WETLANDS AND STREAMS TECHNICAL REPORT

Brightline West Cajon Pass High-Speed Rail Project

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Prepared for
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Prepared by
HNTB

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Abbreviations and Acronyms

ARRIVE	Advanced Regional Rail Integrated Vision
BMP	best management practice
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
CGP	State Construction General Permit
CHP	California Highway Patrol
FEIR	Final Environmental Impact Report
FHWA	Federal Highway Administration
GHG	greenhouse gas emissions
GIS	geographic information system
GPS	global positioning systems
HOV	high-occupancy vehicle
HSR	high-speed rail
I-	Interstate
LOS	level of service
mph	miles per hour
MOU	memorandum of understanding
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
OHWM	ordinary high-water mark
OTS	Office of Traffic Safety
PR	Project Report
RTP/SCS	Regional Transportation Plan/ Sustainable Communities Strategy
SBCTA	San Bernardino County Transportation Authority
SCAG	Southern California Association of Government
SCRRA	Southern California Regional Rail Authority
SPCC	Spill, Prevention, Control, and Countermeasure
SR-	State Route
SWPPP	Stormwater Pollution Prevention Plan
TCA	temporary construction areas
TESC	Temporary Erosion and Sediment Control
TWPC	Temporary Water Pollution Control

USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Survey
VMT	vehicle miles traveled
WOTUS	waters of the United States

1. Introduction

DesertXpress Enterprises, LLC (dba "Brightline West") proposes to construct and operate the Cajon Pass High-Speed Rail Project (Project), a 49-mile train system capable of speeds up to 140 miles per hour (mph) between Victor Valley and Rancho Cucamonga, California. The Project includes two new railway stations—one in Hesperia, and one in Rancho Cucamonga. The connecting 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 constructed within the Interstate 15 (I-15) right-of-way (ROW) for 48 miles and on existing transportation corridors for the last mile into the proposed Rancho Cucamonga station. The Project would be powered by overhead electric catenary and would require construction of one new traction power substation (TPSS) in the Hesperia area. The maintenance facility that was evaluated with the Brightline West Victor Valley High-Speed Rail Passenger Project will 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 will be approximately 35 minutes. Service will be coordinated with existing and planned Metrolink service at the Rancho Cucamonga station to provide a convenient connection between the HSR 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 will secure additional agreements for Right-of-Way Use; Design & Construction Oversight and Reimbursement; and Operations & Maintenance, as necessary. For the last mile of the project from I-15 to the Rancho Cucamonga Station, there will be Agreements with the City of Rancho Cucamonga and the San Bernardino County Transportation Authority (SBCTA) for land rights, construction, operations and maintenance.

2. Project Description

2.1. Background

Early project coordination for 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 140 mph between Victor Valley, California, and Rancho Cucamonga, California (Project). The Project includes two new railway stations: one in Hesperia, and one in Rancho Cucamonga. The proposed rail alignment would be located within the median of the I-15 freeway between Victor Valley and Rancho Cucamonga, except for the last mile approaching the proposed Rancho Cucamonga station. The Project area is depicted in Figure 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 for Project users, would be approximately 30 percent faster during normal conditions and at least twice as fast 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 the Interstate 10 (I-10), State Route 210 (SR-210), Interstate 215 (I-215) and State Route 60 (SR-60) have similar delays and capacity constraints. This 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.

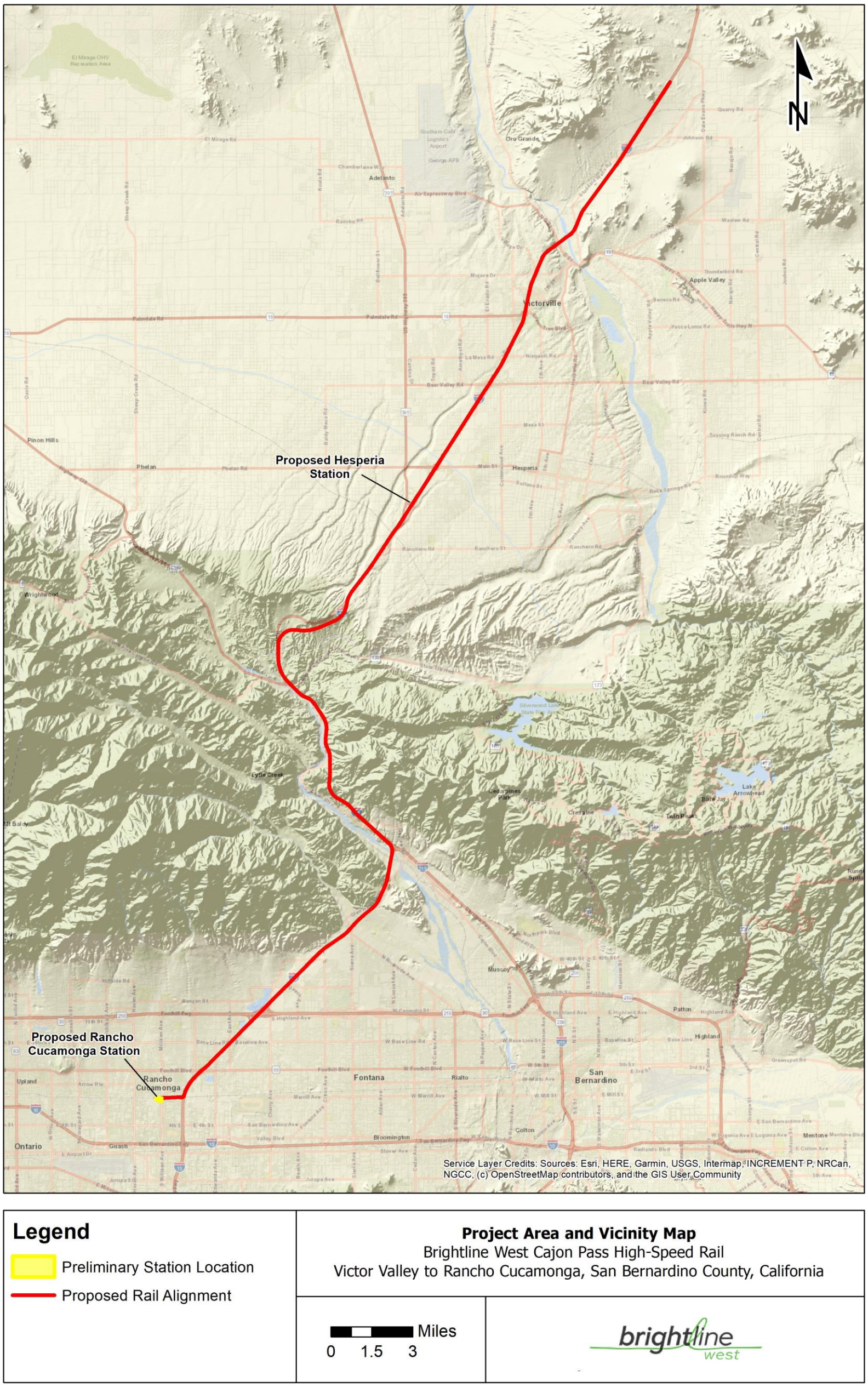

Figure 1. Project Area and Vicinity Map

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 will 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 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 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 will continue to operate at over capacity conditions in all scenarios.

SCAG's Connect SoCal Goods Movement Technical Report identifies I-15 as part of the U.S. 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.

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.

2.3.2.2. Travel Demand

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 stations in the High Desert, proposed by the Project, would

provide convenient connections 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.

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 U.S. 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 (U.S. 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 U.S. Census Bureau's estimate of 617,828 in 2018.

While the proposed 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 HSR station in Rancho Cucamonga, located in about 45 miles east of Downtown Los Angeles, would provide more direct access to the densely populated centers in Southern California for both drivers and Metrolink riders; 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 Rancho Cucamonga station location. The Rancho Cucamonga station would also provide a connection to the "Tunnel to ONT" project, facilitating access to ONT for air travelers traveling to and from the High Desert.

The proposed station in Rancho Cucamonga, with a Metrolink connection to Los Angeles, will 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-395 and I-15, so it would serve commuters to Greater Los Angeles from the major corridors in the Victor Valley.

The Project also supports SCAG's 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 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 and connect to the BLW station at Victor Valley for a connection to Las Vegas. 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. While still in early planning and design stages, the planned tunnel to Ontario International Airport project may provide an additional connection from the Rancho Cucamonga station to the Ontario International Airport.

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, increasing the activity centers that can be accessed by Southern California's rail network. Additionally, the Southern California Optimized Rail Expansion (SCORE) program is intended to increase speeds, reliability, and capacity on Metrolink lines including on the San Gabriel Subdivision which serves the Rancho Cucamonga station.

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. . The Joshua Street Park & Ride is near 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.

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 "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 will 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. High-speed rail 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. By connecting the Victor Valley to Rancho Cucamonga, the Project will allow more travelers to stay off 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 within the median of the I-15 freeway between Victor Valley and Rancho Cucamonga, except at the approach to the proposed Rancho Cucamonga station. 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 (including 4 BNSF and 3 UP railroad crossings) 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, including 0.9 miles constructed as part of the DesertXpress High-Speed Passenger Train Project), Hesperia (5.5 miles), and Rancho Cucamonga (2 miles). This would allow for 45-minute headways in the opening year between Victor Valley and Rancho Cucamonga and with additional infrastructure, 22.5-minute headways after year 11. These headways, along with the ability to couple trains (double passenger capacity), would address projected ridership needs for the foreseeable future.

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 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 connect to the DesertXpress High Speed Train alignment approximately one mile south of the Victor Valley station in Apple Valley. The Victor Valley station was proposed by the DesertXpress High Speed Train Project (DesertXpress Project) and approved in 2011 and modified by the re-evaluation in 2020. From this point, the alignment would continue south within the I-15 median. The rail alignment throughout Section 1 would be predominantly single track; however, the rail alignment would be double-track north of Stoddard Wells Road to the northern terminus of the alignment as it approaches the train platforms of the Victor Valley station. The Project would include a new structure over the existing CEMEX railroad bridge. Based on future discussion with CEMEX, the existing railroad bridge may be reconstructed as part of the DesertXpress project, in which case the alignment would run at-grade in the median under the railroad bridge.

Brightline West will build a new Southbound on ramp and bridge at South Stoddard Wells Road to replace similar existing facilities further south.[1] This in-turn requires modifications of I-15 up to and including the Mojave River crossing.

At the Mojave River, a new rail bridge will be constructed within the median of I-15. The existing I-15 bridge would be widened to accommodate the rail line. The alignment would then continue at grade in the I-15 median with minor roadway widenings for the remainder of Segment 1. This portion of the alignment would interface with the following interchanges: Stoddard Wells Road North, Stoddard Wells Road South, D Street/E Street, Mojave Drive, Roy Rogers Drive/Hook Road, Palmdale Road, La Mesa 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. This would be a limited service for select southbound AM and northbound PM weekday on selected Brightline train coaches. The northbound on-ramp to Joshua Street would be realigned closer to the freeway, and station parking would be on the north side of Joshua Street. Parking would be accessed at the location of the existing northbound ramp intersection. 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 the raising of the I-15 ramps and Mariposa Road. The passenger platform would be located within the I-15 median, with direct access from the reconstructed Joshua Street bridge at the southern end of the

[1] These improvements would be consistent with Caltrans' planned Interstate 15 Interchange Reconstruction (D Street, E Street, Stoddard Wells Road, and Mojave River Bridge)project, which was originally analyzed under an Initial Study / Environmental Assessment in 2008.

double-track segment in Hesperia. The Project design includes adequate parking areas to accommodate parking demand.

Design Elements

Segment 1 of the Project includes the following design elements.

- Reconstructions/Interchange Modifications: Widening portions of the I-15 freeway and modifications to interchanges at Stoddard Wells Road southbound on- and off-ramp, D Street/E Street, Mojave Drive, Roy Rogers Drive/Hook Road, Palmdale Road, La Mesa/Nisqualli Road, Bear Valley Road, Main Street/Phelan Road, US 395, Ranchero Road, Oak Hill Road, and Joshua Street
- New Substation: Construction of a new substation along I-15 between Mesa Street and Mojave Street
- 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 Oak Hill Road interchange 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 will be entirely single track. The Project would require replacement of California Highway Patrol (CHP) emergency crossovers where the new guideway would block existing crossovers. Four New crossovers would be placed to take advantage of existing CHP access between the separated I-15 alignments in the following locations:

- West of Forestry Road crossing the northbound lanes.
- Approximately 1.25 miles in the southbound direction along I-15 from the crossover near Forestry Road, across the northbound lanes.
- West of the Baldy Mesa (Trestles) OHV Staging Area, across the northbound lanes.
- West of Perdew Canyon and approximately 1.25 miles north of Mathews Ranch Road, across both the north and southbound lanes.

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 including several miles of retained fill, 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, including the Devore interchange viaduct, 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, Sierra Avenue, and Glen Helen Parkway.

The rail alignment would transition to an aerial alignment and elevate over the I-15 southbound lanes south of Church Street and cross at Foothill Boulevard. It 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 exiting 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 new parking structure is proposed at Rancho Cucamonga Station, and 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.

2.5. 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. The Project would require TCAs along the alignment between Victor Valley and Rancho Cucamonga.

3. Methodology

3.1. Relevant Regulations, Plans, and Policies

Aquatic resources include wetlands, streams, rivers, ponds, lakes, and other drainage features, as well as adjacent riparian habitat, and may be protected under local, state, and Federal laws and regulations. The Project is expected to be subject to the exclusive jurisdiction of the Surface Transportation Board; as a result, compliance with local and state regulations, including the Porter-Cologne Water Quality Control Act and the California Department of Fish and Wildlife Code (including the Lake or Streambed Alteration Program), would not be required. Rather, the Clean Water Act of 1972, as amended, is the principal regulation over aquatic resources in the study area.

Section 404 of the Clean Water Act (33 U.S.C. 1344) is the primary law regulating the discharge of dredged or fill material into WOTUS, which are under jurisdiction of the USACE. WOTUS are defined in 33 CFR 328 and include navigable waters, interstate waters, territorial seas, other waters that are, were, or may be used in interstate or foreign commerce; tributaries; lakes, ponds, and impoundments of jurisdictional water, and adjacent wetlands. Section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403) requires authorization by the Secretary of the Army, through the USACE, for the construction of structures in or over navigable rivers. The USACE administers the Section 404 and Section 10 permits. If project proponents require substantial discharge of fill or dredged materials into a WOTUS, a Nationwide Permit or Individual Permit would be required. If project work affects the course, location, or condition of the navigable water, a Section 10 permit would be required.

3.2. Study Area

The study area used to identify aquatic resources and potential effects is the maximum extent of the Project footprint. The footprint includes the proposed railway and related infrastructure, such as the rail stations and power stations, as well as construction areas and temporary staging and access areas.

3.3. Methods Used

Wetlands and other aquatic resources in the study area were identified based on review of the existing available information and field surveys. A separate aquatic resource delineation report will be prepared for the Project that details the methods of identifying and delineating aquatic resources in the study area.

Existing documents and data reviewed for this analysis include the following:

- U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) (USFWS 2021)
- U.S. Geological Survey (USGS) National Hydrography Dataset (USGS 2021a)
- USGS Topographic Maps (USGS 2021b)

- U.S. Department of Agriculture Natural Resources Conservation Services (USDA NRCS) Web Soil Survey (USDA NRCS 2021)
- *Interstate 15 Mojave River Interchange Reconstruction Project; Delineation of Jurisdictional Waters (Revision #1)* (Caltrans 2013)

In October and November 2021, biologists performed field investigations to identify aquatic resources in the study area. During the field work, biologists field-verified the boundaries of a wetland that was delineated by Caltrans in 2012 for the I-15 Mojave River Interchange Reconstruction Project. Wetlands were verified and/or delineated based on the USACE three-parameter approach for vegetation, soils, and hydrology specified in the 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008a). Streams were delineated based on the presence of an active floodplain and OHWM indicators (USACE 2006, 2008b). The locations of the identified aquatic resources were surveyed using a hand-held Trimble Geo7X global positioning system (GPS) unit with sub-meter accuracy. The data collected in the field were incorporated into a geographic information systems database.

Biologists then reviewed the preliminary design plan for the Project and estimated potential project effects on the wetland by overlaying the preliminary design plan against the field-verified wetland boundary. For other aquatic resources such as streams and drainage systems, biologists evaluated potential effects by reviewing field results and the preliminary design including profiles and cross sections.

4. Affected Environment

The study area is in the Mojave River and Santa Ana River watersheds. The average annual rainfall along the project alignment ranges from 25.88 inches in Fontana, CA, to 5.17 inches in Apple Valley, CA. The average annual snowfall is 0.1 inches for both Fontana and Apple Valley (Western Regional Climate Center 2012). Much of vegetation within the study area is disturbed due to the construction and operation of I-15 and nearby industrial, commercial, and residential developments.

Based on their review of available information and the field investigations, biologists identified one perennial stream (Mojave River) and 48 other ephemeral drainage systems in the study area. Biologists also verified the extent and location of the only wetland in the study area, a wetland along the Mojave River that was delineated by Caltrans in 2012. The aquatic resources identified in the study area are described below. To comply with Section 404 of the Clean Water Act, a separate aquatic resources delineation report will be prepared as the project design is further developed. There is no navigable waterway present within the study area.

4.1. Mojave River

The Mojave River is a perennial watercourse that flows through the study area near the City of Victorville. Surface waters of the Mojave River eventually flow below the surface, and the river discharges into Soda Lake approximately 100 miles downstream of the study area (Caltrans 2013). Riparian vegetation along the river is sparse and consists of hydrophytic perennial and annual plants and grasses along with riparian trees along the banks (Caltrans 2013). Channel substrates are mapped as riverwash (USDA NRCS 2021). A 2013 aquatic resources delineation report prepared by Caltrans states that the river channel adjacent to I-15 appeared to be periodically excavated, as evidenced by the presence of dredged material and lack of mature trees along the riverbanks (Caltrans 2013).

4.2. Other Drainages

Biologists identified 48 ephemeral drainage features in the study area. Most of the drainages are unnamed. The larger ones include Bell Mountain Wash, Oro Grande Wash, Brush Creek, Debris Cone Creek, Cleghorn Creek, Cajon Wash/Creek, Lytle Creek Wash, East Etiwanda Creek, and Day Channel. The remaining drainage features identified in the study area are ephemeral or human-made ditches. Typical characteristics of the drainage features are summarized below.

- Ephemeral washes typical of dryland fluvial systems, flowing only during storm events and remaining dry for most of the year, exhibiting no hydric soil indicators, and lacking riparian wetland vegetation. Examples include Bell Mountain Wash and Lytle Creek.
- Earthen or concrete-lined, human-made ditches that receive surface flows from an up-gradient aquatic resource and convey those flows to a down-gradient aquatic resource such as Day Channel and East Etiwanda Creek.

Evaluation and assessment of the jurisdictional determination of these drainages in the study area are in progress. If they are under USACE jurisdiction they will be regulated as WOTUS.

4.3. Mojave River Wetland

In October 2021, biologists verified the location and boundaries of a wetland delineated by Caltrans in 2013. That wetland is associated with the Mojave River and is in the study area.

According to the 2013 Caltrans report, surface water was observed in the wetland during the May 2012 and October 2012 Caltrans field investigations. During the October 2021 fieldwork, a water table at 12 inches below the surface was observed. Wetland hydrology was supported by the perennial flows within the Mojave River providing a high-water table. The Mojave River wetland was vegetated with arroyo willow (*Salix lasiolepis*) and herbaceous species, which include cattails (*Typha angustifolia*), common reed (*Phragmites australis*), hard-stem club rush (*Schoenoplectus acutus*), and Olney's three-square bulrush (*Schoenoplectus americanus*). Soils observed in the wetland were mostly gravelly sand with redox features present. According to the Web Soil Survey (USDA NRCS 2021), the soil series mapped in the wetland is riverwash, which occurs in stream channels.

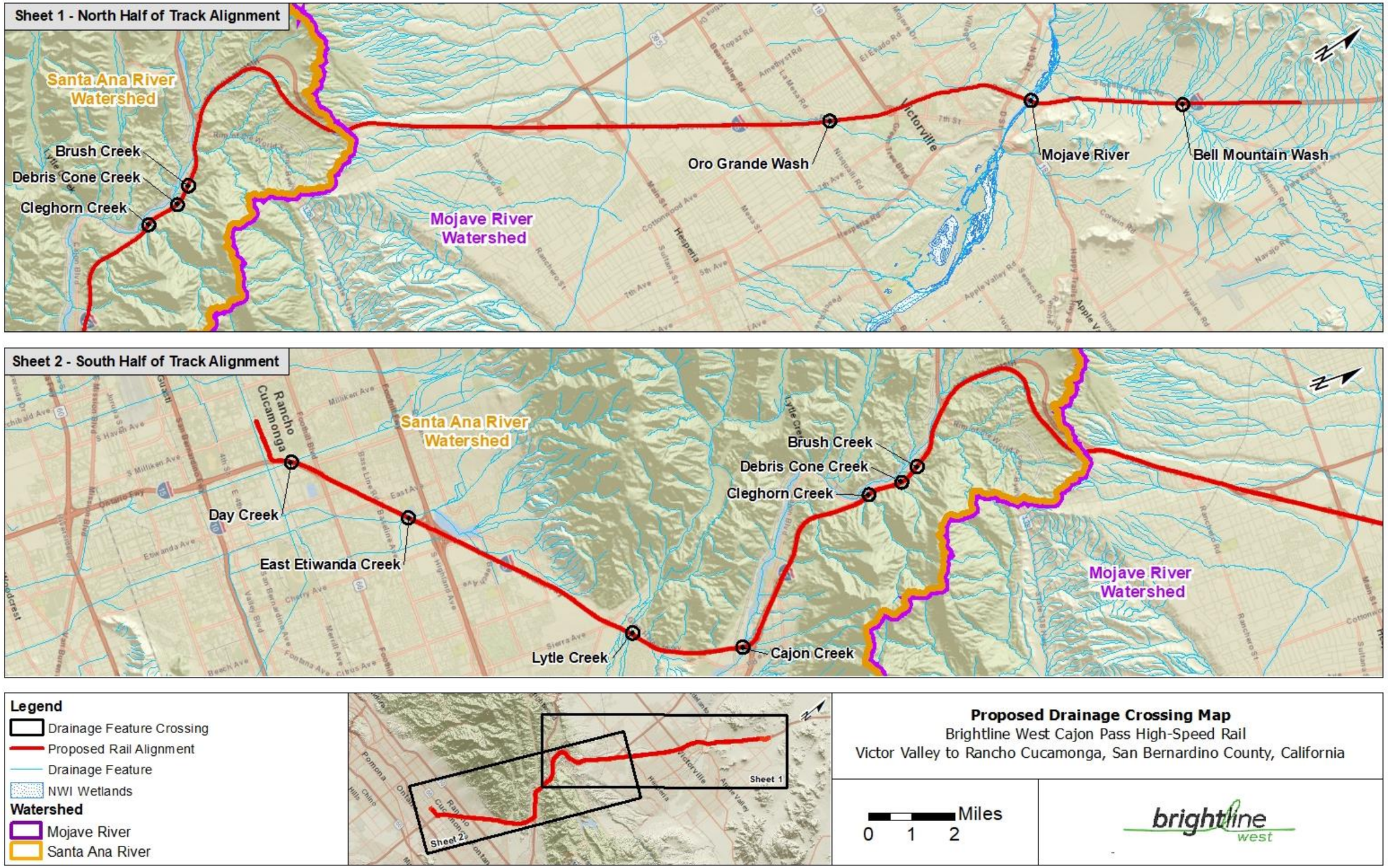

Figure 2. Proposed Drainage Crossing Map

5. Environmental Consequences and Mitigation

5.1. Proposed Action

5.1.1. Construction Effects

5.1.1.1. Railway

The Project rail alignment would cross 49 drainages, including the Mojave River (a perennial stream), and 48 ephemeral drainages. The Project would require construction of bridges over the Bell Mountain Wash, Mojave River (and the associated wetland), Oro Grande Wash, Brush Creek, Debris Cone Creek, Cleghorn Creek, Cajon Wash/Creek, Lytle Creek Wash, East Etiwanda Creek, and Day Channel.

Construction of at least seven bridges, over the Bell Mountain Wash, Mojave River, Brush Creek, Debris Cone Creek, Cleghorn Creek, Cajon Wash/Creek and Lytle Creek, would involve work in the OHWM. Placement of columns needed for those bridge spans may involve phased construction with flow diversion BMPs, such as gravel bag berms placed around the work areas during construction in the streambed. This would allow water to flow around the construction area and reduce potential for construction material to reach the waterway during a storm event. It would also keep the construction area dry. Staging, equipment storage, and stockpiling would occur outside the OHWM.

Temporary impacts on the resources listed above as well as the Mojave River wetland may include vegetation clearing to allow for construction of the bridge structures or to provide access for construction equipment. Some minor temporary fill or excavation may also occur; however, all temporary impacts will be restored on-site following construction.

The proposed bridges over Day Creek and East Etiwanda Creek would fully span the channels of those features, that is, bridge piers would not be placed in the channels. No construction work is proposed in the channels of Day Creek and East Etiwanda Creek. Oro Grande Wash is culverted at the proposed project crossing, so no construction work is expected at this crossing. No construction impacts are expected for these crossings.

For small drainages, the Project would utilize existing culverts for I-15 as much as possible to reduce the need of constructing additional culverts. Construction activities for bridge construction and extensions or modifications to the I-15 existing culverts may involve soil disturbance such as excavation, cutting/filling, stockpiling, and grading near the drainage features, which could result in temporary effects, including increased erosion, sedimentation, and runoff of construction pollutants into the drainages and surface waters. In the event that a storm event occurs during construction, construction-related sediments and contaminants could be transported to storm drainages or could enter aquatic resources.

The Project would avoid and minimize effects on the Mojave River wetland and other aquatic resources to the extent feasible during construction by developing and implementing BMPs and other measures described in Section 5.2 of this report.

Table 1 lists temporary disturbance areas for the proposed bridge structures including construction components such as clearing and grading, excavation, and fill. All temporarily disturbed areas will be returned to pre-construction conditions. Disturbance estimates shown in Table 1 are below the OHWM. For the Mojave River wetland, the Project would disturb approximately 0.72 acre of the wetland.

Table 1. Estimated Temporary Ground Disturbance Below OWHM

Crossing Name	Project Section	Temporary Ground Disturbance (acres)
Lytle Creek	3	4.55
Cajon Wash/Creek	3	1.11
Cleghorn Creek	2	0.57
Brush Creek	2	0.29
Mojave River	1	0.01
Bell Mountain Wash	1	0.11
	Total	6.64

5.1.1.2. Hesperia Station

No aquatic resources were identified in the study area for the proposed Hesperia station. Therefore, construction of the station would not affect aquatic resources.

5.1.1.3. Rancho Cucamonga Station

No aquatic resources were identified in the study area for the proposed Rancho Cucamonga station. Therefore, construction of the station would not affect aquatic resources.

5.1.2. Operation Effects

5.1.2.1. Railway

When complete, the Project would place new footings at the Mojave River, its associated wetland, and numerous other drainages along the 49-mile corridor. The Project would have no permanent impacts on the Mojave River but will have approximately 0.005 acre of permanent wetland impacts due to construction of new piers within the wetland. Total avoidance of the wetland was not possible so the Project could span over the Mohave River active channel. Piers in the wetland would be required to maintain and ensure structural integrity of the infrastructure.

Most of the drainage features in the study area would not be affected because the proposed bridge structures would span across the drainage features and would not place structures or permanent fill in the channels. However, the Project would result in permanent impacts on three other drainage features, Lytle Creek, Cajon Wash/Creek, and Debris Cone Creek, by installing bridge supports for the elevated structures below the OHWM. All crossings would result in less than 0.1 acre of permanent fill, as shown in Table 2.

In addition to bridge supports and structures, extensions or modifications to existing I-15 culverts for some drainage features would be needed to accommodate the proposed railway. For smaller drainage features, the Project proposes to convey flow by either extending existing piping or constructing a crossing structure. Modifications to existing culverts and proposed culverts, would be designed to maintain existing conveyance patterns and would not alter flow conditions or functions of the drainage features. The Project would not obstruct or alter the existing drainage flows throughout the study area and is not expected to alter the functions of the existing aquatic resources.

Table 2 shows the crossings with estimated areas of permanent fill below the OWHM. All other crossings, including the Mojave River, would not be permanently impacted as a result of the Project. For the Mojave River wetland, the Project would permanently impact approximately 0.005 acre of the wetland.

Table 2. Estimated Permanent Fill Below OHWM

Crossing Name	Project Section	Permanent Fill (acres)
Lytle Creek	3	0.02
Cajon Wash/Creek	3	0.02
Cleghorn Creek	2	0
Debris Cone Creek	2	0
Brush Creek	2	0
Mojave River	1	0
Bell Mountain Wash	1	0
	Total	4

5.1.2.2. Hesperia Station

No aquatic resources were identified in the study area for the proposed station in Hesperia. Therefore, operation of the station would not affect aquatic resources.

5.1.2.3. Rancho Cucamonga Station

No aquatic resources were identified in the study area for the proposed Rancho Cucamonga station. Therefore, construction of the station would not affect aquatic resources.

5.1.3. Cumulative Effects

Development within southwest San Bernardino County has reduced the amount and quality of aquatic resources over time. Cumulative effects on aquatic resources in the study area may result from development of future projects, including residential, commercial, industrial, and infrastructure projects, as well as agricultural development. Changes in land use can affect aquatic resources directly and indirectly by displacement and fragmentation of wetland

complexes and stream systems, alteration of hydrology and vegetation communities, and increased pollutants from runoff.

The Project would result in less than 0.1 acre of permanent impact on aquatic resources, and it would provide compensatory mitigation, if required, to meet Section 404 permit conditions. Additionally, the Project includes numerous avoidance and minimization measures and will comply with all permit requirements. Therefore, the Project would not contribute to the cumulative loss and degradation of aquatic resources.

5.2. Avoidance, Minimization and Mitigation Measures

The Project would avoid and minimize effects on aquatic resources, including wetlands, streams, and other drainage features, to the greatest extent feasible. However, total avoidance may not be possible due to design requirements and other constraints.

5.2.1. Design

The Project is being designed to avoid and minimize environmental impacts. The proposed rail alignment is restricted to existing transportation corridors. Most bridges would avoid permanent impacts below the OHWM of aquatic resources, avoiding effects on the Mojave River, as well as other drainage features. Where full spans over a drainage channel or a wetland cannot be achieved because of design constraints, the Project would be designed to minimize impacts by placing support structures above the OHWM or outside of a wetland as much as practicable.

5.2.2. Best Management Practices

During project construction, the contractor will implement BMPs to minimize impacts on aquatic resources. In addition, the Project will comply with all applicable conditions that result from the Clean Water Act Section 404 permit and Section 401 water quality certification.

5.2.2.1. Aquatic Resource Identification and Restoration

Requirements of the permits, agreements, and certifications will be implemented in the construction phase of the Project. A qualified biologist will be on site prior to and during construction of the Project to identify and protect aquatic resources. The biologist will define the boundaries of the aquatic resources and will supervise the placement of exclusion fencing to protect those areas during all project activities. Additionally, a silt fence around the construction areas adjacent to aquatic resources would protect the resources, including WOTUS, from runoff and spills associated with construction activities, if any.

Aquatic resources that are affected by construction activities (e.g., clearing, ground disturbance) will be restored with native vegetation after construction is complete. Restoration plans would be reviewed and approved by the applicable regulatory agencies. Monitoring efforts would be ongoing throughout the construction phase to ensure that all components of the compliance documents are adhered to during construction.

5.2.2.2. Temporary Erosion and Sediment Control

A TESC plan will apply to construction of the railway, stations, and maintenance facilities and will be employed to control erosion from disturbed areas. Standard erosion control BMPs, such as management, structural, and vegetative controls, would be identified in the TESC plan and will be implemented for all construction activities that expose soil. These BMPs would be selected to achieve maximum sediment removal and to represent the best available science and technology practicable. BMPs will be regularly inspected and maintained throughout construction. Some TESC BMPs for rail installation include but are not limited to:

- Installation of erosion control material consisting of silt fences along the outside limits of construction
- Implementing wind erosion control practices, as appropriate, on all stockpiled materials
- Stripping and transporting topsoil to stockpile for use in the restoration of temporary ground disturbances
- Preservation of existing vegetation as much as practicable.
- Establishment of native grass or other native vegetative cover on the construction site as soon as possible after disturbance. Non-native seeds or vegetation will not be used.
- Controlled erosion in disturbed areas by grading so that direct routes for conveying runoff to drainage channels are eliminated
- Compliance with all applicable conditions and mitigation requirements that result from the permits, certifications, and agreements

5.2.2.3. Stormwater Pollution Prevention Plan

Prior to beginning any construction activity, a SWPPP will be developed and implemented, thereby reducing the likelihood that stormwater would carry any sediments or spilled contaminants to drainages. The Project will comply with all applicable conditions and mitigation requirements that result from the permits, certifications, and agreements.

5.2.2.4. Spill Prevention, Control, and Countermeasure Plan

Prior to beginning any construction activity, a SPCC plan would be developed to reduce the potential for accidental chemical spills or releases of contaminants, including any non-stormwater discharge to drainage channels and outline measures to use in the case of a spill. SPCC plan BMPs may include but are not limited to:

- Inspecting the project site for spills daily; document spills weekly and before and after every rainfall event
- Having equipment and materials for cleanup of spills and leaks available on site; immediately cleaning up spilled or leaked material, and properly disposing of the material
- Protecting stockpiled materials

- Complying with all applicable conditions and mitigation requirements of permits, certifications, and agreements related to the Project.

If a spill is reportable, a superintendent would notify appropriate agencies and the contractor would take action to contact any other appropriate safety and cleanup crews to ensure the SPCC plan is followed. A written description of reportable releases would be submitted to the appropriate agency and would include a description of the release, including the type of material, an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent future releases.

5.2.3. Mitigation Measures

The Project would result in unavoidable permanent impacts on some aquatic resources. During the permitting process, Brightline West will work with the USACE to mitigate for permanent impacts on jurisdictional aquatic resources. Specific mitigation measures have not yet been developed because the jurisdictional determination of the aquatic resources in the study area has not been completed. Mitigation measures will be developed through coordination with Federal and state, if applicable, regulatory agencies and may include:

- Purchasing credits at USACE-approved mitigation banks
- Providing permittee-responsible mitigation

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