-minute headways in the opening year between Victor Valley and Rancho Cucamonga and 22.5-minute headways by year 11. These headways, along with the ability to couple trains (double passenger capacity), would address projected ridership needs for the foreseeable future.

Temporary construction areas, or TCAs, are properties that would be temporarily utilized for construction staging and storage. The Project would require TCAs along the alignment between Victor Valley and Rancho Cucamonga.

For analytical purposes, the Build Alternative is described in three sections. Sections were developed to reflect similarly developed areas with similar environmental sensitivity. The sections include:

- **Section 1:** High Desert – from the Victor Valley station, continuing south along I-15, to the I-15/Oak Hill Road interchange in Hesperia
- **Section 2:** Cajon Pass – from the I-15/Oak Hill Road interchange, continuing south along I-15, through the Cajon Pass, to the I-15/Kenwood Avenue interchange
- **Section 3:** Greater Los Angeles – from the I-15/Kenwood Avenue interchange in San Bernardino, continuing south along I-15, through the existing Metrolink station in Rancho Cucamonga to Haven Avenue

2.4.1.1. Section 1 – High Desert

The proposed rail alignment would leave the Victor Valley station in Apple Valley (proposed by a separate project), would cross to the west side of I-15 when leaving the station, then would continue along the western side of I-15 at grade. A segment would then be elevated to cross over an existing short-line freight railway. The rail alignment throughout Section 1 is predominantly single track; however, the rail alignment would be double-track north of Stoddard Wells Road to the northern terminus of the alignment to accommodate track siding locations. North of the Stoddard Wells Road north interchange, one or more towers of the

existing Southern California Edison (SCE) Boulder Dam – San Bernardino Transmission Line would be relocated to accommodate the rail alignment. Just north of the Mojave River, the existing southbound off-ramp to Stoddard Wells Road would be realigned and reconstructed to cross over the proposed at-grade rail alignment. The rail alignment would then transition to an elevated configuration to cross over the existing frontage road on the west side of the I-15 freeway, which would be realigned. The rail alignment would cross the Mojave River on a new bridge and then remain elevated to cross the southbound ramps of the D Street/E Street interchange. The alignment would then cross above the southbound lanes of the I-15 freeway and transition to an at-grade configuration in the I-15 median.

The alignment would continue at grade in the I-15 median for the remainder of Segment 1. Beginning at the Mojave Drive interchange, portions of the I-15 freeway would be shifted outward to accommodate the train, requiring minor widening or relocation of off-ramps and frontage roads, but interchanges would retain their existing configurations. This portion of the alignment would interface with the following interchanges: Roy Rogers Drive/Hook Road, Palmdale Road, Nisqualli Road, Bear Valley Road, Main Street, Phelan Road, Joshua Street, US-395, Ranchero Road, and Oak Hill Road.

A new substation would be constructed to support the Project along I-15, between Mesa Street and Mojave Street. The area is currently largely undeveloped, other than existing overhead power lines and utility access.

Hesperia Station

Section 1 includes a new passenger station in Hesperia, at the I-15/Joshua Street interchange. This station would serve daily travelers between the High Desert of San Bernardino County and the Los Angeles Basin. Station parking would be accessed via Outpost Road and would be located between I-15 and US-395. To accommodate the rail alignment, the existing US-395 northbound connector and the existing Joshua Street bridge would be replaced. The Joshua Street bridge would be reconstructed at a higher elevation, requiring raising of the I-15 ramps and Mariposa Road. The passenger platform would be located within the I-15 median, with access via a pedestrian bridge crossing over the southbound lanes of I-15 from the proposed parking area and directly from the reconstructed Joshua Street bridge. This in-line station would be located at the southern end of the double-track segment in Hesperia. Parking for the Hesperia station is proposed to the southwest of the station platform, between US-395 and I-15. The Project design includes adequate parking areas to accommodate parking demand in the opening year.

Design Elements

Segment 1 of the Project includes the following design elements.

- **Bridges/Viaducts:** Bridge over I-15 leaving Victor Valley station, extended viaduct approximately 2.5 miles in length at Mojave River crossing including D Street/E Street interchange and entry into the I-15 freeway median south of Mojave River
- **Reconstructions/Interchange Modifications:** Stoddard Wells Road southbound off-ramp, Roy Rogers Drive/Hook Road, Palmdale Road, Nisqualli Road, Bear Valley Road, Main

Street, Phelan Road, US-395, Ranchero Road, Oak Hill Road, Joshua Street Bridge replacement and interchange modifications, and I-15 ramps at Mariposa Road

- Station Area: Hesperia station platform, pedestrian bridge, station access/infrastructure, surface parking lot accommodating approximately 360 vehicles, bus pick up/drop off areas, Kiss and Ride

2.4.1.2. Section 2 – Cajon Pass

Beginning at the I-15/Oak Hill Road interchange and traveling south, the alignment would run on the west side of the I-15 northbound lanes at grade and within the existing I-15 right-of-way. In this area, the I-15 runs through the San Bernardino National Forest for approximately 12 miles. The rail alignment throughout Section 2 would be entirely single-track. The Project would require relocation of California Highway Patrol (CHP) emergency crossovers where the new guideway would block existing crossovers. New crossover locations would be placed to take advantage of existing CHP access between the separated I-15 alignments wherever possible. The alignment would remain at grade throughout Segment 2.

Where I-15 northbound and southbound lanes reconnect at the foot of the Cajon Pass, the rail alignment would be within the I-15 median. This would require widening portions of the I-15 freeway and minor realignment of ramps at the I-15/SR-138 interchange.

Design Elements

Segment 2 of the Project includes the following design elements.

- Bridges/Viaducts: None
- Reconstructions/Interchange Modifications: Widening portions of the I-15 freeway and realignment of ramps at the I-15/ SR-138 interchange
- Other Facilities: CHP emergency crossovers

2.4.1.3. Section 3 – Greater Los Angeles

Beginning at the Kenwood Avenue interchange, the proposed rail alignment would continue at grade in the I-15 median. At the I-15/I-215 interchange, the alignment would continue between the divided I-15 freeway at the same elevation as the freeway, curving to the southwest parallel to freeway. The rail alignment would require I-15 freeway and interchange ramp modifications at SR-210, Beech Avenue, Duncan Canyon Road, and Glen Helen Parkway.

The rail alignment would transition to an aerial alignment south of Base Line Road to cross over the I-15 southbound lanes south of Church Street and would continue along the west side of the I-15 freeway on an elevated alignment to enter the San Gabriel Subdivision and Eighth Street corridor. The alignment would transition onto an aerial structure and would turn west, running parallel to and partially within the existing rail corridor and partially within the Eighth Street right-of-way before entering the existing Rancho Cucamonga Metrolink station area on an elevated structure. The rail alignment would maintain a single-track configuration prior to the existing the freeway median south of Church Street, where it would transition to a double-track configuration for the remaining distance to the Rancho Cucamonga station. At the Rancho

Cucamonga station, an elevated station with a center platform and tracks on either side would be constructed parallel to and above the existing eastbound Metrolink platform, extending over Milliken Avenue. A storage track(s) would extend west of the station toward Haven Avenue. A new parking structure is proposed a Rancho Cucamonga Station that would replace existing surface parking to accommodate increased parking demand. The Project design includes adequate parking areas to accommodate parking demand in the opening year.

Design Elements

Segment 3 of the Project includes the following design elements.

- Bridges/Viaducts: Viaduct of approximately 3.5 miles to cross I-15 southbound lanes and along existing rail corridor near Rancho Cucamonga station
- Reconstructions/Interchange Modifications: I-15 freeway and interchange ramp modifications at SR-210, Beach Avenue, Duncan Canyon Road, and Glen Helen Parkway
- Station: Dedicated Brightline station adjacent to the existing Rancho Cucamonga Metrolink station, with vertical circulation down to the platform, shared access with existing Metrolink station, a share parking structure for vehicles, and a bus plaza

2.4.1.4. Construction

In general, construction activities would consist of clearing, grading, excavation, placing fill, stockpiling materials, constructing bridges and walls, installing drainage, installing sub-ballast and subgrade, placing and anchoring railroad ties, placing ballast material, and tamping ballast, constructing stations, substations, mobilization and demobilization. Construction equipment would likely include dump trucks, excavators, loaders, cranes, water trucks, backhoes, scrapers, rollers, ballast tampers, concrete trucks, and drill rigs.

For new and reconstructed overpasses and bridges, construction activities would include clearing, grubbing, demolition of existing structures, excavation and drilling for foundations, concrete pouring, formwork and rebar placement for foundations, falsework installation, construction of bridge decking, placement of ballast and ties, mobilization and demobilization.

Most construction activities would occur on Caltrans right-of-way. Some, for the rail stations and power substations, would occur on public property owned by the City of Rancho Cucamonga, SBCTA, or State of California. Temporary construction areas, or TCAs, are properties that would be temporarily utilized for construction staging and storage. The Project would require TCAs along the alignment between Victor Valley and Rancho Cucamonga.

3. Methodology

3.1. Relevant Regulations, Plans, and Policies

Executive Order 12898 (Federal Actions to Address Environmental Justice [EJ] in Minority Populations and Low-Income Populations) outlines the Federal government's EJ policy. It requires Federal agencies to identify and address to the greatest extent practicable and permitted by law the disproportionately high and adverse human health and environmental impacts of their programs, policies, and activities, on minority and/or low-income populations in the United States.

The Presidential Memorandum accompanying Executive Order 12898 calls for specific actions to be directed in National Environmental Policy Act (NEPA)-related activities. They include:

- Analyzing environmental impacts, including human health, economic, and social impacts on minority populations and low-income populations when such analysis is required by NEPA
- Ensuring that mitigation measures outlined or analyzed in Environmental Assessments, Environmental Impact Statements, and Records of Decision, whenever feasible, address disproportionately high and adverse environmental impacts or proposed actions on minority and/or low-income populations
- Providing opportunities for community input in the NEPA process, including identifying impacts and mitigation measures in consultation with impacted communities, and improving accessibility to public meetings, official documents, and notices to impacted communities

To implement Executive Order 12898, USDOT relies on USDOT Order 5610.2C, which applies to actions undertaken by the USDOT operating administrations, including FRA. The order states that the USDOT will not carry out any programs, policies, or activities that will have a disproportionately high and adverse impact on minority populations or low-income populations unless "further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse impacts are not practicable."

3.2. Study Area

The study area for EJ comprises a 1,000-foot buffer around the permanent Project footprint, as well as each of the U.S. Census tracts that intersect with the buffer area. Where appropriate to ensure all Project impacts are captured, the study area may be widened to encompass EJ communities that fall outside of this buffer area.

Figure 3-1 below shows the study area and distribution of EJ populations for Census tracts that are part of the study area.

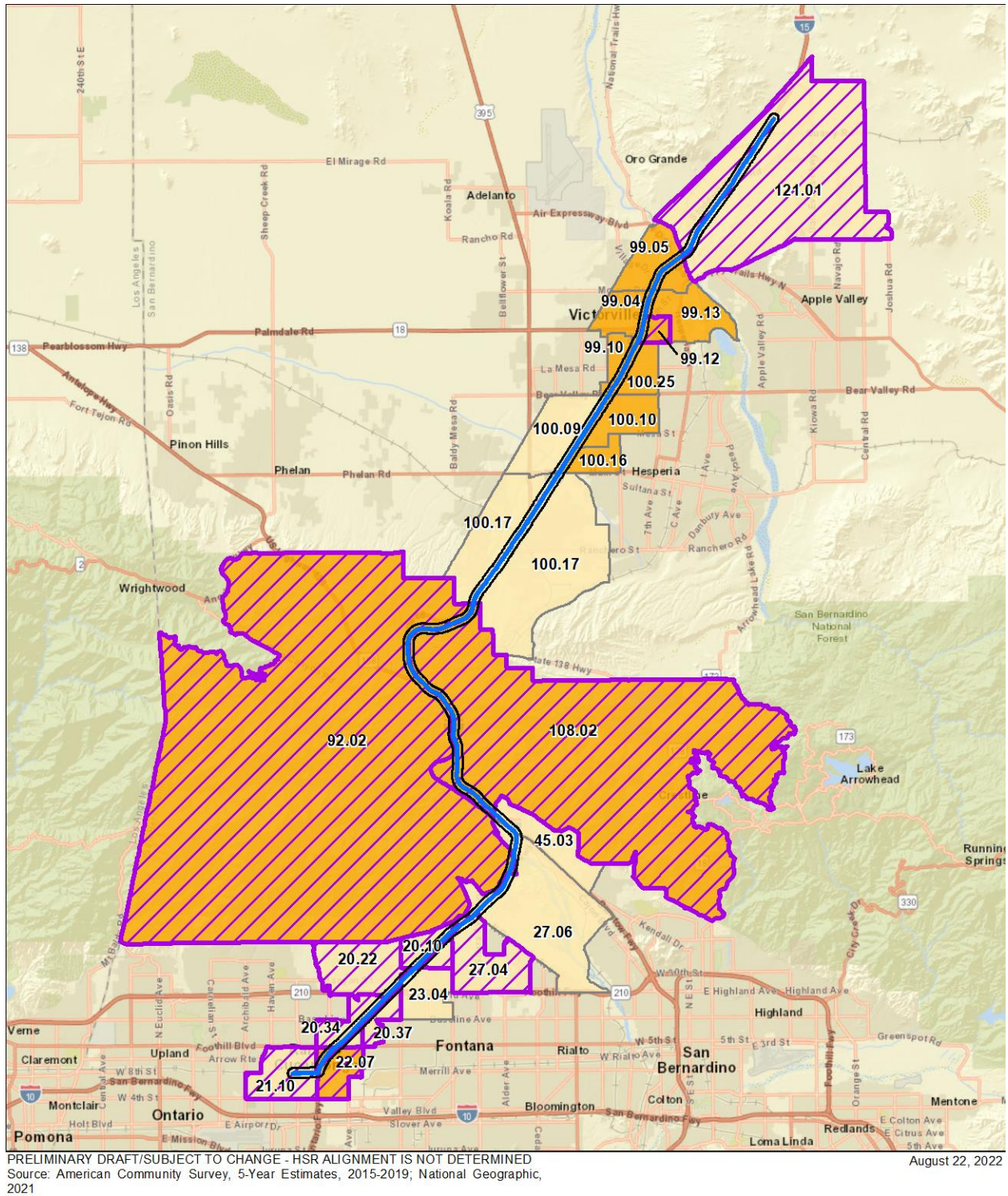


Figure 3-1. Map of Census Tracts in the Project Study Area

3.3. Methods Used

This section describes the methodology used for determining whether the Project would result in disproportionately high and adverse human health impacts on EJ populations, as outlined in the *Environmental Justice Methodology Memorandum* (Circlepoint 2022) prepared for the Project.

3.3.1. Definition of Environmental Justice Populations

This EJ analysis utilizes 2019 American Community Survey (ACS) 5-Year Estimates to evaluate Census tracts in the study area and determine the presence of EJ populations. 2019 ACS data is the most recent Census data available, since complete 2020 data is unavailable due to the impacts of the COVID-19 pandemic on data collection. The following criteria were used in assessing whether populations within the EJ study area qualify as substantial minority and/or low-income populations (i.e., EJ populations).

3.3.1.1. Minority Populations

For the purposes of this EJ analysis, the term “minority” includes the following racial and ethnic groups: Black or African American, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Asian, and Hispanic or Latino.

Based on the CEQ guidance for identifying substantial minority populations (CEQ 1997), analysts compared the percent minority population of each Census tract in the study area to the reference population of San Bernardino County. The minority population of San Bernardino County is approximately 71.5 percent (U.S. Census Bureau, 2020). Therefore, Census tracts with populations exceeding 71.5 percent minority are identified as minority EJ populations for the purposes of this EJ analysis.

3.3.1.2. Low-Income Populations

The term “low-income” includes households with incomes at or below the poverty threshold established by the Department of Health and Human Services poverty guidelines (HHS 2021). The criteria for determining poverty level vary with household composition and size and are applied nationally, without regard to the local cost of living. For a four-person household with two related children in 2019 (the latest year for which corresponding ACS data is available), the poverty threshold was \$25,926. In 2019, 13.3 percent of households in San Bernardino County were below this threshold (U.S. Census Bureau, 2020). Therefore, for the purposes of this EJ analysis, any Census tract with a poverty percentage greater than 13.3 percent are identified as a low-income EJ populations.

3.3.2. Methodology for Identifying Disproportionately High and Adverse Impacts

USDOT Order 5610.2C on EJ defines a “disproportionately high and adverse impact on minority and/or low-income populations” as an adverse impact that is predominantly borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in

magnitude than the adverse impact that will be suffered by the nonminority population and/or non-low-income population (USDOT 2021).

For resource topics where adverse impacts were identified, analysts determined (1) whether the impacts would primarily occur in EJ populations based on geography, or (2) whether the impacts experienced by EJ populations would be appreciably more severe or greater in magnitude than the impacts that will be suffered by non-EJ populations. Adverse impacts meeting either of these criteria were preliminarily concluded to be a disproportionately high and adverse impact toward EJ populations.

Where impacts were found not to be adverse, or where no impact was determined, no further analysis was conducted on the potential to impact low-income and/or minority populations.

4. Affected Environment

Figure 3-1 above shows the distribution of minority and low-income populations for Census tracts that are part of the study area. The Project study area comprises a total of 23 Census tracts. As shown in **Figure 3-1**, a total of 11 Census tracts in the study area are EJ communities based on minority percentage. The majority of these minority populations are located along Section 2 and Section 3 of the Project alignment through Cajon Pass as well as the Greater Los Angeles Area and Rancho Cucamonga. Additionally, a total of 11 Census tracts in the study area are EJ populations for low-income percentage. The majority of these are located along Section 1 and Section 2 of the alignment through the High Desert area and Cajon Pass. The designation of Census tracts to contain substantial minority populations and substantial low-income populations is not mutually exclusive, and there are four Census tracts determined to be EJ populations based on both minority and low-income percentage (Census tract 99.12, Census tract 92.02, Census tract 108.02, and Census tract 22.07).

As described in Section 3.3, Methods Used, the relevant reference population for the Project is the entirety of San Bernardino County. According to the Centers for Disease Control and Prevention's (CDC) Environmental Justice Dashboard, San Bernardino County's overall Social Vulnerability Index (SVI) percentile¹ is 0.901, which is considered to be high relative to other counties in California (CDC 2022). Table 5-1 displays the demographics for San Bernardino County, including the percentage of minority populations and low-income households of the total population for the county.

¹ CDC's SVI refers to the resilience of communities (the ability to survive and thrive) when confronted by external stresses on human health, such as natural or human-caused disasters, or disease outbreaks. SVI scores range from 0.00 to 1.00, with 1.00 representing the greatest level of social vulnerability to human suffering and financial loss in the event of public health emergencies.

Table 5-1. Reference Community Demographics

Jurisdiction	Population	Populations Considered in EJ Analysis	
		Minority (percent of total County population)	Low-Income Households (percent of total County Population)
San Bernardino County	2,149,031	71.5	13.3

Source: U.S. Census Bureau, 2020

According to the Environmental Protection Agency's (EPA) Environmental Justice Mapping Tool, many of the Census tracts that are part of the study area are ranked between the 80th and 100th national percentile for socioeconomic indicators including unemployment rate and linguistic isolation. Census tract 99.04, Census tract 99.10, Census tract 99.12, Census tract 99.13, and Census tract 100.25 are ranked between the 80th and 100th national percentile for health disparities including heart disease and asthma (EPA 2022). Table 5-2 provides an overview of demographic data for the Census tracts that intersect within 1,000 feet of the permanent Project footprint.

Table 5-2. Demographics by Census Tract

Census Tract	Population	Populations Considered in EJ Analysis	
		Minority (percent of total Census Tract population)	Low-Income Households (percent of total Census Tract Population)
20.10	10,458	91.7*	5.5
20.22	13,434	99.6*	2.6
20.34	15,502	94.9*	4.2
20.37	7,949	81.7*	4.0
21.10	7,460	98.3*	6.1
22.07	5,553	74.7*	14.4*
23.04	21,798	71.9	6.1
27.04	11,527	81.3*	5.0
27.06	14,133	67.5	4.1
45.03	3,718	65.9	6.9
92.02	1,858	99.6*	14.3*
99.04	13,319	56.2	33.5*
99.05	7,795	63.2	25.7*
99.10	5,851	51.5	22.0*
99.12	4,745	77.9*	44.5*

Census Tract	Population	Populations Considered in EJ Analysis	
		Minority (percent of total Census Tract population)	Low-Income Households (percent of total Census Tract Population)
99.13	5,926	57.5	32.1*
100.09	4,025	51.5	10.0
100.10	6,458	34.0	25.1*
100.16	6,086	48.7	24.9*
100.17	16,448	61.1	7.0
100.25	8,440	55.9	16.4*
108.02	3,820	82.0*	15.1*
121.01	5,860	90.4*	8.0

Source: U.S. Census Bureau, 2020

*Indicates an exceedance in minority population percentage or low-income household percentage in relation to the reference community. As described in Section 3.3, Methods Used, Census tracts with higher proportions of minority populations and/or low-income households compared with the reference community are defined as minority EJ populations and/or low-income EJ populations, respectively.

FRA has met with the Tribes in their role as a NEPA cooperating agency and as a Section 106 consulting party to discuss EJ concerns. Consultation is ongoing. Within the Brightline West Cajon Pass High-Speed Rail Project study area there are no known tribal resources within 200 feet of the rail line. FRA acknowledges the Tribe is impacted differently by the Project compared to other sensitive groups.

5. Environmental Consequences and Mitigation

This section describes the environmental consequences of the Build Alternatives in topic areas relevant to this EJ analysis. Refer to the following technical memorandums prepared for the Project for further discussion of construction and operations impacts, as well as avoidance, minimization, and mitigation measures that will be implemented to minimize Project impacts:

- Air Quality and Greenhouse Gas Technical Report
- Water Quality Technical Report
- Noise and Vibration Technical Report
- Floodplains Technical Report
- Visual Quality Technical Report
- Hazardous Materials Technical Report
- Historic Built Environment Technical Report
- Transportation Technical Report

5.1. Build Alternative

5.1.1. Construction of the Build Alternatives

5.1.1.1. Air Quality

The Project is within the South Coast Air Basin (SCAB) and the Mojave Desert Air Basin (MDAB), both of which are in non-attainment under the Federal Clean Air Act for ozone and particulate matter less than 2.5 microns in diameter (PM_{2.5}). Project construction activities including demolition, grading, site preparation, and truck hauling would temporarily generate emissions, and for the purposes of modeling construction was assumed to occur between 2022 and 2025. However, the annual criteria air pollutants (CAP) emissions from construction in the SCAB and MDAB would not exceed general conformity de minimis thresholds for all CAPs (see Table 7 and Table 8 of the Air Quality and Greenhouse Gas Technical Report [FRA 2022] for a quantification of CAP Emissions for Project construction in the SCAB and MDAB, respectively). Furthermore, air quality impacts from Project construction would be regional in nature, and construction would take place in both EJ and non-EJ communities along the entire alignment.

The Project would be constructed with all feasible standard on-site control measures, best management practices (BMPs), and avoidance, minimization, and mitigation measures. Mitigation Measure AQ-1 and Mitigation Measure AQ-2 would require the implementation of Fugitive Dust Control Plans to meet SCAB and MDAB requirements respectively, and Mitigation Measure AQ-3 would require the use of USEPA Tier-4 off-road construction equipment to reduce emissions and minimize impacts on air quality during the construction period. As such, construction of the Project would not result in any adverse impacts on air quality. Because there would be no adverse construction air quality impacts, the Project would not result in disproportionately high and adverse impacts related to air quality on low-income and/or minority populations living within the study area.

The Tribes have shared concerns that construction-period dust may migrate into Tribal Reservation and fee-owned lands outside of the Project study area, due to high winds. Dust control plans will be developed to minimize construction-period dust, as detailed below and in the Air Quality section of the EA. FRA acknowledges the Tribe is impacted differently by Project impacts compared to other sensitive groups.

5.1.1.2. Water Quality

Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, and grading activities could result in increased erosion and sedimentation of surface waters. Stormwater runoff from temporary construction areas, including staging areas and access roads, could contain sediment and other contaminants, such as metals and hydrocarbons, and could carry contaminants to drainages, groundwater, and impaired water bodies, which could pose health risks to nearby communities.

A variety of BMPs and other methods outline in the Caltrans Construction Site BMPs Manual (Caltrans 2017) would be implemented to limit the potential for runoff from temporary stockpiles of excavated and construction materials, and from temporary construction areas, to

enter and impact nearby drainages and waterbodies (Mitigation Measure WQ-1). The Project would implement other forms of mitigation, including compliance with the existing Caltrans statewide National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) (Mitigation Measure WQ-2) implementation of the Stormwater Pollution Prevention Plan (SWPPP) required under the NPDES CGP (Mitigation Measure WQ-3), development and implementation of a Spill Prevention, Control, and Countermeasures (SPCC) Plan to reduce any potential for chemical spills or release of contaminants (Mitigation Measure WQ-4), and locating TCAs to avoid key water features including the Mojave River, Cajon Wash, and the California Aqueduct (Mitigation Measure WQ-5). Implementation of mitigation measures will minimize contamination in nearby drainages, stormwater runoff, and nonpoint-source pollution such that rail and station construction would be unlikely to degrade water quality. As such, construction of the Project would not result in any adverse impacts on water quality. Because there would be no adverse construction water quality impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to water quality.

5.1.1.3. Noise and Vibration

Short-term noise during construction of the Project may be intrusive to residents near construction sites. However, construction noise impacts would generally be avoided because most construction would take place in the center of I-15, relatively far away from most sensitive receptors. Prior to mitigation, construction noise would exceed the allowable residential thresholds at three locations at the northern end of the alignment: two hotels located near Stoddard Wells Road (located in Census tract 121.01, which is a minority EJ population) and one single family residence on Pepper Tree Drive (located in Census tract 99.05, which is a low-income EJ population).

Implementation of mitigation measures would require the development of a detailed Noise Control Plan, and for Project construction activities to comply with all applicable local noise regulations including the avoidance of nighttime construction in residential neighborhoods, the use of temporary noise barriers between noisy activities and noise-sensitive receivers, and the routing of construction-related truck traffic to roadways that would minimize disturbance to residents. With implementation of these measures, construction of the Project would not result in any adverse noise impacts.

Based on the anticipated equipment types, the potential for vibration damage from most construction-related vibration would be limited to within 25 feet of construction activities. For impact pile driving, the distance for the potential for vibration damage is up to 55 feet but would depend on the piling method chosen. Because the exact location of construction equipment is important in projecting vibration levels, a more detailed assessment of potential vibration damage will be performed during final design when more accurate equipment locations are known. However, Mitigation Measure NOI-2 would require the application of measures as necessary to minimize construction vibration impacts as well, including locating stationary construction equipment as far as possible from sensitive receivers, and the use of alternative construction methods to minimize the use of impact and vibratory equipment (e.g, pile-drivers and compactors).

Therefore, there would be no adverse construction noise and vibration impacts. Since there would be no adverse construction noise and vibration impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to noise or vibration.

FRA understands the Tribes may be concerned about construction-period noise and its potential to temporarily disturb the cultural setting of adjacent areas. Construction noise would be minimized to the extent possible through Mitigation Measure NOI-1 and Mitigation Measure NOI-2, and would occur in the larger noise context of the existing highway. FRA acknowledges the Tribe is impacted differently by Project impacts compared to other sensitive groups.

5.1.1.4. Floodplains

Construction of Project features within floodplains could impede, channelize, or redirect flood flows, potentially resulting in adverse flood risks to nearby communities located in flood-prone areas. Project construction would involve the use of heavy, earth-moving equipment in the floodplains of the Mojave River and Lytle Creek, and near the floodplains of Etiwanda Channel and Hawker-Crawford Channel.

The construction footprints of the proposed Hesperia and Rancho Cucamonga stations are not located within Federal Emergency Management Agency (FEMA)-mapped floodplains. Therefore, station construction would not impact floodplains or water surface elevations in the proposed station areas.

Most of the railway construction activities would occur on Caltrans right-of-way and would comply with the Caltrans statewide NPDES CGP during all stages of construction. Placement of bridge columns in the streambeds of the Mojave River and Lytle Creek would involve phased construction with flow diversion BMPs. The bridge columns would be placed next to and downstream of existing I-15 bridge columns to minimize potential impacts and would result in minimal redirection of flood flows and net rise. Disturbed areas would be restored after construction and bridge elements would be constructed in phases with flow diversion BMPs protecting the construction site, and no long-term impacts are anticipated. As such, construction of the Project would not result in any adverse impacts related to flood flows. Since there would be no adverse construction floodplain impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to floodplains.

5.1.1.5. Visual Quality

Construction of the railway, stations, and related facilities would involve the use of heavy equipment, stockpiling of soils and materials, and other visual signs of construction, and would involve site preparation, foundation work, framing, structural construction, and finishing work. The visual impacts of construction would be temporary and would be limited through implementation of construction management measures including proper containment, stockpiling, and storage of materials, to prevent dispersal onto adjacent properties, local streets, and highways, the screening of construction lighting from viewers with fencing, barriers, glare shields, and landscaping, the implementation of dust control at construction

areas, the implementation of visual screening along construction and staging areas, and the replacement and regrading of landscaping and native vegetation cleared for temporary construction areas. Therefore, construction of the Project would not result in any adverse aesthetic or visual quality impacts. Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to visual quality.

5.1.1.6. Land Use and Community Facilities

Construction of the Project would not result in the displacement, relocation, or alteration of community facilities, including airports and heliports, places of worship, education facilities, government facilities, health and mental health facilities, libraries, parks and recreation facilities, and shopping centers. Project construction would require the temporary use of land for construction staging areas. Although construction staging areas would temporarily change the land use of areas, these areas would not permanently conflict with adjacent land use patterns since these areas would not be needed for long-term operation or maintenance purposes. Accordingly, long-term land uses, adjacent land uses, land use compatibility, and long-term land use patterns and intensities would not change. Therefore, construction of the Project would not result in any adverse impacts to land use and community facilities. Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to land use and community facilities.

5.1.1.7. Socioeconomic Environment

Construction of the Project would not result in the displacement, relocation, or alteration of residences, or commercial and industrial businesses. Although construction activities could temporarily disturb nearby residents and property owners, they would not introduce a new physical division to established communities, since construction activities would occur within existing transportation corridors (along the I-15 freeway, and the existing rail corridor within the Eighth Street right-of-way at the southern terminus of the alignment). Therefore, construction of the Project would not result in any adverse impacts to communities and the socioeconomic environment. Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to socioeconomics and communities.

5.1.1.8. Hazardous Materials

Project construction would require demolition and/or removal of structures, soil, and paving materials to accommodate the proposed facilities. During these activities, various hazardous materials may be encountered such as herbicides, petroleum hydrocarbons, aerially-deposited lead, and soil contaminants from prior spills. Demolition and potential exposure to hazardous substances could impact the health risks of construction workers and potentially people near the construction zone. Additionally, construction activities may require the use hazardous materials to operate and maintain equipment; such materials may include petroleum products such as gasoline, diesel fuel, and hydraulic fluid; lubricating oils and solvents; cleansers; and other substances.

The potential for impacts from construction activities would be minimized through the development and implementation of BMPs and mitigation measures, including the development of a Hazardous Materials and Management Plan (HMMP) prior to application for permits for demolition, grading, or construction, the monitoring of disturbed soil for visual evidence of contamination, the proper disposal of groundwater in accordance to NPDES CGP requirements in the event of contamination from construction activities, and the use of proper disposal protocol for all hazardous or solid wastes and debris encountered or generated during construction and demolition activities. Construction mitigation would prevent the spread of contaminated material and would reduce the potential for harmful exposure to workers and the public such that no adverse impacts would occur. Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to hazardous materials.

5.1.1.9. Cultural Resources

Construction impacts on historic built resources would be temporary in nature and would not result in permanent impacts. Temporary impacts could result from ground disturbance related to temporary access and construction easements, temporary disruptions to electrical service (when relocating overhead utilities), and temporary changes to the setting of historic properties. Construction activities at the Hesperia Station and the Rancho Cucamonga Station would not result in impacts to historic properties (refer to Table 3 of the Historic Built Environment Technical Report [FRA 2022] for the identified potential impacts on identified historic properties within the area of potential effect). As such, construction of the Project would not result in any adverse impacts to historic built resources.

Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to cultural resources.

5.1.1.10. Traffic and Transportation

Construction-related disruptions caused by the Project, such as temporary lane or road closures, underground utility work, or truck traffic, could result in decreases to level of service (LOS) on nearby freeways, roadway segments, and intersections. Construction-related impacts on freeway and roadway segments and intersections could occur surrounding the Hesperia Station area (located in Census tract 100.17, which is not an EJ population) and Rancho Cucamonga Station area (located in Census tract 21.10, which is a minority EJ population). These impacts could result in temporary increases in automobile delay and travel times in these areas. However, it is not anticipated Project construction would result in unacceptable LOS conditions at impacted freeways, roadways segments, and these impacts would be temporary. As such, construction of the Project would not result in any adverse impacts to traffic and transportation. Since there would be no adverse construction impacts, construction of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to traffic and transportation.

5.1.2. Operation of the Build Alternative

5.1.2.1. Air Quality

Net operational CAP and toxic air contaminant (TAC) emissions from the Project's electric-powered rail line would be near zero due to the reduction in emissions from on-road VMT. Operation of the project would reduce passenger car travel, resulting in a corresponding decrease in emissions of all CAPs and TACs (see Table 11 and Table 12 of the Air Quality and Greenhouse Gas Technical Report [FRA 2022] for a quantification of VMT reductions in the project area). Hence, the Project is expected to create a net decrease in CAP and TAC pollutants. Based on Carbon Monoxide (CO) Hotspot analysis of the most congested Project intersection locations requiring evaluation in the opening year 2025 (see Table 9 of the Air Quality and Greenhouse Gas Technical Report [FRA 2022]), the concentrations of CO at these intersections would not violate California Ambient Air Quality Standard or National Ambient Air Quality Standard thresholds (i.e., result in a CO hot spot) at any intersection.

As such, operation of the Project would not result in any adverse impacts on air quality. Because there would be no adverse operational air quality impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to air quality.

The Tribes have shared concerns that during project operation, air quality could be impacted by increased risk of wildfire. FRA has determined based on the project type and location that the Project would not create or exacerbate existing wildfire risk. The Tribes have expressed concerns around the human health impact the project may uniquely have on Tribal members not living in the area. FRA acknowledges that such an impact is outside of FRA's experience, and there are no existing methods to quantify or reliably determine such an impact. Mitigation applied for the Project would equally benefit all receptors close enough to the Project site to potentially be at risk for physical health impacts related to air quality. FRA acknowledges the Tribe is impacted differently by the Project compared to other sensitive groups.

5.1.2.2. Water Quality

Rail operations and maintenance may impact water quality through the deposit of pollutants along the alignment into connecting drainages. The Project would increase the amount of impervious surface in the Project area and thus the amount of stormwater runoff and nonpoint-source pollution in some areas, such as along the I-15 where the pavement would be widened to place rails in the median. Additionally, stormwater runoff from the Rancho Cucamonga and Hesperia station rooftops and paved surfaces would contain pollutants deposited from vehicles and maintenance activities.

Stormwater treatment along the Project alignment will be designed in accordance with the NPDES CGP, which may include infiltration trenches and bioretention basins to help remove sedimentation and nutrients (Mitigation Measure WQ-7). Where necessary, existing drainage features would be redesigned and resized to accommodate the potential increase in runoff along the rail alignment (Mitigation Measure WQ-8). For both the Hesperia station and the Rancho Cucamonga station, stormwater runoff treatment will comply with state and local

regulations, which would minimize operations impacts on water quality from stations. Implementation of the mitigation measures and BMPs developed for the Project would minimize operation impacts on water quality. As such, operation of the Project would not result in any adverse impacts on water quality. Because there would be no adverse operational water quality impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to water quality.

5.1.2.3. Noise and Vibration

Train operations would result in moderate noise impacts to two hotels along the southside of the proposed alignment located between Victor Valley Station and North D Street. There would be no noise impacts associated with the Hesperia and Rancho Cucamonga stations since there are no sensitive receptors located near the proposed station sites. Additionally, there are no locations where the changes in the traffic volumes would exceed the applicable noise threshold (increase in noise of 3 decibels or greater), and thus no significant traffic noise impacts are projected.

Based on FRA guidelines on operational vibration thresholds, no operational groundborne vibration impacts were identified for the Project.

Since noise impacts would be in the low end of the moderate noise impact range, the impacts would not be considered adverse under NEPA. Therefore, operation of the Project would not result in any adverse noise and vibration impacts. Since there would be no adverse noise and vibration impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to noise or vibration.

FRA understands the Tribes may have concerns about changes to the cultural landscape through increased noise from train operation. As discussed elsewhere in this Draft EA, due to the existing noise environment and project characteristics, changes to existing noise levels would not be considered adverse under NEPA, and no mitigation would be required. However, Caltrans and Brightline will work together as a part of Caltrans permitting and approvals process as the project moves into the design state to investigate locations where mitigation might be an option. FRA acknowledges that noise sensitivity criteria for cultural lands is outside FRA's experience and there are no established methods to determine noise sensitivity in cultural lands. FRA understands Noise from the project operation may impact tribal resources in those places where the resource is used for ceremonial or other tribal activities and where human occupation could occur. However, noise from train operations dissipates over distance. At approximately 200 feet, the noise increase from train operations would not result in an impact based on FRA noise criteria for non-residential land uses. At this distance and beyond, the train noise in relation to existing noise levels would not likely cause annoyance. Within the Brightline West Cajon Pass High-Speed Rail Project study area there are no known tribal resources within 200 feet of the rail line. FRA acknowledges the Tribe is impacted differently by the Project compared to other sensitive groups.

5.1.2.4. Floodplains

During operation, Project features within floodplains could impede, channelize, or redirect flood flows, potentially resulting in adverse flood risks to EJ and non-EJ communities located in flood-prone areas.

The Hesperia Station and Rancho Cucamonga Station would not impact floodplains because there are no floodplains in the proposed station areas.

The Project alignment would cross the floodplains of the Etiwanda Creek/Channel (located in Census tract 20.22, which is a minority EJ population), the Mojave River (located in Census tract 121.01, which is a minority EJ population and Census tract 99.05, which is a low-income EJ population), and Lytle Creek (located in Census tract 92.02, which is a minority and low-income population, and Census tract 27.06, which is not an EJ population). Drainage facilities for the Project would be designed to retain flows so as not to contribute additional flows to the Mojave River, Lytle Creek, or other streams or washes. The project design would incorporate hydromodification facilities such as detention basins, infiltration basins, design pollution prevention infiltration areas, and other permanent BMPs included in the Caltrans Stormwater Management Plan. Additionally, drainage facilities for the proposed railway, as well as for station facilities and I-15 roadway, would be sized to accommodate the design flow. During operation, no mitigation measures would be required because minimal changes to floodplains would occur. Therefore, operation of the Project would not result in any adverse impacts from the impeding, channelization, or redirection of flood flows. Since there would be no adverse floodplain impacts during operations, the Project would not result in any disproportionately high and adverse impacts on EJ populations related to floodplains.

5.1.2.5. Visual Quality

Permanent Project elements such as barriers, fences, bridges, piers, catenary poles and wires, and passing trains would be visible to travelers and nearby viewers. The Project elements have the potential to alter visual quality and landscape character in areas that are publicly accessible, including within EJ communities. However, the Project would be visually consistent with the existing transportation corridor and would cause minimal changes in visual quality overall. Therefore, operation of the Project would not result in any adverse visual quality impacts.

Even though the Project would not result in an adverse impact to visual quality, industry standards and BMPs would still be incorporated into the Project to minimize changes to the visual environment and to maximize the Project's compatibility with the existing visual environment from rail features and ancillary facilities, the Hesperia Station, and the Rancho Cucamonga Station. Refer to the Visual Quality Technical Report (FRA 2022) prepared for the Project for further discussion of visual quality avoidance and minimization measures. Since there would be no adverse impacts during operations, the Project would not result in any disproportionately high and adverse impacts on EJ populations related to aesthetic and design quality.

5.1.2.6. Land Use and Community Facilities

Operation of the Project would not alter existing land use designations, nor would it conflict with adjacent land use patterns, since the Project alignment and Hesperia Station would be located entirely within lands designated as transportation use (along the I-15 freeway, and the existing rail corridor within the Eighth Street right-of-way at the southern terminus), and the Rancho Cucamonga Station would be co-located with the existing Metrolink station. No community facilities were identified within 150 feet of the permanent Project footprint. Therefore, operation of the Project would not result in any adverse impacts to land use and community facilities. Since there would be no adverse operations impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to land use and community facilities.

FRA understands the Tribes may be concerned with the impact of adding an additional mode of transportation to the existing corridor, which crosses through Tribal cultural lands, and the impact this may have on access to surrounding areas if/where there are existing public lands the Tribe uses for religious or cultural purposes. FRA acknowledges the Project would incrementally contribute to the larger historic changing of the cultural landscape. The Project would maintain existing access to surrounding areas where it exists; existing access is primarily by automobile. FRA acknowledges the Tribe is impacted differently by project impacts compared to other sensitive groups.

5.1.2.7. Socioeconomic Environment

Operation of the Project would not introduce any adverse impacts to communities and the socioeconomic environment. Operation of the Project would bring social benefits to the region by improving access to jobs, reducing travel times, and reducing traffic congestion. Combined with anticipated sales tax revenues from project spending on operation and maintenance of the Hesperia Station and Rancho Cucamonga Station, this would represent an economic benefit for the region. Since there would be no adverse operations impacts, operation of the Project would not result in any adverse impacts on EJ populations related to socioeconomics and communities.

5.1.2.8. Hazardous Materials

Project maintenance would likely involve the routine use and storage of materials such as fuel, lubricants, solvents, paint, compressed gas, and waste products, which would be the only hazardous materials associated with Project operation. The California Office of the State Fire Marshall would require preparation and implementation of a HMMP for the Project. Implementation of the HMMP would require safe handling, use, storage, and disposal of hazardous materials. Therefore, operation of the Project would not result in any adverse impacts from hazardous materials. Since there would be no adverse operations impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to hazardous materials.

5.1.2.9. Cultural Resources

Implementation of the Project is anticipated to result in a Finding of No Effect or a Finding of No Adverse Effect to nearby cultural resources including the Southern California Edison/Los Angeles Department of Water and Power Boulder Dam-San Bernardino Transmission Lines, the California Aqueduct, Santa Fe Lake Trail Monument, and the Stoddard Waite Monument. The Project is designed to avoid impacts on National Register of Historic Places (NRHP)-eligible and NRHP listed historic properties to the extent feasible. Therefore, operation of the Project would not result in any adverse impacts to historic built resources.

Since there would be no adverse operations impacts, operation of the Project would not result in any adverse impacts on EJ populations related to cultural resources.

5.1.2.10. Traffic and Transportation

Implementation of the Project would not result in adverse impacts to existing regional rail services or active transportation.

Several avoidance and minimization measures would minimize traffic impacts on local intersections, transit, and parking during project operation. Modifications to the intersection of Milliken Avenue/Azusa Court would be made to reduce the degradation of LOS to unacceptable levels at the Milliken Avenue/7th Street intersection (located in Census tract 21.10, which is a minority EJ population). The impact on local transit at the Hesperia Station (located in Census tract 100.17, which is not an EJ population) would be mitigated by adding a transit stop at the Hesperia station; Brightline West will coordinate with the Victor Valley Transit Authority, Omnitrans, and San Bernardino County Transportation Authority, to best serve the needs of local transit users without adversely impacting other transit services.

As described in Section 5.1.2.6, no community facilities were identified within 150 feet of the permanent Project footprint, and therefore no impacts to community facilities or access are anticipated from Project transportation effects. As no other regional rail service is existing or proposed at the Hesperia station site, impacts on regional rail are not anticipated at this location. Operation of the Project would increase weekend demand for existing rail service at the Rancho Cucamonga station, including Metrolink's San Bernardino Line. However, the Southern California Optimized Rail Extension (SCORE) Program proposes multiple improvements to the Metrolink San Bernardino Line, including 12 projects to increase capacity so that trains can run half-hourly all-day service between Los Angeles and San Bernardino. These projects are anticipated to be completed by 2025 (SCRRA 2022). In addition, Brightline West shall coordinate with SCRRA to monitor load factors and the number of Brightline West passengers on Metrolink trains serving the Rancho Cucamonga station on weekdays, Saturdays, and Sundays. If necessary, Brightline West shall coordinate with SCRRA to provide additional Metrolink service during the applicable time periods.

While the number of parking spaces planned at both the Hesperia Rancho Cucamonga stations would be able to accommodate the highest demand for the 2025 Opening Year, as ridership and parking demand increase, the initial parking supply provided by Brightline West will not be sufficient to satisfy anticipated demand at either station by the 2045 Horizon Year. Therefore, the Project shall accommodate the increased demand for parking by providing additional

parking or through implementation of a parking demand management plan incorporating measures such as parking pricing, encouraging the use of transit or active transportation options for station access, off-site parking, or shared parking with other nearby facilities (Mitigation Measure VIS-6). As such, operation of the Project would not result in any adverse impacts to traffic and transportation. Since there would be no adverse operation impacts, operation of the Project would not result in any disproportionately high and adverse impacts on EJ populations related to traffic and transportation.

Implementation of the Project would reduce demand on the I-15 mainline by diverting vehicle travel to rail travel and would result in a net reduction in annual VMT both within the Project limits and between Victor Valley and Las Vegas. Therefore, the Project would have a beneficial effect on freeway mainline operations and VMT.

5.1.3. Cumulative Impacts

Under the cumulative condition, ongoing urban development is expected to continue within the study area. Development of planned projects would likely include the implementation of various forms of mitigation to avoid or minimize temporary and permanent cumulative impacts on the population as a whole in the study area. Other past, present, or reasonably foreseeable future projects near the study area, unrelated to the Project, would therefore have negligible impacts on low-income and minority communities as a whole. The Project may provide reductions in regional CAP emissions and would reduce VMT and demand on the I-15 mainline. The cumulative impacts to regional air quality and traffic and transportation (freeway operations and VMT) attributable to the Project are anticipated to be beneficial.

FRA understands the Tribes may be concerned with the cumulative impact of adding an additional mode of transportation to the existing corridor, which crosses through Tribal cultural lands, and the impact this may have on access to surrounding areas if/where there are existing public lands the Tribes use for religious or cultural purposes. FRA acknowledges that over time access and use of the cultural setting has changed and has been degraded by development of the state and federal governments. The Project would maintain existing access to surrounding areas where it exists; existing access is primarily by automobile. FRA acknowledges the Tribe is impacted differently by the Project compared to other sensitive groups.

5.2. No Build Alternative

5.2.1. Construction of the Build Alternative

The No Build Alternative would not cause disproportionately high permanent adverse impacts on EJ populations because the Project would not be constructed.

5.2.2. Operation of the Build Alternative

In the No Build Alternative, there would be no HSR connecting between Victor Valley, California, and Rancho Cucamonga, California. Beneficial effects from the project on EJ communities and non-EJ communities as described in Section 5.1.2 would no longer occur, including those related to regional air quality, socioeconomics (employment and economic benefits), and traffic and transportation (freeway operations and VMT).

5.3. Avoidance, Minimization, and/or Mitigation Measures

The Project would not cause disproportionately high adverse impacts on EJ populations. Therefore, no avoidance, minimization, nor mitigation measures are warranted beyond those already described for other resources where direct and indirect impacts on those resources are described.

Furthermore, EO 12898 requires that federal agencies ensure effective public participation and access to information, and EJ-specific outreach to impacted communities will be conducted as part of FRA's decision-making processes. The purpose of these outreach activities will be to inform local community members of the Project and its status, and to provide opportunities by which minority and/or low-income communities can effectively take part in the planning process for the Project.

6. References

- California Department of Transportation (Caltrans). 2012. *Interstate 10 HOV Lane Project Environmental Impact Report*. February 17, 2012.
- Caltrans. 2017. Construction Site Best Management Practices (BMP) Manual. <https://dot.ca.gov/-/media/dot-media/programs/construction/documents/environmental-compliance/csbmp-may-2017-final.pdf>. Accessed December 3, 2021.
- Centers for Disease Control and Prevention (CDC). 2022. *Environmental Justice Dashboard, Community Characteristics (San Bernardino County)*. <https://ephtracking.cdc.gov/Applications/ejdashboard/>.
- Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. January 1997.
- Department of Health and Human Services (HHS). 2021. *2021 Poverty Guidelines*.
- Environmental Protection Agency (EPA). 2022. *Environmental Justice Screening and Mapping Tool*. <https://ejscreen.epa.gov/mapper/>.
- Federal Railroad Administration (FRA). 2011. *DesertXpress High-Speed Passenger Train Final Environmental Impact Statement and 4(f) Evaluation*. March 8, 2011.
- Federal Railroad Administration (FRA). 2020. *National Environmental Policy Act Reevaluation for the DesertXpress Enterprises, LLC Xpresswest High-Speed Train Project, Apple Valley, CA to Las Vegas, NV*. September 2020.
- Federal Railroad Administration (FRA). 2022a. *Brightline West Cajon Pass High-Speed Rail Project: Air Quality and Greenhouse Gas Technical Report*.
- Federal Railroad Administration (FRA). 2022b. *Brightline West Cajon Pass High-Speed Rail Project: Floodplains Technical Report*.
- Federal Railroad Administration (FRA). 2022c. *Brightline West Cajon Pass High-Speed Rail Project: Hazardous Materials Technical Report*.
- Federal Railroad Administration (FRA). 2022d. *Brightline West Cajon Pass High-Speed Rail Project: Historic Built Environment Technical Report*.
- Federal Railroad Administration (FRA). 2022e. *Brightline West Cajon Pass High-Speed Rail Project: Noise and Vibration Technical Report*.
- Federal Railroad Administration (FRA). 2022f. *Brightline West Cajon Pass High-Speed Rail Project: Transportation Technical Report*.
- Federal Railroad Administration (FRA). 2022g. *Brightline West Cajon Pass High-Speed Rail Project: Visual Quality Technical Report*.
- Federal Railroad Administration (FRA). 2022h. *Brightline West Cajon Pass High-Speed Rail Project: Water Quality Technical Report*.
- I-15 Mobility Alliance. 2017. *I-15 Corridor System Master Plan*. March 2017.

Southern California Regional Rail Authority (SCRRA). 2022b. *Metrolink's SCORE Program*. Available: <https://metrolinktrains.com/score>.

U.S. Census Bureau. 2020. *2019 American Community Survey 5-Year Estimates*. September 2020.

U.S. Department of Transportation (USDOT). 2021. *DOT 5610.2C: U.S. Department of Transportation Action to Address Environmental Justice in Minority Populations and Low-Income Populations*. May 2021.