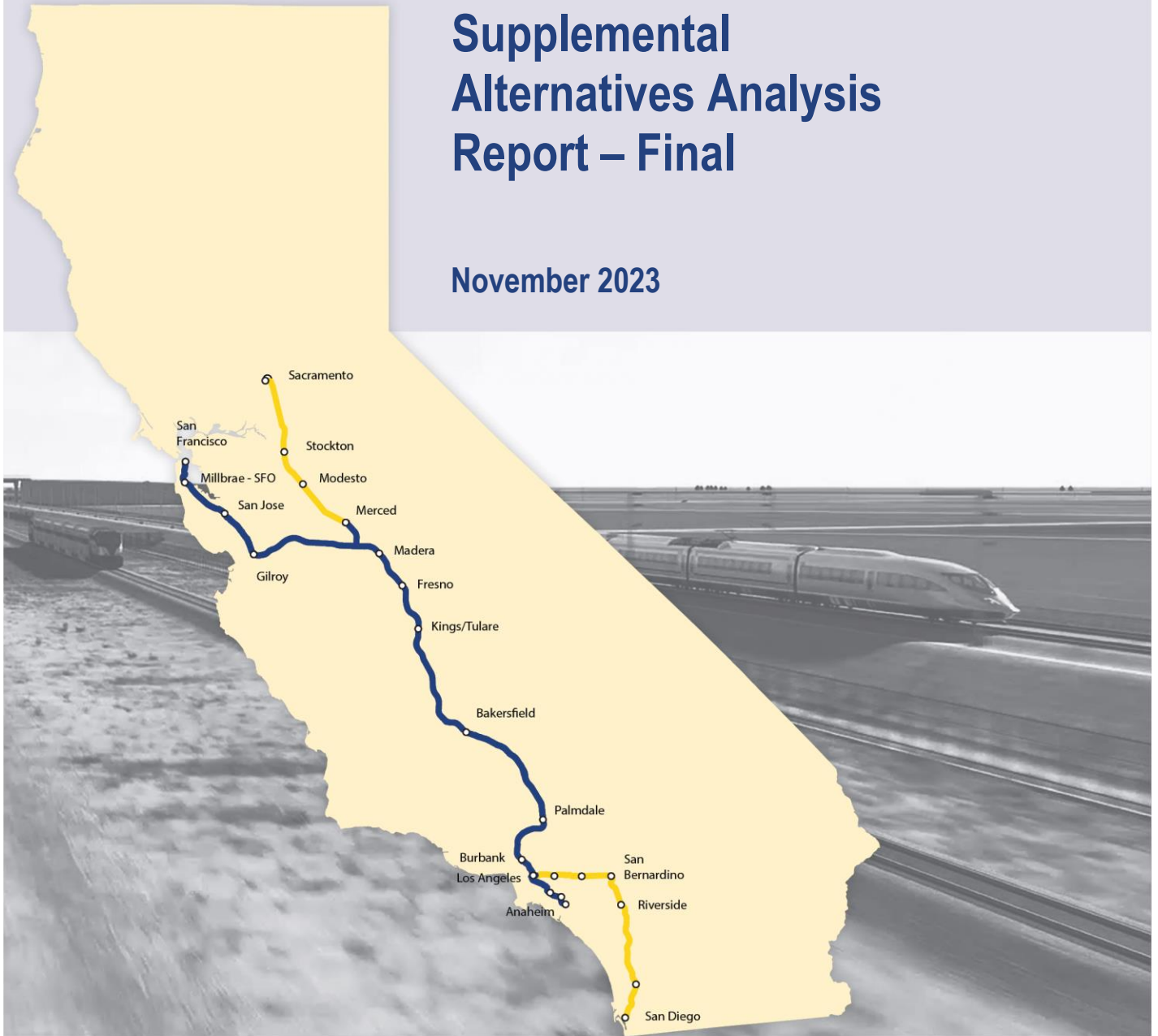


California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

Supplemental Alternatives Analysis Report – Final

November 2023



California High-Speed Rail Project



Los Angeles to Anaheim Project Section

SUPPLEMENTAL ALTERNATIVES ANALYSIS REPORT – FINAL

November 2023

Prepared By:



TABLE OF CONTENTS

SUMMARY	V
1 INTRODUCTION	1-1
1.1 California High-Speed Rail System	1-1
1.2 Los Angeles to Anaheim Project Section Background	1-2
1.3 Supplemental Alternatives Analysis Report – Purpose and Structure	1-4
1.4 Project Purpose and Need and Objectives	1-4
1.5 Agency and Community Outreach and Input	1-6
1.5.1 2018 High-Speed Rail Project Alternative	1-6
2 METHODOLOGY	2-1
2.1 Alternatives Evaluation Process	2-1
2.2 Evaluation Criteria	2-1
2.2.1 High-Speed Rail Performance Criteria and Design Objectives	2-1
2.2.2 Evaluation Measures	2-2
3 DESCRIPTION OF ALTERNATIVES	3-1
3.1 No Project Alternative	3-1
3.2 2018 High-Speed Rail Project Alternative	3-1
3.2.1 Lenwood Component	3-3
3.2.2 Colton Component	3-3
3.2.3 Maintenance Facility	3-6
3.2.4 Stations	3-6
3.2.5 Grade Crossings	3-7
3.2.6 Operations	3-10
3.2.7 Challenges to the 2018 High-Speed Rail Project Alternative	3-10
3.3 Shared Passenger Track Alternative	3-13
3.3.1 Maintenance Facility	3-13
3.3.2 Stations	3-13
3.3.3 Grade Crossings	3-14
3.3.4 Operations	3-14
3.4 3A – Freeway Tunnel Alternative	3-14
3.4.1 Maintenance Facility	3-18
3.4.2 Stations	3-18
3.4.3 Grade Crossings	3-18
3.4.4 Operations	3-18
3.5 3B – Union Pacific Railroad Alignment Alternative	3-18
3.5.1 Maintenance Facility	3-20
3.5.2 Stations	3-20
3.5.3 Grade Crossings	3-20
3.5.4 Operations	3-21
4 EVALUATION OF ALTERNATIVES	4-1
4.1 Project Alternative Comparison	4-1
4.2 Summary of Adverse Effects under the National Environmental Policy Act and Significant Impacts under CEQA	4-29
4.2.1 Traffic/Transportation	4-29
4.2.2 Air Quality/Greenhouse Gases	4-29
4.2.3 Noise/Vibration	4-30
4.2.4 Electromagnetic Interference/Electromagnetic Fields	4-30
4.2.5 Public Utilities and Energy	4-31

4.2.6	Biological and Aquatic Resources	4-31
4.2.7	Hydrology and Water Resources.....	4-32
4.2.8	Geology, Soils, Seismicity, and Paleontological Resources.....	4-33
4.2.9	Hazardous Materials and Wastes.....	4-33
4.2.10	Safety and Security	4-33
4.2.11	Socioeconomics and Communities	4-34
4.2.12	Station Planning, Land Use, and Development.....	4-34
4.2.13	Agriculture Farmland and Forest Land	4-34
4.2.14	Parks, Recreation, and Open Space	4-35
4.2.15	Aesthetics and Visual Quality	4-35
4.2.16	Cultural Resources	4-35
4.2.17	Section 4(f)/6(f).....	4-36
4.2.18	Environmental Justice	4-36
5	CONCLUSIONS.....	5-1
6	REFERENCES.....	6-1

Tables

Table 0-1	Los Angeles to Anaheim Project Section Alternatives	vi
Table 1-1	Previous Los Angeles to Anaheim Project Section Alternatives	1-4
Table 1-2	Objectives for the Proposed High-Speed Rail System	1-5
Table 1-3	Objectives for the Proposed Los Angeles to Anaheim High-Speed Rail Project Section	1-5
Table 2-1	Design Objectives and Criteria	2-2
Table 2-2	High-Speed Rail Alternatives Analysis Evaluation Measures	2-2
Table 3-1	Roadway Crossings.....	3-9
Table 3-2	Existing Roadway, Waterway, and Railroad Crossings	3-20
Table 4-1	Comparison of Los Angeles to Anaheim Project Section Alternatives.....	4-2
Table 4-2	Union Pacific Railroad Alignment (3B) Alternative Water Crossings	4-32

Figures

Figure 1-1	Los Angeles to Anaheim Project Section – Alternatives.....	1-3
Figure 3-1	Overview – 2018 High-Speed Rail Project Alternative	3-2
Figure 3-2	Lenwood Component Location Map	3-4
Figure 3-3	Colton Intermodal Facility Location Map	3-5
Figure 3-4	2018 High-Speed Rail Project Alternative At-Grade Crossings.....	3-8
Figure 3-5	Overview: 3A – Freeway Tunnel Alternative	3-16
Figure 3-6	Alternate Configuration Typical Cross Section	3-17
Figure 3-7	Overview: 3B – Union Pacific Railroad Alignment Alternative	3-19

ACRONYMS AND ABBREVIATIONS

AA	Alternatives Analysis
Amtrak	National Railroad Passenger Corporation
ARTIC	Anaheim Regional Transportation Intermodal Center
Authority	California High-Speed Rail Authority
BNSF	BNSF Railway
BNSF Components	Colton Intermodal Facility and Lenwood Staging Track Components
CEQA	California Environmental Quality Act
Colton Component	BNSF Colton Intermodal Facility Component
CWA	Clean Water Act
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMI/EMF	electromagnetic interference/electromagnetic fields
FRA	Federal Railroad Administration
HSR	High-Speed Rail
IAMF	impact avoidance and minimization feature
IMF	intermodal facility
LAUS	Los Angeles Union Station
Lenwood Component	BNSF Lenwood Staging Track Component
LMF	light maintenance facility
LOSSAN Corridor	Los Angeles – San Diego – San Luis Obispo Rail Corridor
Metrolink	Southern California Regional Railroad Authority
mph	miles per hour
NEPA	National Environmental Policy Act
project corridor	Los Angeles to Anaheim Project Section portion of the LOSSAN corridor
project section	Los Angeles to Anaheim Project Section
ROW	right-of-way
SAA	Supplemental Alternatives Analysis
Statewide Program EIR/EIS	<i>Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System</i>
UPRR	Union Pacific Railroad

SUMMARY

In November of 2018 the High-Speed Rail (HSR) Project Alternative was identified as the Preferred Alternative by the California High-Speed Rail Authority (Authority) Board, that should be further analyzed in an Environmental Impact Report (EIR)/Environmental Impact Statement (EIS). The HSR Passenger Rail Corridor (project corridor) would extend approximately 30 miles, between Los Angeles Union Station (LAUS) in Los Angeles and Anaheim Regional Transportation Intermodal Center (ARTIC) in Anaheim, primarily within a narrow, existing railroad corridor that is constrained by the surrounding urban environment and other existing rail operators in the area. This alignment is in a shared corridor with multiple owners, including BNSF Railway (BNSF), Los Angeles County Metropolitan Transportation Authority, and Orange County Transportation Authority. Existing rail operators include BNSF (freight) and passenger rail providers National Railroad Passenger Corporation (Amtrak), Southern California Regional Railroad Authority (Metrolink), and Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor) Agency. In coordination with BNSF, it was determined in February 2019 that HSR construction would necessitate additional staging tracks at BNSF’s facility in San Bernardino County in the unincorporated area of Lenwood if freight rail performance during HSR construction and operational resiliency along the project corridor are intended to be maintained. Similarly, it was determined that HSR operations would require the construction of a new intermodal facility (IMF) in Colton.

Interested party feedback on the BNSF Colton IMF Component (Colton Component) received following the Authority’s revised scoping in 2020 raised substantial opposition to and concern for introducing a new IMF far outside the project corridor. In particular, interested parties in the Inland Empire expressed concerns about the Colton Component’s impacts with the added concern that the benefits of HSR and its associated improvements would not reach them. In addition, BNSF’s support of the 2018 HSR Project Alternative has waned and it may no longer agree to operate the Colton Component. For these reasons, the Authority is considering additional alternatives that could eliminate the need to redirect trains and trucks to a new IMF in San Bernardino County. As such, the Authority prepared this Supplemental Alternatives Analysis (SAA) to evaluate potential alternatives that would address the project’s purpose and need and be responsive to concerns expressed about the 2018 HSR Project Alternative.

This Los Angeles to Anaheim Project Section (project section) 2023 SAA evaluates five alternatives, including a No Project Alternative, and recommends at least one additional alternative with multiple options to be carried forward for further refinement and evaluation within a Tier 2, project-level EIR/EIS. The 2023 SAA evaluates the No Project Alternative and the 2018 HSR Project Alternative and introduces three new alternatives: the Shared Passenger Track Alternative, 3A – Freeway Tunnel Alternative, and 3B – Union Pacific Railroad (UPRR) Alignment Alternative.

Under the No Project Alternative, the project section would not be built. The No Project Alternative includes all currently known programmed and funded improvements to the intercity transportation system (highway, Amtrak, and regional rail) and reasonably foreseeable local land development projects (with funding sources identified) that would be developed by 2040 in the project section area. This alternative would not benefit from the funding the Authority would provide for Early Action Projects, such as grade separations.

The 2018 HSR Project Alternative alignment follows the project corridor and stations (LAUS, Norwalk/Santa Fe Springs, Fullerton, and ARTIC).¹ It would also include staging tracks in Lenwood (Lenwood Component) and the Colton Component, both for BNSF operations. The 2018 HSR Project Alternative can accommodate four HSR trains per hour per direction between LAUS and ARTIC.

The Shared Passenger Track Alternative would follow the same alignment as the 2018 HSR Project Alternative but would not include the Colton Component. Compared to the 2018 HSR Project Alternative, this alternative would reduce HSR train operations to two HSR trains per hour in each direction between LAUS and ARTIC. The Shared Passenger Track Alternative would include either

¹ It was never determined whether both Norwalk/Santa Fe Springs and Fullerton Stations or only one intermediate station would be constructed.

one or no intermediate station (Fullerton, Norwalk/Santa Fe Springs, or both) between LAUS and ARTIC. In contrast to the 2018 HSR Project Alternative, the proposed staging tracks outside the project corridor would be provided as mitigation for freight rail performance impacts resulting from HSR construction.

The 3A – Freeway Tunnel Alternative would generally follow the 2018 HSR Project Alternative alignment but would be primarily within a tunnel. It would not include an intermediate station or any of the BNSF Components. This alternative could have four HSR trains per hour per direction in the peak hours and two HSR trains per hour in each direction in the off-peak hours HSR trains between LAUS and ARTIC.

The 3B – UPRR Alignment Alternative would run from LAUS to ARTIC, but it would follow the UPRR alignment approximately 33 miles south of the project corridor. It would not include an intermediate station or any of the BNSF Components. This alternative could have four HSR trains per hour per direction in the peak hours and two HSR trains per hour in each direction in the off-peak hours between LAUS and ARTIC.

Table 0-1 Los Angeles to Anaheim Project Section Alternatives

Description	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Corridor length (miles)	33	33	29.7	33
ROW owned by BNSF (miles) ¹	22 ²	22 ³	1.8	1.8
ROW owned by UPRR (miles)	0	0	0	18
Tunnel (miles)	0	0	23.6	8.3
At grade (miles)	29.9	29.9	6.1	19.9
Trench/cut and cover (miles)	0.6	0.6	0	0.9
Aerial (miles)	2.5	2.5	0	3.88
Maximum speed range (mph)	45–90 mph	45–90 mph	79–150 mph	79–110 mph
HSR stations	3-4	2-3	2	2
Construction Costs (2023 dollars in billions) ⁴	\$9.17 ⁵	\$6.65–6.91 ^{6,7}	\$31.06	\$18.62

¹ All alternatives require relocation of BNSF storage tracks from the West Bank of the Los Angeles River to the Hobart Yard area.

² Total ROW owned by BNSF does not include the total area in Lenwood and Colton

³ Does not include staging tracks.

⁴ Total cost is an estimate, including a light maintenance facility, in 2023 dollars (billions). Further analysis is required to determine exact total cost.

⁵ Cost estimates include the costs for the Lenwood Component and the Colton Component, which are in Quarter 2 2020\$. Cost estimates were prepared by Trans Systems in 2020 and AECOM, who were a subconsultant to BNSF, and escalated to 2023 dollars by the Authority.

⁶ This estimate includes staging tracks.

⁷ This range of cost reflects whether a station in Norwalk/Santa Fe Springs, Fullerton, or neither is built.

BNSF = BNSF Railway; HSR = high-speed rail; mph = miles per hour; ROW = right-of-way; UPRR = Union Pacific Railroad

The 2018 HSR Project Alternative would meet the evaluation criteria but would result in the most property acquisitions and relocations and the highest railroad and utility disruptions, displacements, and impacts on natural resources. The Shared Passenger Track Alternative better meets the Authority's evaluation criteria as set forth below than the 2018 HSR Project Alternative, primarily due to revised train operations, the removal of the Colton Component, and elimination of the impacts associated with this component. Additionally, this alternative has potential to reduce operating costs due to a reduced fleet size and the potential to share maintenance expenses with other rail services and operators within the corridor.

The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would have fewer surface impacts on some resources, such as cultural resources, parks, Section 4(f) resources, and aesthetics, than the 2018 HSR Project Alternative and Shared Passenger Track Alternative. However, the increase in equipment and haul trucks required to build the tunnels and viaducts for both the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives, and associated air quality and traffic impacts, would be greater than the reduction associated with the removal of the BNSF Components and the intermediate station. In addition, the increase in activity near the tunnel openings could potentially result in localized health effects and a greater impact during construction than the 2018 HSR Project and Shared Passenger Track Alternatives. These options could also be more costly during construction and reduce ridership potential and transit-oriented development potential because of the reduced number of stations and other transit connectivity. Operational costs would likely be higher than the Shared Passenger Track Alternative given the additional maintenance cost associated with tunnel systems. As a result, 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would have difficulty meeting project goals and evaluation criteria and will not be considered beyond this document.

The 2018 HSR Project Alternative and Shared Passenger Track Alternative have been determined to be the best candidates to be further analyzed in an EIR/EIS based on the evaluation criteria, previously identified environmental impacts, and feasibility of implementation. Overall, based on current, known information, the Shared Passenger Track Alternative would meet the evaluation criteria objectives better than the other alternatives by having the most moderate impacts on the environment, existing railroad operations, and communities. Therefore, the Shared Passenger Track Alternative will be further analyzed within the EIR/EIS for the Los Angeles to Anaheim Project Section. Future analysis of the Shared Passenger Track Alternative will include which intermediate (Norwalk/Santa Fe Springs or Fullerton) station, if any, will be constructed; the location and size of the light maintenance facility (LMF); and the evaluation of possible sites to mitigate potential impacts on freight rail of any proposed alternative.

1 INTRODUCTION

The Authority is assessing alternatives for the project section to determine reasonable alternatives that merit detailed study within the project-level environmental document.

An Alternatives Analysis (AA) Report was issued for the Los Angeles to Anaheim Project Section in April 2009 (Authority 2009). This AA included three build alternatives, of which the Dedicated HSR Alternative was chosen to advance to preliminary design and environmental review. The 2010 SAA Report was released in response to modifications to the alternatives and design options that were made as coordination with local cities and agencies progressed and additional engineering detail became available throughout 2009 and 2010 (Authority 2010). Since the 2010 SAA Report, additional comments have been received from interested parties and the public.

The 2016 SAA Report presented the changes that had been made in response to comments and new technical developments including the emphasis in the Revised 2012 Business Plan, 2014 Business Plan, and Draft 2016 Business Plan, on phased implementation of the HSR System as a whole, and on implementation of a blended system that meets the goal of providing a one-seat ride from San Francisco to Los Angeles and Anaheim (Authority 2012, 2014, 2016). The 2016 SAA Report identified the 2018 HSR Project Alternative to be evaluated in an EIR/EIS. This alignment is within a shared corridor with a freight and multiple passenger rail operators, such as BNSF, Los Angeles County Metropolitan Transportation Authority, Orange County Transportation Authority, and Amtrak. In coordination with BNSF, it was determined that HSR construction would necessitate the construction of additional staging tracks at BNSF's facility in the unincorporated area of Lenwood within San Bernardino County (Lenwood Component). In addition, it was determined that HSR operations would require the construction of a new IMF in Colton (Colton Component) (see Appendix B, Los Angeles to Anaheim Project Section BNSF Intermodal Facility and Staging Tracks Site Selection Report).

In 2020, the Authority conducted revised scoping to garner additional public and agency input for the BNSF Components (Colton Component and Lenwood Component). Early interested party feedback on the Colton Component raised substantial opposition and concern to introducing a new IMF far outside the project corridor. In particular, interested parties in the Inland Empire expressed concerns about the Colton facility's impacts with the added concern that the benefits of HSR and its associated improvements would not reach them. Interested party opposition is documented with the Summer 2020 Agency and Public Scoping Meetings Series Summary Report (Appendix A) and summarized within Section 3.2.7 below.

Responding to these concerns, the Authority is considering additional potential alternatives, evaluated within this SAA, that would eliminate the need to redirect trains and trucks to a new BNSF IMF in San Bernardino County. To maintain reliability and freight and passenger rail service, staging tracks were identified as mitigation for some alternatives during project construction. This 2023 SAA Report introduces three new alternatives to address the project's purpose and need and respond to concerns expressed on the 2018 HSR Project Alternative: the Shared Passenger Track Alternative, 3A – Freeway Tunnel Alternative, and 3B – UPRR Alignment Alternative. These three new alternatives are considered along with the No Project Alternative and the existing 2018 HSR Project Alternative. An overview of the alternatives is shown on Figure 1-1.

1.1 California High-Speed Rail System

The California HSR System is planned to provide intercity HSR service on over 800 miles of track throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The HSR system is envisioned as a state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including state-of-the-art safety, signaling, Automatic Train Control, and Positive Train Control. The trains would be capable of operating at speeds of over 200 miles per hour (mph) along a mostly grade-separated alignment, with an expected nonstop travel time between LAUS and San Francisco of 2 hours and 40 minutes.

The HSR system is to be planned, designed, built, and operated under the direction of the Authority, a nine-member state governing board formed in 1996. The Authority's statutory mandate is to

develop an HSR system that is coordinated with the state's existing transportation network, including intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports.

1.2 Los Angeles to Anaheim Project Section Background

The Los Angeles to Anaheim Project Section of the HSR system would extend approximately 30 miles, starting at LAUS and continuing south to ARTIC in Anaheim. This corridor runs through a narrow and constrained urban environment, shared by other rail operators, including trains run by Amtrak, Metrolink, LOSSAN Corridor Agency, UPRR, and BNSF.

The Authority, in cooperation with the Federal Railroad Administration (FRA), completed the *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System (Statewide Program EIR/EIS)* in November 2005 (Authority and FRA 2005), which included the analysis and identification of alignment and station locations throughout the state. Following a review of a range of alternatives to meet the growing demand for intercity travel in California, the HSR system alternative was identified as the environmentally preferred alternative under the National Environmental Policy Act (NEPA) and as the environmentally superior alternative under the California Environmental Quality Act (CEQA). At the conclusion of the environmental process for the Statewide Program EIR/EIS, the Authority and FRA selected corridor alignments and station locations to carry forward for more detailed analysis in project-level environmental studies. The Authority and FRA selected the project corridor, with a goal of sharing the existing right-of-way (ROW), as the alignment for this section for further study in a project-level environmental document. The corridor is used by multiple public and private operators and is governed by the LOSSAN Corridor Agency, a joint powers authority staffed by the Orange County Transportation Authority.

The Authority and FRA also selected station locations at LAUS, Norwalk/Santa Fe Springs, Anaheim, and Irvine to study further as part of the project section project-level environmental document. In March 2007, the publicly circulated CEQA Notice of Preparation and the FRA's NEPA Notice of Intent stated that the Los Angeles to Orange County project-level environmental document would only consider HSR service between LAUS and Anaheim. HSR service beyond Anaheim to Irvine may be considered separately in the future.

The Authority and FRA initiated project-level environmental review for the project section in 2007, engaged in project scoping, and completed a preliminary AA Report in 2009, SAA Report in 2010, and SAA Report in 2016.

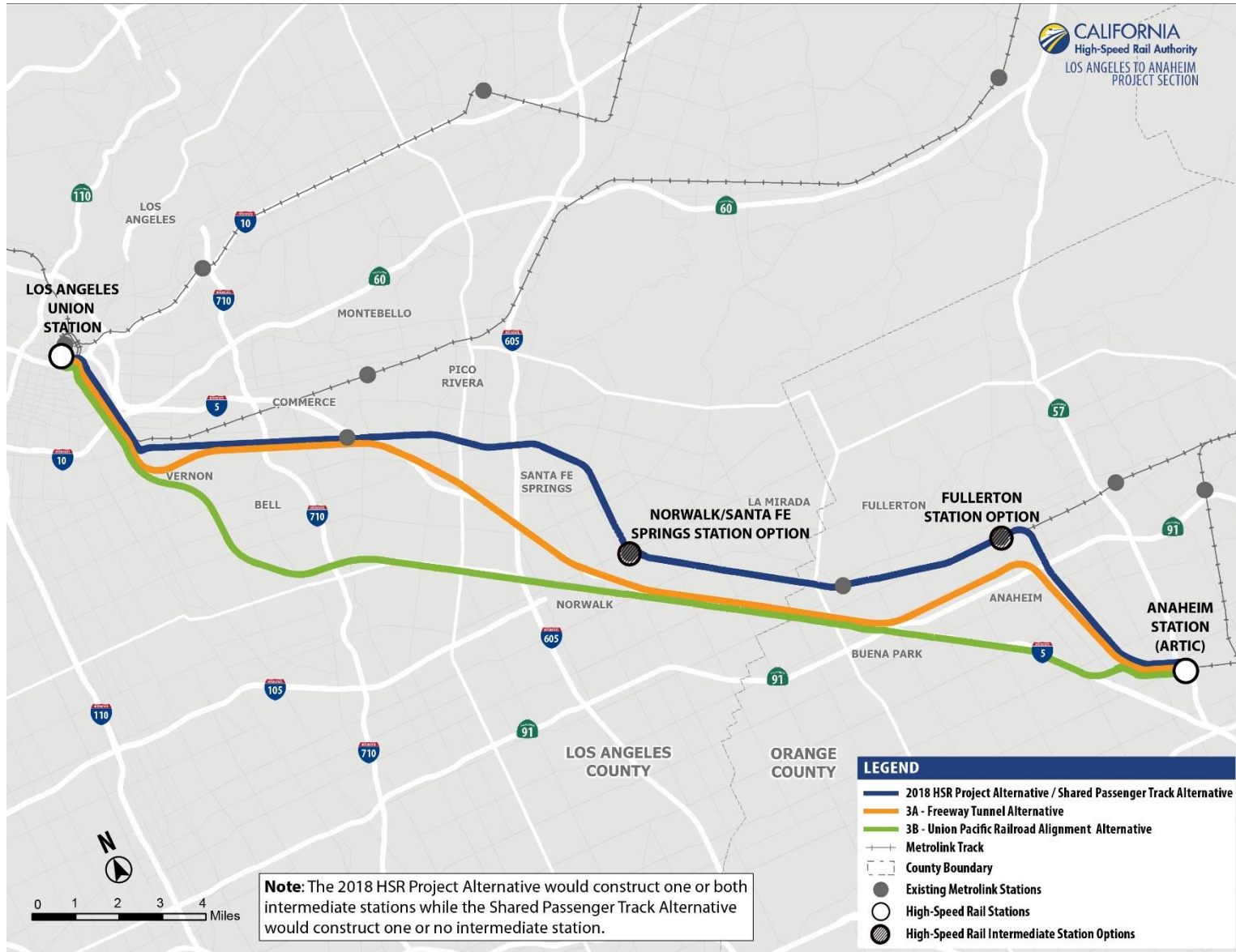


Figure 1-1 Los Angeles to Anaheim Project Section – Alternatives

The conceptual track alignment configuration defined in the Statewide Program EIR/EIS consisted of two tracks for passenger rail services and two tracks for freight between Los Angeles and Fullerton. South of Fullerton the alignment was proposed to be two shared tracks for HSR, conventional passenger rail operations, and occasional freight trains.

The 2009 AA for this corridor analyzed Dedicated (six-track), Expanded Shared-Track (five-track), and Program-Level Shared-Track (four-track) Alternatives. A station option at Fullerton was added and analyzed in the 2009 AA. As mentioned above, the Authority is not currently considering HSR service beyond Anaheim to Irvine and therefore it was not considered in the 2009 AA Report. The 2009 AA advanced the Dedicated Alternative for further analysis and dropped the Expanded Shared-Track and Program-Level Shared-Track Alternatives.

The 2010 SAA accounted for changes in design criteria and refined the Expanded Shared-Track Alternative (renaming it the Consolidated Shared-Track Alternative) to be analyzed alongside the Dedicated Alternative. Both alternatives were advanced.

The 2016 SAA evaluated the goals, objectives, and design constraints of Alternative 1, formerly known as the Dedicated High-Speed Train Alternative, and Alternative 2, formerly known as the Consolidated Shared-Track Alternative. Alternative 1 was eliminated in the 2016 SAA; Alternative 2 was advanced forward for further analysis and is now known as the 2018 HSR Project Alternative. Table 1-1 provides a summary of the alignment and station options introduced, evaluated, eliminated, or carried forward through the alternatives analysis process.

Table 1-1 Previous Los Angeles to Anaheim Project Section Alternatives

Option	Introduced	Eliminated or Carried Forward
Alignment Options		
Alternative 1	2009 AA	Eliminated in the 2016 SAA
Alternative 2	2010 SAA	To be carried forward
Station Options		
LAUS	2009 AA	To be carried forward
Norwalk/Santa Fe Springs	2009 AA	To be carried forward
Fullerton	2009 AA	To be carried forward
ARTIC	2009 AA	To be carried forward

AA = Alternatives Analysis; ARTIC = Anaheim Regional Transportation Intermodal Center; LAUS = Los Angeles Union Station; SAA = Supplemental Alternatives Analysis

1.3 Supplemental Alternatives Analysis Report – Purpose and Structure

This 2023 SAA Report uses preliminary planning, environmental, and engineering information to identify a reasonable range of alternatives for further refinement and evaluation in the environmental review process. This 2023 SAA Report documents the application of project evaluation criteria to recommend which alternatives should be carried forward and which alternatives should not be carried forward.

Chapter 2, Methodology, describes the process used to evaluate alternatives within this 2023 SAA Report. Each of the project alternatives is described in detail and evaluated in Chapter 3, Description of Alternatives.

1.4 Project Purpose and Need and Objectives

The Authority's purpose is to plan, build, and operate an HSR system coordinated with California's existing transportation network. This would increase access and mobility, provide better connections, and close existing gaps among regional rail, transit commuter rail, intercity rail and bus lines, highways, and airports. This SAA Report compares the proposed alternatives against the Authority's

adopted purpose and need as described in the Statewide Program EIR/EIS and provided in the objectives below.

The purpose of the statewide HSR system is to provide a reliable high-speed electric-powered train system that links the major metropolitan areas of the state and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network, and to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California’s unique natural resources (Authority and FRA 2005). Table 1-2 presents the objectives for the proposed HSR system.

Table 1-2 Objectives for the Proposed High-Speed Rail System

Objectives for the Proposed High-Speed Rail System
Provide intercity travel capacity to supplement critically overused interstate highways and commercial airports.
Meet future intercity travel demand that present transportation systems will not meet and increase capacity for intercity mobility.
Maximize intermodal transportation opportunities by locating stations in areas with good access to local mass transit or other modes of transportation.
Improve the intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel.
Provide a sustainable reduction in travel time between major urban centers.
Increase the efficiency of the intercity transportation system.
Reduce potential impacts on communities and the environment by having the alignment follow existing transportation or utility corridors to the extent feasible.
Develop a practical and economically viable transportation system that can be implemented in phases and generate revenues in excess of operations and maintenance costs.
Provide intercity travel in a manner that minimizes urban sprawl, is sensitive to and protective of the region’s natural resources, and reduces emissions and vehicle miles traveled for intercity trips.
Preserve wildlife corridors and mitigate potential impacts on wildlife movement where feasible to limit the extent to which the system may present an additional barrier to wildlife’s natural movement.

Source: Authority and FRA, 2005

The project section would provide predictable and consistent travel times between major urban centers and connectivity to airports, mass transit, and the highway network within the Los Angeles-Orange Counties metropolitan region and would connect to the rest of the system. Table 1-3 presents the objectives for the Proposed LA-A HSR Project Section.

Table 1-3 Objectives for the Proposed Los Angeles to Anaheim High-Speed Rail Project Section

Objectives for the Proposed Los Angeles to Anaheim High-Speed Rail Project Section
Improve mobility by relieving the mounting capacity and congestion constraints on I-5 and surrounding freeways through providing a choice of high-speed train transportation mode.
Improve mobility by relieving the capacity and congestion constraints at Los Angeles International Airport, other Los Angeles area airports, and the John Wayne Airport in Orange County, through providing a choice of a high-speed train transportation mode.
Reduce the capacity constraints and congestion on freight and passenger rail infrastructure along the LOSSAN Corridor.

Objectives for the Proposed Los Angeles to Anaheim High-Speed Rail Project Section

Maximize connectivity and accessibility for passenger rail and transit at HSR stations.

Provide a sustainable reduction in travel time between Los Angeles and Anaheim.

Provide a high-speed rail alignment that is feasible in terms of engineering challenges and right-of-way constraints.

Minimize disruptions to neighborhoods and communities along the corridor by minimizing right-of-way acquisitions, project design effects, and/or potential for affecting community resources.

Preserve environmental quality and protect sensitive environmental resources by reducing emissions and vehicle miles traveled for intercity trips in Los Angeles and Orange Counties.

Maximize the ridership/revenue potential for Los Angeles and Orange Counties by providing reliable high-speed rail operation.

Minimize capital and operation costs related to construction, operations, and maintenance of the Los Angeles to Anaheim Project Section of the High-Speed Rail System.

Source: Authority and FRA, 2010

ARTIC = Anaheim Regional Transportation Intermodal Center; I = interstate; LAUS = Los Angeles Union Station; LOSSAN Corridor = Los Angeles – San Diego – San Luis Obispo Rail Corridor

1.5 Agency and Community Outreach and Input

1.5.1 2018 High-Speed Rail Project Alternative

The project section proposes to use the existing project corridor, traveling through the cities of Los Angeles, Vernon, Commerce, Montebello, Bell, Pico Rivera, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, and Anaheim. The Authority has a long history of working collaboratively with the corridor cities, agencies, and interested parties in the project area and region.

The project corridor cities in Los Angeles County (Vernon, Commerce, Bell, Montebello, Pico Rivera, Norwalk, Santa Fe Springs and La Mirada) are considered part of the Gateway Cities and often partner via the Gateway Cities Council of Governments to speak with a shared voice on large infrastructure projects. The corridor cities have historically expressed concerns related to the number of freeway expansion projects and active freight/PRCs that bisect their cities. They were instrumental in the Authority's decision to develop a shared-track alternative for the project section and strong supporters of minimizing the project footprint to stay within the existing railroad ROW.

As a result of the proposed HSR project, impacts on freight rail facilities within in the corridor are anticipated. To not disrupt the operations of BNSF, the Authority introduced two new project components revised in summer 2020, the Colton Component and the Lenwood Component (collectively, the BNSF Components). These two components would potentially help streamline rail operations, locating some goods movement operations closer to where they would connect to other parts of the country for transport. Notably, the proposed sites are roughly 60 and 110 miles away from the main project section corridor.

Following the introduction of the BNSF Components, the Authority continued ongoing coordination and technical work with BNSF while engaging in agency and interested party discussions. The feedback received both as a result of scoping and subsequent outreach indicated substantial concerns and opposition specific to the Colton Component (see Section 3.2.7). Interested party opposition combined with BNSF's changing interests resulted in the Authority considering alternatives in the project section corridor that would eliminate the need for the Colton Component.

2 METHODOLOGY

2.1 Alternatives Evaluation Process

The purpose of this section is to evaluate the impacts and feasibility of the rail alternatives for the project section. This SAA will evaluate three new alternatives, as well as the current Project Alternative that includes the BNSF Components. This effort follows a defined alternative analysis process as described in the *Technical Memorandum: Alternatives Analysis Methods for Project EIR/EIS*, Version 3, adopted January 2011 (Authority 2011) and *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Version 5.10, adopted in June 2020 (Authority 2020).

2.2 Evaluation Criteria

The alternatives considered in this SAA were evaluated based on criteria that include the criteria and examples listed below:

- Project Purpose and Need
- Project objectives
- HSR AA evaluation measures (such as travel time and consistency with other planning efforts)
- ROW needs and operational feasibility
- Land use impacts (such as consistency with land use and general plans)
- Constructability (such as track type construction and access to the corridor)
- Community impacts (including displacements and relocation impacts)
- Natural resource impacts (such as impacts on wetlands, potential threatened and endangered species and habitat, cultural resources, Important Farmlands, and parks and recreational resources)
- Public and interested party input (such as support from public agencies)
- Regulatory feasibility per NEPA and CEQA and viability under Clean Water Act (CWA) Section 404 to determine alternatives that merit further analysis and those that may be eliminated from further consideration. Alternatives will be eliminated from further consideration if they are neither reasonable nor feasible. Major issues that could result in an alternative being dropped include:
 - Alternative has environmental or engineering issues that would make approvals or implementation infeasible.
 - Alternative would reduce or avoid adverse environmental impacts.
 - Alternative does not meet Business Plan objectives.
 - Alternative is substantially similar to other alternatives recommended for study but offers no substantial environmental advantage.

2.2.1 High-Speed Rail Performance Criteria and Design Objectives

Along with the purpose and need, project alternatives are evaluated using system performance criteria that address design differences and qualities, along with meeting the goals of the 2016 Business Plan. Design objectives and criteria are described in Table 2-1.

Table 2-1 Design Objectives and Criteria

Objective	Criteria	Source
Maximize ridership/revenue potential	Travel time Population and employment catchment	Proposed alternatives, census data
Maximize connectivity and accessibility	Intermodal connections	Existing conditions in potential station areas, existing and proposed infrastructure
Minimize operating and capital costs	Estimated total capital costs Estimated right-of-way costs Estimated operational costs such as travel time, number of trainsets Estimated maintenance costs based on alignment length and type of track profile (such as tunnel, below grade, aerial, elevated, or at grade)	Proposed alternatives, Google Earth and existing terrain, service plans

Source: Authority, 2011

2.2.2 Evaluation Measures

In addition to the HSR objectives and criteria above, measures to evaluate and compare the project alternatives in terms of anticipated environmental impacts and potential feasibility constraints are described in Table 2-2. Where it is possible to quantify the measure, estimates are provided, and where it is not possible to quantify effects, qualitative assessments are provided.

Table 2-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method	Source
Construction of the alternatives is feasible in terms of engineering challenges and right-of-way constraints as measured by:		
Constructability, access for construction, within existing transportation or public ROW	Extent of feasible access to alignment for construction	Proposed alternatives, Google Earth and property limits, existing electrical infrastructure
Minimize disruption to existing railroads	Right-of-way constraints and impacts on existing railroads	Conceptual design plans and maps
Minimize disruption to and relocation of utilities	Number and type of utilities crossed, (gravity/pressure, private or public owned)	Conceptual design plans and maps
Land use supports transit use and is consistent with existing adopted local, regional, and State plans, and is supported by existing or future growth areas as measured by:		
Development potential for Transit Oriented Development (TOD) within walking distance of station	Identify existing and proposed land uses within 0.5-mile of station locations. Identify if there are TOD districts, TOD overlay zones, mixed use designations, or if local jurisdictions have identified station areas for redevelopment or economic development	Regional and local planning documents and land use analysis and input from local planning agencies
Maximize compatibility with existing and planned development	Land use compatibility Visual environment compatibility	Land use data, existing plans, zoning ordinances and regulations and input from local jurisdictions, existing visual conditions

Measurement	Method	Source
Minimizes disruption to neighborhoods and communities – extent to which an alternative minimizes right-of-way acquisitions, minimizes dividing an established community and minimizes conflicts with community resources.		
Displacements	Number of properties by land use type that would be displaced or acres of land by land use type	Conceptual design plans, aerial photographs, zoning maps, and General Plan maps.
Property with access affected	Number of properties where access is affected and to what extent.	Conceptual design plans and aerial photographs.
Minimizes impacts on environmental resources - extent to which an alternative minimizes impacts on natural resources are measured by:		
Waterways and wetlands and natural preserves or biologically sensitive habitat areas affected	Identify new rail bridge crossings required; rough estimate of acres of wetlands and waters, width of waterways crossed; acres of threatened and endangered habitat affected; acres of natural areas/critical habitat affected; presence of listed species	Conceptual design plans and GIS layers; Section 404(b)1 analysis
Minimize impacts on cultural resources	Archaeological resources Historic resources Tribal resources potentially affected	Based on conceptual design plans, aerial photographs, and GIS layers; cultural resource records search and surveys
Parklands	Estimate number and acres of parks that could be directly and indirectly affected. This would also include major trails that would be crossed.	Conceptual design plans, GIS layers, city, county and park districts planning documents, and aerial photography
Agricultural lands	Estimate acres of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance within preliminary limits of disturbance.	Conceptual design plans and GIS layers
Enhances environmental quality — extent to which an alternative minimizes impacts on the natural and urban environment as measured by:		
Noise and vibration effects on sensitive receivers	Identify types of land use activities that would be affected by high-speed rail pass-by noise and ground vibration.	Results of screening level assessment; inventory of potential receivers from site survey and aerial maps
Change in visual/scenic resources	Identify number of local and scenic corridors crossed and scenic/visual resources that would be affected by high-speed rail elevated structures in scenic areas and shadows on sensitive resources (parks). Identify locations where residential development is in close proximity to elevated high-speed rail structures.	Result of general assessment; survey of alignment corridors and planning documents from local, State and regional agencies.

Measurement	Method	Source
Natural Environment		
Maximize avoidance of areas with geological and soils constraints	Potential direct impacts on sensitive geologic and soils areas	United States Geological Survey maps and available GIS data; CA Dept. of Conservation's California Geological Survey, Regional Geologic Hazards & Mapping Program, check Map Index to identify maps appropriate for high-speed rail sections
Maximize avoidance of areas with potential hazardous material	Potential direct impacts on areas containing hazardous materials or wastes	Data from previous records search conducted for other projects within study area.

Source: Authority, 2011

CA = California; Dept. = Department; GIS = geographic information system; ROW = right-of-way; TOD = transit-oriented development

3 DESCRIPTION OF ALTERNATIVES

3.1 No Project Alternative

Under the No Project Alternative, the project section would not be built. The No Project Alternative includes development projects for the region as well as existing and planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems in the project section area. The No Project Alternative represents the condition of the project section as it existed in 2015, and as it would exist without the HSR system at the horizon year (2040).²

The No Project Alternative assumes that all currently known programmed and funded improvements to the intercity transportation system (highway, Amtrak, and regional rail) and reasonably foreseeable local land development projects (with funding sources identified) would be developed by 2040. The No Project Alternative is based on a review of regional transportation plans for all modes of travel (SCAG 2020), the *State Transportation Improvement Program* (Caltrans 2022), the *Federal Transportation Improvement Program* (SCAG 2021), Metrolink’s *Strategic Business Plan* (Southern California Regional Rail Authority 2021), LOSSAN Business Plan (LOSSAN Corridor Agency 2021), transportation plans and programs for Los Angeles and Orange Counties, airport master plans, and city and county general plans.

Analysis of all build alternatives includes the No Project Alternative as the baseline against which environmental impacts are measured.

3.2 2018 High-Speed Rail Project Alternative

The 2018 HSR Project Alternative was approved by the HSR Board as the Preferred Alternative in 2018. The 2018 HSR Project Alternative would operate through several major cities, including Los Angeles, Vernon, Commerce, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Santa Fe Springs, Anaheim, and Colton and the San Bernardino County unincorporated area of Lenwood.

The train speed would vary along the corridor, depending on design and land use constraints, from 45 mph to 90 mph.

The 2018 HSR Project Alternative would begin at LAUS and end at ARTIC with intermediate stations in Norwalk/Santa Fe Springs, Fullerton, or both.³ The 2018 HSR Project Alternative would include a combination of at-grade and aerial alignment. An approximately 62-acre LMF, along the west bank of the Los Angeles River, for servicing the trains would include a crew building, truck loading docks, space for waste removal, and employee parking and is discussed further in Section 3.2.3, Maintenance Facility. An overview of the 2018 HSR Project Alternative is shown on Figure 3-1.

The 2018 HSR Project Alternative also includes the new Colton Component and Lenwood Component outside the project corridor. The BNSF Components are necessary to make the construction and operation of the 2018 HSR Project Alternative feasible. The Lenwood Component is needed to stage freight trains outside the corridor so that rail activity can continue during HSR construction. Once HSR is operational, the Lenwood Component would be used to create sequencing windows to accommodate maintenance work and allow freight train scheduling to avoid congestion on the project corridor during periods of peak passenger rail activity. The Colton Component is needed to remove an average of 10 freight trains per day from the Redondo Junction to Fullerton Junction subsection in the corridor. The Colton Component is needed to maintain existing system on-time performance and reliability levels for freight rail service between Redondo Junction and Fullerton Junction.

² Baseline years and data will be updated to 2023 should the 2018 HSR Project Alternative not move forward in the EIR/EIS.

³ It was never determined whether both Norwalk/Santa Fe Springs and Fullerton Stations or only one intermediate station would be constructed.



Figure 3-1 Overview – 2018 High-Speed Rail Project Alternative

3.2.1 Lenwood Component

The Lenwood Component would be in the western part of San Bernardino County, along the existing BNSF mainline tracks southwest of State Route 58. Most of the project component site is within an unincorporated area of the county, while the remainder is in Barstow. The Lenwood Component would be approximately 487 acres and begin approximately 0.7 mile west of State Route 58 and generally extend approximately 8.9 miles west/southwest, following the existing BNSF mainline alignment. The site is immediately west of the existing BNSF Barstow Yard, which is BNSF's major California maintenance hub. An overview of the Lenwood Component is shown on Figure 3-2.

The Lenwood Component would accommodate trains of various lengths during construction and operations of the HSR system. The total length of track would be 16,000 feet, allowing for a maximum number of trains of up to four 16,000-foot trains or eight 8,000-foot trains. The Lenwood Component will enable BNSF to regulate the flow of trains between Redondo Junction and Fullerton Junction to reduce congestion and support on-time performance of the corridor. The proposed Lenwood Component consists of the following main elements: staging tracks and staging track leads, mainline relocation near the staging tracks, and circulation and roadway modifications. Partial and full property acquisitions totaling approximately 219 acres of adjacent non-BNSF-owned properties would be required to implement the proposed improvements.

3.2.2 Colton Component

The Colton Component would be in the southwestern part of San Bernardino County. The Colton Component would be generally south of Interstate 10 and the UPRR rail lines and north of the Santa Ana River. Most of the Colton Component would be in an unincorporated area of the county, while the remainder would be primarily in Colton. A small portion at the site's southern extent is in Grand Terrace. The location of the Colton Component is shown on Figure 3-3.

Previous analysis in 2018 had determined that the two dedicated tracks allocated solely to freight services in the planned 2018 HSR Project Alternative were full to capacity and that an average of 10 freight trains per day would need to be removed from the corridor to maintain on-time performance at existing levels for freight and passenger trains within the corridor. Trucks carrying cargo to or from those trains, which would otherwise travel between various Southern California locations and the Hobart and Commerce Yards, within Commerce, would instead travel between those locations and the Colton Component. As such, the volume of truck traffic that would travel to or from the Colton Component would equate to an average of 10 train movements per day and would consist of already forecasted truck traffic that, in the absence of the project, would instead travel to or from the Hobart or Commerce IMF. Most of the truck traffic that would travel to or from Colton would use the same regional transportation network system that trucks use to travel to or from the Hobart or Commerce intermodal rail yards.

The Colton Component would accommodate the transfer of goods between freight trains and on-road trucks. The location of the Colton Component—east of the project corridor—would reduce the number of freight trains that would otherwise travel to and from Hobart Yard (i.e., Los Angeles IMF) and Commerce Yard (i.e., Commerce IMF). This would reduce train congestion within the project corridor.

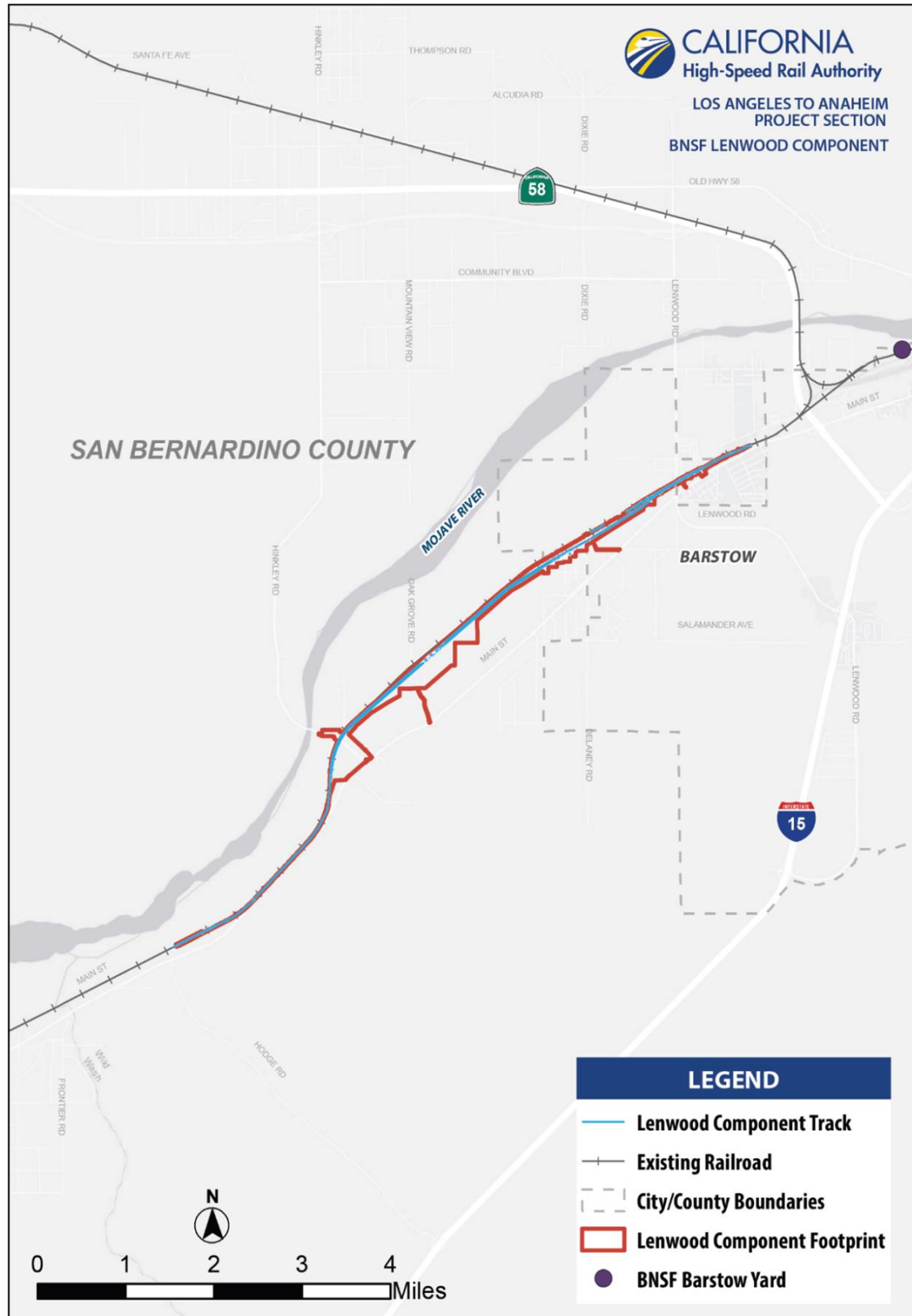


Figure 3-2 Lenwood Component Location Map

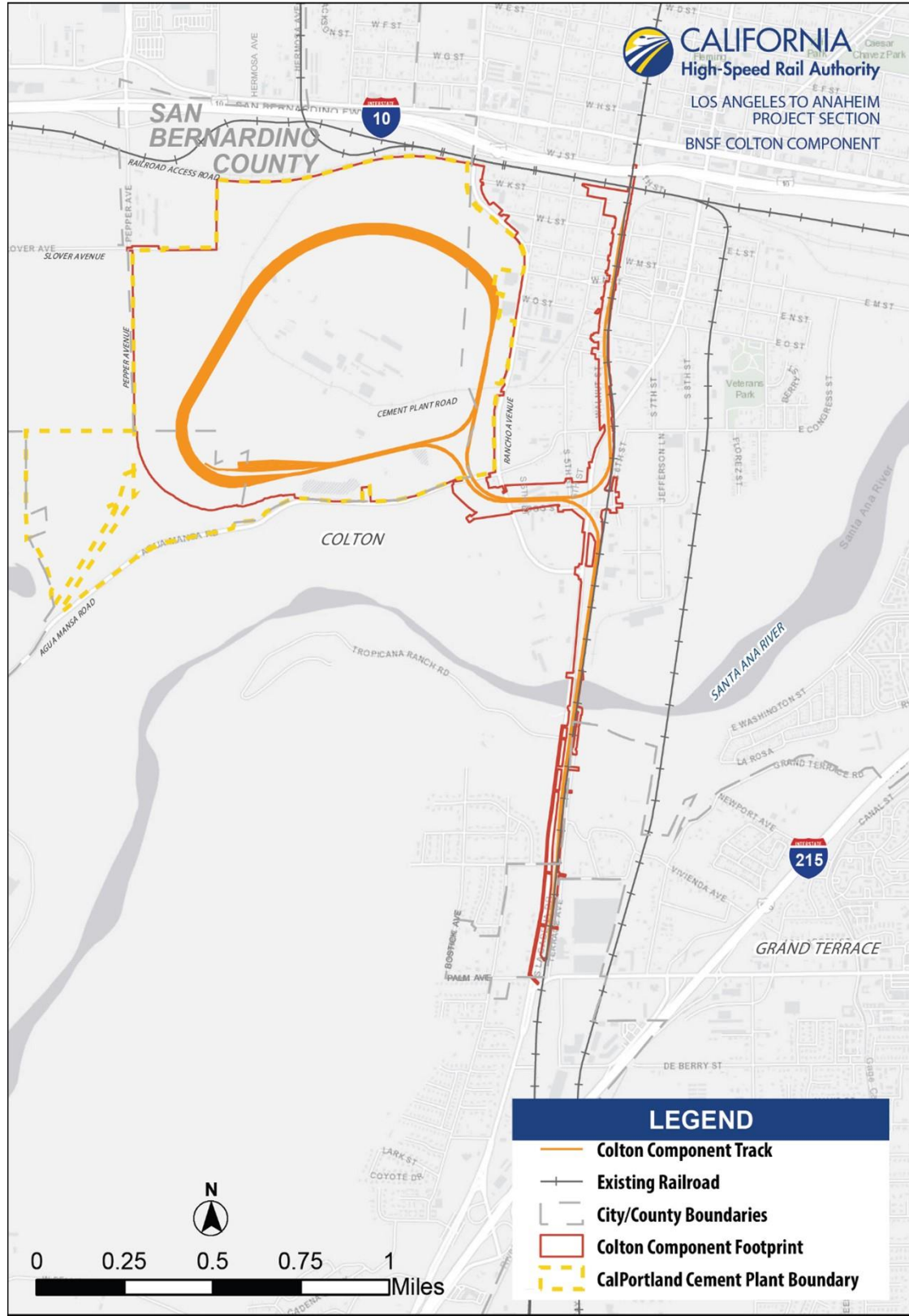


Figure 3-3 Colton Intermodal Facility Location Map

3.2.3 Maintenance Facility

The 2018 HSR Project Alternative proposes an LMF⁴ at the existing BNSF railroad yard, also used by Amtrak, on the west bank of the Los Angeles River. Existing Amtrak storage tracks at the existing railroad yard would be preserved. The 62-acre LMF would serve as an HSR vehicle maintenance and layover facility for train storage, servicing, and overnight layover accommodations. Existing BNSF storage tracks are within the proposed LMF and would require relocation. Other LMF options would be considered based on site availability and capacity.

3.2.4 Stations

The 2018 HSR Project Alternative proposes two terminus HSR stations, LAUS and ARTIC, and at least one intermediate station at Norwalk/Santa Fe Springs or Fullerton. It was never determined whether both or only one intermediate station would be built, and it was assumed that trains could stop at either station but not both. Station configurations would optimize access to the California HSR System, particularly to allow for intercity travel and connections to local transit, airports, highways, and the bicycle and pedestrian network. Stations would include the following elements:

- Passenger boarding and alighting platforms both high level and low level. The high-level platforms would be for HSR trains and the low-level platforms would be for Amtrak and Metrolink trains.
- Station building with ticketing, waiting areas, passenger amenities, vertical circulation, administration, and employee areas
- Vehicle parking (short term and long term)
- Pick-up and drop-off areas
- Bicycle parking
- Waiting areas and queuing space for taxis and buses
- Pedestrian walkway connections

3.2.4.1 Los Angeles Union Station

The proposed HSR station would be at LAUS, which is being reconfigured as part of the Link Union Station Project. The Link Union Station Project would reconfigure the station entry tracks from north of Mission Junction and would include expansion of the existing pedestrian passageway. There would be up to 10 new run-through tracks built on “common” infrastructure to support regional and intercity rail and HSR. The HSR improvements within the Link Union Station Project would be located between Vignes Street and First Street, and consist of electrifying the tracks and modifying tracks and platforms to serve HSR trains. The proposed HSR station would feature a surface station with up to four HSR tracks and two 800-foot center platforms. HSR would require 1,180 parking spaces in 2029 (opening day) and 2,010 parking spaces in 2040 (horizon year) (Authority 2016). Passenger facilities would be shared by other operators and LAUS service providers and businesses. The HSR station at LAUS has been approved as part of the Burbank to Los Angeles Project Section EIR/EIS and related approvals and will not be included in the Los Angeles to Anaheim Project Section EIR/EIS.

3.2.4.2 Norwalk/Santa Fe Springs Station

The proposed HSR station at Norwalk/Santa Fe Springs would feature an elevated station with four passenger tracks and three platforms. There would be two 680-foot Metrolink side platforms, capable of future extension to 1,000 feet, and a single 1,000-foot center platform for HSR, capable of future extension to 1,410 feet. HSR would require 350 parking spaces in 2029 and 640 parking spaces in 2040 (Authority 2016).

⁴ The level of this proposed LMF was not previously determined.

3.2.4.3 Fullerton

The proposed HSR station at the existing Fullerton Transportation Center would be at grade, featuring five tracks and five platforms. The HSR station would include a new parking station north of the existing station with 940 HSR parking spaces. An additional 402 HSR parking spaces would be added to account for existing parking spaces at Fullerton Transportation Center that would be displaced by the HSR project, for a total of 1,342 spaces. There would be no change in the total number of HSR parking spaces between 2029 and 2040 (Authority 2016).

3.2.4.4 Anaheim Regional Transportation Intermodal Center

The proposed HSR station at ARTIC would be at grade, with two new HSR tracks, and a single 1,410-foot center platform for HSR, south of and parallel to the existing Metrolink/Amtrak tracks and platforms. The project would include a new parking structure adjacent to ARTIC between Douglas Road and State Route 57. The parking structure would include 1,350 HSR parking spaces and 626 additional spaces for existing parking spaces that would be displaced by the HSR project, for a total of 1,976 spaces. There would be no change in the total number of HSR parking spaces between 2029 and 2040 (Authority 2016).

3.2.5 Grade Crossings

There are currently 17 at-grade crossings along the project corridor between LAUS and ARTIC. Section 3.2.5, Grade Crossings, contains a table identifying existing conditions and potential grade separations proposed by the 2018 HSR Project Alternative and other agencies in the area between Santa Fe Springs and La Mirada as part of the BNSF Third Mainline Track and Grade Separation project. These improvements by others independent of HSR are reflected on Figure 3-4. At this time, the Authority only has funding to support the Rosecrans Avenue/Marquardt Avenue early action grade separation, which is currently under construction.

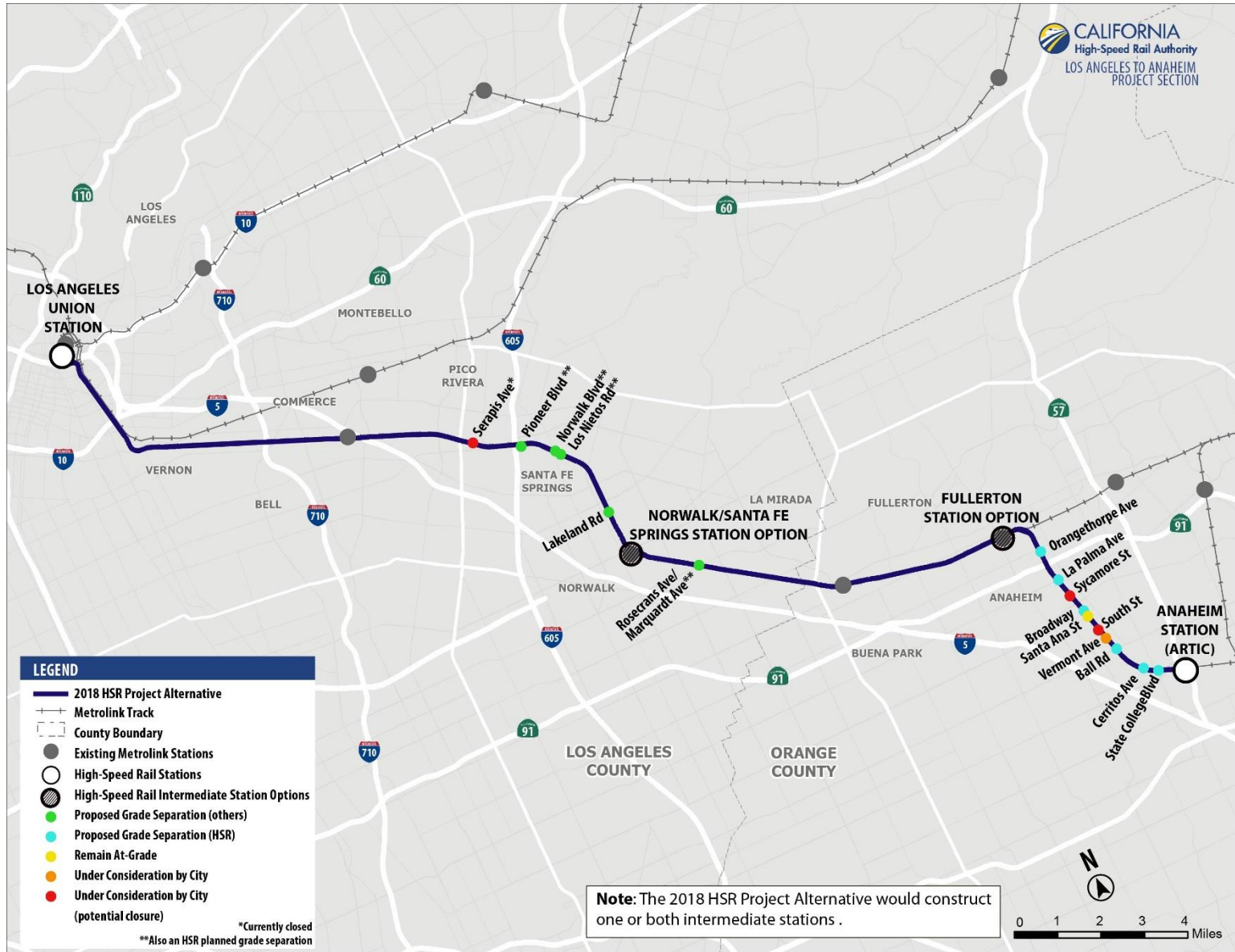


Figure 3-4 2018 High-Speed Rail Project Alternative At-Grade Crossings

Four other crossings are still under consideration with their respective cities regarding modification to accommodate HSR service. One of these crossings, Serapis Avenue in Pico Rivera, is currently closed with the city considering modifications and reopening. Crossing closures are being considered for Sycamore Street and South Street in Anaheim. Vermont Avenue, also in Anaheim, is currently under study by the city. The Authority is working with the cities along the project corridor as they consider different potential crossing modifications so future crossing configurations can be determined.

Table 3-1 shows all proposed crossing configurations for the 2018 HSR Project Alternative within the corridor by all agencies.

Table 3-1 Roadway Crossings

Roadway	Current Crossing Configuration	Proposed Crossing Configuration with Project
Los Angeles to Anaheim HSR Passenger Rail Corridor		
Soto St	Undercrossing	Passenger rail on existing aerial structure
Pioneer Blvd	At grade	Undercrossing
Norwalk Blvd/Los Nietos Rd	At grade	Undercrossing
Florence Ave	Undercrossing	Passenger rail on aerial structure
Lakeland Rd	At grade	Passenger rail on aerial structure, freight rail to remain at grade
Imperial Hwy	Undercrossing	Passenger rail on aerial structure
Carmenita Rd	Undercrossing	Passenger rail on aerial structure
Rosecrans Ave/Marquardt Ave	At grade	Overcrossing ¹
Orangethorpe Ave	At grade	Undercrossing
La Palma Ave	At grade	Undercrossing
Sycamore St	At grade	Closed
Broadway	At grade	Undercrossing
South St	At grade	Closed
Vermont Ave	At grade	Undercrossing
Ball Rd	At grade	Undercrossing
E Cerritos Ave	At grade	Undercrossing
State College Blvd	At grade	Undercrossing
Lenwood Component		
Hinkley Rd	At grade	Overcrossing
Colton Component		
Rancho Ave	N/A	Undercrossing
La Cadena Dr S	N/A	Undercrossing
Fogg St/La Cadena Dr	N/A	Undercrossing
Agua Mansa Rd	N/A	Undercrossing

Source: Authority, 2020

¹ The Rosecrans Avenue/Marquardt Avenue crossing of the railroad corridor will be grade separated by Los Angeles County Metropolitan Transportation Authority prior to the introduction of HSR.

HSR = high-speed rail; N/A = not applicable; Overcrossing = road over train tracks; Undercrossing = road under train tracks

3.2.6 Operations

In the 2017 Operations and Service Plan, the service plan concept for Phase 1 (2029) of the 2018 HSR Project Alternative estimates that the main HSR line through the Central Valley would have eight trains per hour in each direction during the peak periods and five trains per hour during the off-peak periods (Authority 2017).

Because of the constrained nature of the project corridor, the construction of staging tracks would be necessary to accommodate HSR train service. These tracks provide BNSF the ability to control the flow of traffic by providing a place to hold a train off the mainlines, freeing them to efficiently move trains. Without sufficient staging track, trains that cannot be accommodated west of West Redondo would consume mainline track capacity, causing the number of trains per hour per track to fall below the design objective of three trains per hour per track. Without staging tracks, it would be difficult for BNSF to properly schedule trains, missing, for example, the opportunity to place faster trains ahead of slower ones.

In 2018 BNSF undertook operational analysis to assess the viability of the Authority's proposed alignment between Redondo Junction (south of LAUS) and Fullerton Junction (southeast of Fullerton Station). The 2018 analysis (which was reviewed by Authority Rail Operations Staff) determined that the Authority's proposed 2018 HSR Project Alternative (which would result in a four-track alignment serving HSR, conventional passenger rail, and freight) could meet the anticipated freight and passenger traffic volumes in the 2040 model year, provided certain conditions were met: two dedicated freight and two dedicated passenger tracks in the Redondo Junction to Fullerton Junction section, the Lenwood Component to enable BNSF to better stage trains into and from the Los Angeles area, and the Colton Component to service an average of ten BNSF freight trains per day.

3.2.7 Challenges to the 2018 High-Speed Rail Project Alternative

Since its inception in 2018, the Colton Component has been controversial. The Authority held a 30-day scoping comment period from August 25 through September 24, 2020, which included BNSF Components as project components. During this scoping period, the Authority received 131 scoping comment submissions with approximately 400 individual comments. Public input indicated strong objection from both agency (e.g., U.S. Environmental Protection Agency, South Coast Air Quality Management District, San Bernardino County Transit Authority) and community interested parties, citing concerns over increased truck traffic and impacts on air quality, as well as a concern that the facilities would lead to disproportionately high and adverse effects on communities surrounding the proposed IMF or adjacent to neighboring roads and highways, the city of Colton, and San Bernardino County, all of whom would not directly benefit from the project section (see the project scoping report in Appendix A). Compared with the rest of the United States, the population within a 0.5-mile buffer of the proposed Colton Component is within the 80th percentile for low income and 91st percentile for people of color, while also exceeding the 75th percentile for all Environmental Justice Indices, except for underground storage tanks (www.ejscreen.epa.gov).

Key comments from letters submitted during the Scoping Period include those below.

San Bernardino County Transit Authority (letter dated September 24, 2020):

- The [Authority's] approach, while it may be traditional, is not in the spirit of the draft Transportation Action Plan Strategies recently prepared by the California State Transportation Agency (CalSTA) pursuant to Governor Newsom's Executive Order N-19-19. The [Executive Order] requires "that every aspect of state government redouble its efforts to reduce greenhouse gas emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy." Both the existing San Bernardino facility and the proposed Colton facility are surrounded by communities that are heavily disadvantaged already, relative to the rest of the State.

- We would urge the [Authority] Board to consider, in the interest of promoting a fair and impartial evaluation, that the decision on the preferred alternative be withdrawn until a full analysis and disclosure is available through the Draft EIR/EIS, which will have the Colton and Lenwood Component analysis included.

South Coast Air Quality Management District (letter dated September 24, 2020):

- [The Authority] and BNSF must be proactive when siting the proposed BNSF Colton Intermodal Railyard as this is new freight railyard, within an existing environmental justice community already burdened with significant existing air quality impacts.
- In addition, it must be designed to minimize or eliminate diesel fuel and must use the lowest emitting locomotives (Tier 4 or better), zero-emission or near-zero emission on-road trucks, and electric yard equipment in addition to the zero-emission cargo handling equipment.⁵ It must also be designed to create space for zero-emission charging and fueling infrastructure to support meeting California’s air quality and climate goals and actions as outlined in Governor Newsom’s Executive Order N-79-2021.
- The proposed Project should include an enforceable mechanism to ensure that the activity at the proposed BNSF Colton Intermodal Railyard does not exceed what is analyzed in the EIR/EIS, and that activity does not increase at the BNSF Hobart railyard.
- The proposed BNSF Colton Intermodal Railyard will result in an average of 10 freight trains per day, which can represent nearly 4,000 truck trips per day. Locomotives and on-road trucks are responsible for 75 percent of diesel particulate matter emissions.

City of Colton (letter dated September 24, 2020):

- Our concerns and comments are provided in the context of Colton being a disadvantaged community that may be disproportionately impacted by this project. Colton is most burdened by multiple sources of pollution and is vulnerable to the effects of 20 indicators of environmental quality and socioeconomic and public health conditions. The city is also designated as a “Community of Concern” in Southern California Association of Governments (SCG) planning documents.
- The addition of 10 freight trains per day and the associated increases in truck trips may offset any positive benefits of the HSR project. Mitigation would have to be extensive to assist in lowering any additional emissions when Colton is already at its highest score for environmental burdens.

Metrolink (letter dated September 24, 2020):

- The Revised Notice of Preparation states that “Projected future cumulative passenger (commuter diesel and electric HSR) and freight train volumes require additional facilities to be added outside the corridor...”. However, SCRRRA advises that these facilities are not contemplated or needed but for the anticipated arrival of the California High Speed Rail Authority ... service into this corridor. This assertion was affirmed by [a] BNSF representative in response to questions about the need for the two projects during the Agency Scoping Meeting.
- Accordingly, any statement that suggests currently contemplated commuter or Metrolink service is the basis for this need must be stricken from the [Authority] documentation from this point forth.

⁵ BNSF does not currently operate a Tier 4 fleet, nor are there adequate zero-emission or near-zero-emission trucks to appropriately serve the Colton Component. Based on the number of non-Tier 4 locomotives visiting/operating within the South Coast Air Basin ([Rail Emission Reduction Agreements | California Air Resources Board](#)), and the cost of new/updated Tier 4 locomotives ([Preliminary Cost Document for the In-Use Locomotive Regulation \(ca.gov\)](#)), the Authority estimates costs could total in the billions of dollars to upgrade BNSF’s fleet in the near term.

University of Southern California School of Medicine and East Yard Communities for Environmental Justice (letter dated September 24, 2020):

- Since the rail yard will be able to handle 14 trains per day, calculations MUST be provided for the pollution from 14 trains per day because it would seem very likely that if imports increased, BNSF would use the full capacity of the yard.
- The Colton Yard would be anticipated to handle 900,000 container “lifts” a year, presumably each representing 1.5 lifts per truck. That equals more than to 4000 new truck trips per day.
- The most polluting rail yard in the state is the Barstow Yard in San Bernardino County (SB County). In fact, three rail yards are located in SB County already, including the BNSF Barstow rail yard, the BNSF San Bernardino rail yard, and the UP Colton rail yard. Both the proposed BNSF Colton Rail Yard and the proposed Lenwood staging facility are in SB County.

EarthJustice, National Resource Defense Council, Sierra Club, and other community groups (letter dated September 24, 2020):

- This proposed Project will allow BNSF to use diesel locomotives, trucks, and construction equipment for the operation and construction of the Colton and Lenwood Components. Yet, diesel exhaust contains more than 40 gaseous and particulate constituents that are listed as hazardous air pollutants or toxic air contaminants by either the U.S. Environmental Protection Agency or the California Air Resources Board, and at least 21 of these substances are listed by the state of California as known carcinogens or reproductive toxicants. In other words, as part of the all-electric High-Speed Rail, the Authority has proposed two facilities that will use dirty diesel locomotives, trucks, and construction equipment and that will dump known cancer-causing substances into the surrounding community.
- The proposed site of the BNSF Colton Railyard would be located within five miles of 23 K-12 schools, immediately neighbor dozens of homes, and border an [Assembly Bill] 617 environmental justice community, in addition to impacting other [Assembly Bill] 617 communities in the region. In fact, the facility would be located within one mile of a preschool. The adverse health impacts from this facility would be felt by children, families and community members surrounding the railyard who would breathe in toxic pollution from dirty diesel trains and trucks. The proposed Lenwood Component would similarly be located within a few miles of 15 K-12 schools and nearby residences.
- San Bernardino County, where the BNSF Components would be located, continues to experience some of the worst air quality in the nation. People throughout the region suffer from record rates of asthma, lung disease, and other respiratory ailments. Many of the health consequences from this Project would be compounded for young children and community members already suffering from asthma, lung disease, and other respiratory ailments from breathing in polluted air day after day.

Additionally, BNSF’s support of the facility has waned, and BNSF is no longer willing to discuss its development with the Authority. Given BNSF’s lack of participation, and in order to proceed with the environmental analysis, the Authority would assume all oversight of the Colton Component’s development, including its features and mitigation measures, with no certainty that BNSF would agree to operate the facility. It has become clear that while the approximately \$1.37 billion IMF was previously thought to be paid for by other entities, the Authority would likely now have to cover the cost of the IMF, which would substantially increase previous budget projections. South Coast Air Quality Management District Proposed Rule 2306, which would go into effect in 2024, requires the operator or owner of any new rail IMF, and any state agency that enters into a contract for a new rail IMF, to reduce and facilitate reductions of pollutant emissions to state-wide targets, use zero-emission infrastructure (including locomotives), and abide by additional mitigation measures, such as Early and Additional Action Banking and mitigation fees. As the Authority would now likely be funding, environmentally clearing, and building the facility, Proposed Rule 2306 would also require the Authority to provide oversight of the Colton Component project features and mitigation measures to ensure operations meet air quality standards. This would not only increase capital and operational costs to the Authority, but also increase the Authority’s liability, as it would be responsible for a facility owned and operated by a private company. This role was not contemplated when the Authority introduced the Colton Component.

These challenges pose a conflict to the Authority's mission of providing sustainable HSR service. As a result, the Authority has determined that the Colton Component, and therefore the 2018 HSR Project Alternative, presents significant areas of risk when considering the evaluation criteria. Continued inclusion of the 2018 HSR Project Alternative within this SAA is for comparative purposes only.

3.3 Shared Passenger Track Alternative

The Shared Passenger Track Alternative would follow the same alignment as the 2018 HSR Project Alternative, with different operational assumptions as discussed below. The Shared Passenger Track Alternative would not include the Colton Component.

In the 2020 NEPA Notice of Intent and the CEQA Notice of Preparation, the Authority described the BNSF Components as follows: "the Authority has identified the Colton and Lenwood Components, which are located outside the HSR corridor, as necessary components of the Los Angeles to Anaheim Project Section that are required to maintain freight and passenger train performance at existing levels during project construction and accommodate currently projected freight and passenger growth during project operation within the corridor."

As the Shared Passenger Track Alternative would present similar construction and operations-related impacts on freight rail service, this alternative would still include freight train staging tracks necessary to alleviate mainline congestion within the project corridor during HSR Project construction and subsequent operation. However, this document and future environmental documents will analyze these staging tracks as mitigation for freight impacts, rather than as a project component, to better reflect the purpose and need of the facility: to mitigate impacts of HSR project construction and maintain rail operational reliability and resiliency within the project corridor. Consequentially, this document does not evaluate the potential staging track locations (see Appendix B).

3.3.1 Maintenance Facility

LMFs require substantial space and, therefore, the urbanized project corridor is limited in potential LMF locations. HSR requires LMF yard tracks, capable of holding two complete trainsets per track, plus two runaround/transfer tracks to move from one end of the facility to the other. In the case of Level III LMFs, one dedicated train wash track is required, which must be long enough for trainsets to stop in advance of the train wash without fouling the main tracks. Wheel defect detection equipment is required on the incoming lead track(s) to ensure that all vehicles are inspected. Daily servicing and monthly and quarterly inspections and maintenance would be made using inside shop tracks with interior access and inspection pits for underside and bogie inspections. The storage yard capacity would include room to store up to 37- to 705-foot-long trainsets.

The Shared Passenger Track Alternative proposes two LMF options. The first LMF option would be a Level III facility along the West Bank of the Los Angeles River (similar to the 2018 HSR Project Alternative). This LMF option would hold 20 single trainsets, with four shop tracks, and would be built to the west of Amtrak's current Eighth Street Yard.

The second LMF option would be a 41-acre Level III facility at Hobart Yard. This LMF option would hold 24 single trainsets, with six shop tracks, and would require the restriping of BNSF Lot 11 to maintain operations. Future analysis of the Shared Passenger Track Alternative will evaluate the LMF options for their potential impacts, constructability, and ability to meet the project's purpose and need. Only one LMF will ultimately be needed.

3.3.2 Stations

This would be the same as described for the 2018 HSR Project Alternative except, based on the environmental analysis, interested party input, cost, ridership, and feasibility of construction, one or neither intermediate station (i.e., Fullerton or Norwalk/Santa Fe Springs) would be constructed. The environmental document will evaluate all proposed station configurations.

3.3.3 Grade Crossings

This would be the same as described for the 2018 HSR Project Alternative, except for grade crossings associated with the BNSF Components, as identified in Table 3-1. However, because of reduced HSR service capacity and removal of the BNSF Components, grade crossing configurations would differ from the 2018 HSR Project Alternative, with fewer proposed grade separations overall. The Authority continues to evaluate crossing configurations.

3.3.4 Operations

As discussed in Section 3.2.6, in 2018 BNSF undertook operational analysis to assess the viability of the Authority's proposed alignment between Redondo Junction (south of LAUS) and Fullerton Junction (southeast of Fullerton Station), which resulted in the addition of the BNSF Components.

After hearing substantial opposition to the Colton Component during 2020 project scoping, the Authority explored alternatives that address the corridor's operational needs but do not include the Colton Component. The previous operations analysis in 2018 had determined that the two dedicated tracks allocated solely to freight services in the 2018 HSR Project Alternative would still require an average of 10 freight trains per day to be removed from the corridor. Therefore, an alternative without the Colton Component would require these freight trains to be accommodated on the two tracks previously dedicated to the passenger trains in the 2018 HSR Project Alternative. However, allowing freight trains to use all four tracks would reduce the number of passenger trains able to use the tracks. The analysis concluded that using the same alignment previously selected by the Authority, a reduction in the total number of passenger trains to seven trains per hour in each direction, along with minor alterations to the proposed crossover layouts in Montebello and Fullerton to minimize freight and passenger train conflicts, could provide enough freight train slots per day—equivalent to one train per hour per direction—to compensate for the removal of the Colton Component. In order to retain the previously modeled service levels for Metrolink and the LOSSAN Corridor, it is necessary to reduce the peak service level for HSR trains to two trains per hour per direction. This is the Shared Passenger Track Alternative.

The Shared Passenger Track Alternative would maintain the current and projected freight train volume within the corridor, including the ten additional trains per day that would have been removed from the corridor if the Colton Component was implemented. As a result, the Shared Passenger Track Alternative would have the same freight train volume, and number of associated truck trips to the Hobart Yard, as the No Build Alternative. Compared with the 2018 HSR Project Alternative, this would result in increased freight train volume within the corridor and increased regional truck miles, which could result in greater air quality and traffic impacts in the vicinity of the Gateway Cities and Hobart Yard. Under the Shared Passenger Track Alternative, Metrolink and the LOSSAN Corridor Agency would not be precluded from achieving 2018 State Rail Plan levels.

3.4 3A – Freeway Tunnel Alternative

The 3A – Freeway Tunnel Alternative would operate through several major cities including Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Downey, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. Downey is the only new city in this alternative.

The corridor would be 30 miles in length, with 1.8 miles in ROW owned by BNSF. There would be 23.6 miles of tunnel and 9.4 miles of at-grade alignment.

The maximum allowable speed under this alternative would vary depending on design and land use constraints, ranging from 125 mph to 150 mph.

The 3A – Freeway Tunnel Alternative would follow the same alignment along the Los Angeles River as the Shared Passenger Track Alternative, but would diverge at that point and mainly follow Interstate 5 southeast to the project terminus at ARTIC in a tunnel alignment. In some cases, the tunnel would be under existing buildings, but this will be analyzed in further detail to determine if underpinnings of certain buildings are required. The Authority assumed for analysis that the tunnel would be built using a single bore tunnel using a single tunnel boring machine approximately 50 feet in diameter. It is also assumed a 5- to 10-acre staging area would be required at all tunnel portal locations. The proposed HSR LMF would

be west of the 3A – Freeway Tunnel Alternative along the west bank of the Los Angeles River and be the same as the LMF in the 2018 HSR Project Alternative. An overview of the 3A – Freeway Tunnel Alternative is shown on Figure 3-5.

An alternate configuration was considered for the 3A – Freeway Tunnel Alternative during this SAA to reduce tunneling. It would follow the same alignment as the 3A – Freeway Tunnel Alternative but would run on an aerial alignment within the median of Interstate 5 between Los Angeles and Anaheim. However, this alternate configuration was eliminated because of freeway disruptions during construction that would require multiple years of interruptions to an already affected freeway facility; major reconstruction of freeway sections to allow for improvements that might require complex construction methods to design and build; impacts on nearby residential areas resulting from access disruption, pollution, noise and vibration, and other impacts on adjacent property owners and environmental justice communities; reduced freeway capacity during construction affecting motorists' travel time; reduced HSR maximum allowable speeds; and restrictions along California Department of Transportation and Los Angeles County Metropolitan Transportation Authority ROW. There would also be additional permanent visual changes associated with project elements such as overhead catenary lines to areas adjacent to or within viewing range of the alignment. An overview of the alternate configuration is shown on Figure 3-6.

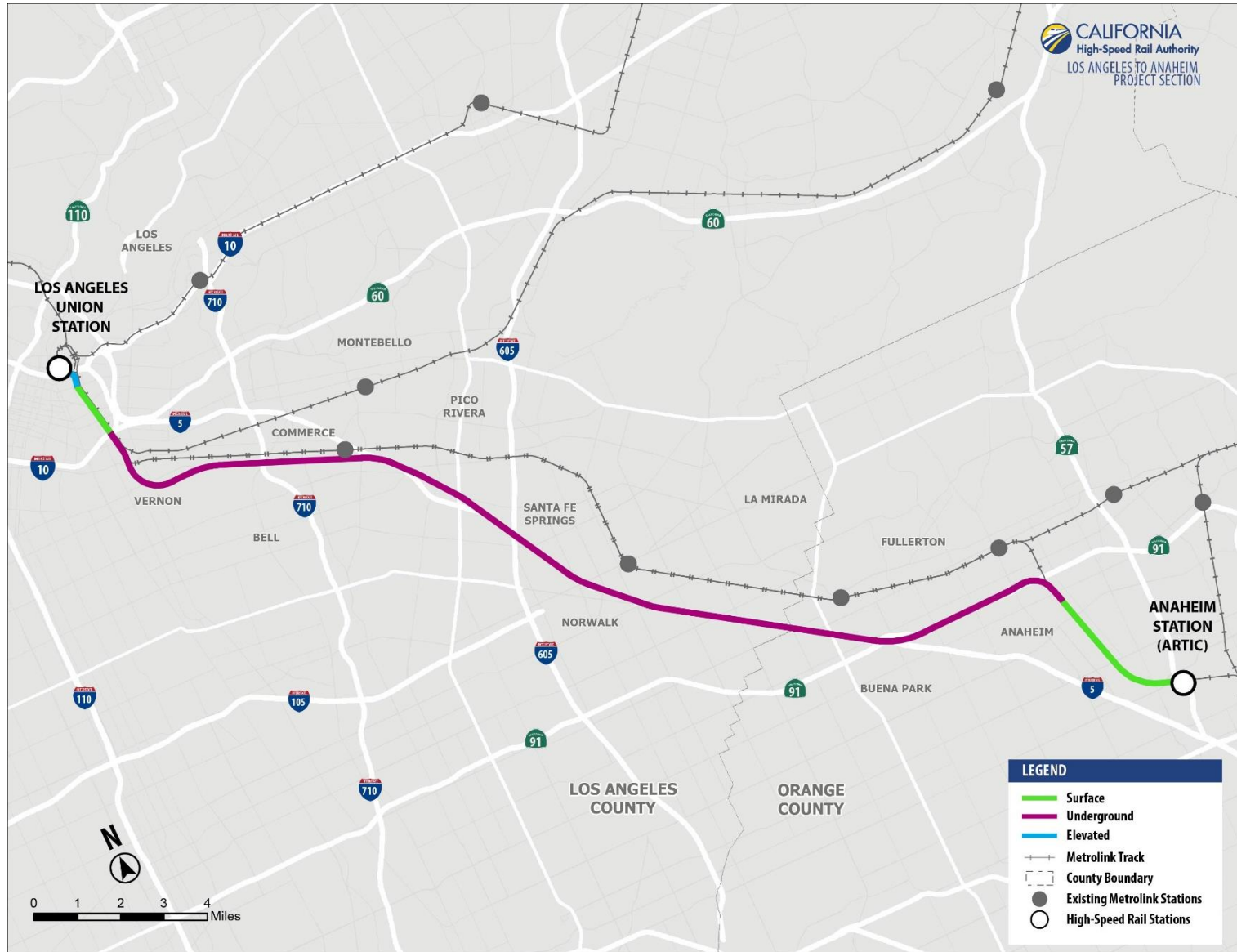


Figure 3-5 Overview: 3A – Freeway Tunnel Alternative

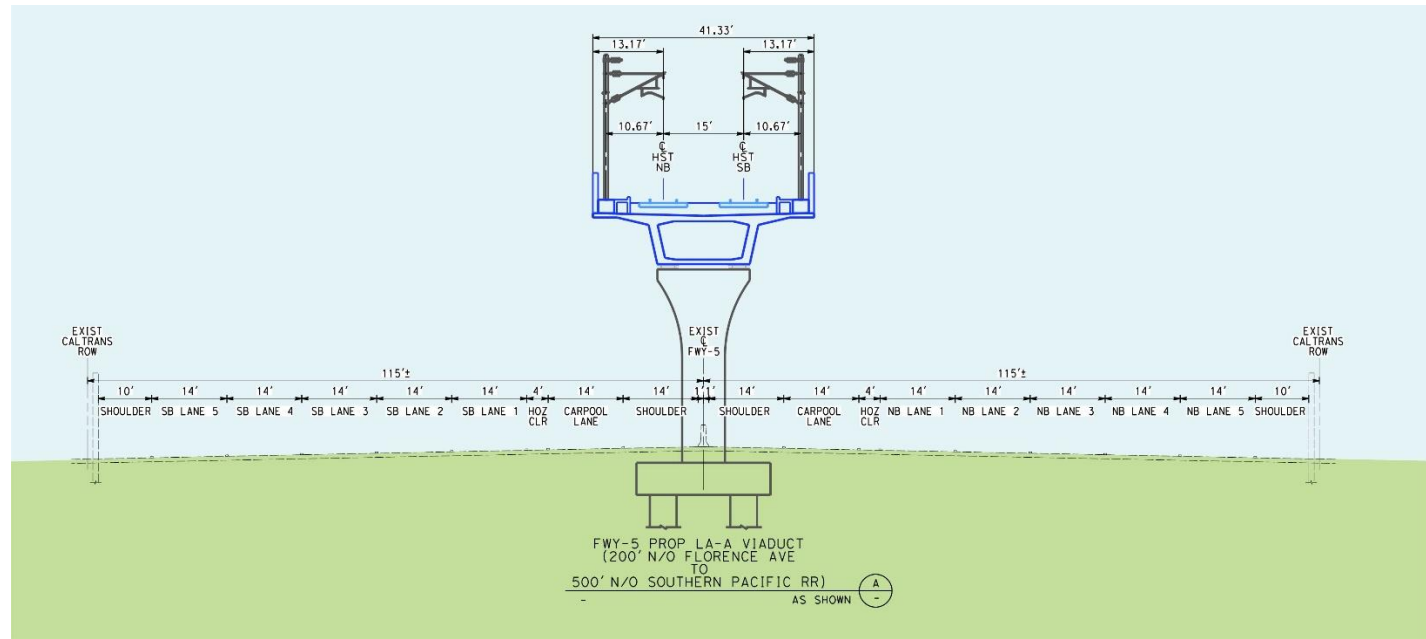


Figure 3-6 Alternate Configuration Typical Cross Section

3.4.1 Maintenance Facility

The LMF would be in the same location as under the 2018 HSR Project Alternative and would therefore displace BNSF operations at this location.

3.4.2 Stations

This alternative proposes two HSR stations: LAUS and ARTIC. An intermediate station was not considered under the 3A – Freeway Tunnel Alternative.

3.4.2.1 LAUS

This HSR station would be the same as described for the 2018 HSR Project Alternative.

3.4.2.2 ARTIC

This HSR station would be the same as described for the 2018 HSR Project Alternative.

3.4.3 Grade Crossings

There would be no change to the existing crossings configurations under the 3A – Freeway Tunnel Alternative between LAUS and just south of La Palma Avenue in Anaheim, where the alignment would daylight and would be the same as for the Shared Passenger Track Alternative to ARTIC.

3.4.4 Operations

The 3A – Freeway Tunnel Alternative could have four HSR trains per hour per direction in the peak hours and two HSR trains per hour in each direction in the off-peak hours and follow the same operations as the 2018 HSR Project Alternative as described in Section 3.2.6, Operations. However, the trains would mainly run outside the project corridor except for the southern stretch from State Route 91 to ARTIC. The HSR trains would be running in a dedicated HSR corridor from LAUS to State Route 91 in Anaheim. Operations of the project corridor between LAUS and Fullerton would not be modified as part of this alternative and would match those of the No Project Alternative as described in Section 3.1, No Project Alternative.

3.5 3B – Union Pacific Railroad Alignment Alternative

The 3B – UPRR Alignment Alternative would operate through several major cities including Los Angeles, Vernon, Maywood, Huntington Park, Bell, South Gate, Cudahy, Downey, Norwalk, Santa Fe Springs, Cerritos, La Mirada, Buena Park, and Anaheim. Maywood, Huntington Park, South Gate, Cudahy, Downey, and Cerritos would also be affected by 3B – UPRR Alignment Alternative operations.

The corridor would be 30 miles in length, with 1.8 miles in ROW owned by BNSF and 18 miles in ROW owned by UPRR. There would be 8.3 miles of tunnel, 19.9 miles at grade, 0.9 mile of trench, and 1.3 miles in an aerial alignment.

The maximum allowable speed would vary depending on design and land use constraints, ranging from speeds of 90 mph to 110 mph.

The 3B – UPRR Alignment Alternative would begin at LAUS and end at ARTIC. The 3B – UPRR Alignment Alternative would include a combination of tunnel, at-grade, and trench/cut-and-cover alignment. Proposed HSR staging tracks for the LMF would be west of the 3B – UPRR Alignment Alternative. In some cases, the tunnel would be under existing buildings, but this will be analyzed in further detail to determine if underpinnings of certain buildings are required. An overview of the 3B – UPRR Alignment Alternative is shown on Figure 3-7.

This alternative would result in the nearby relocation of some UPRR sidings in Norwalk and Santa Fe Springs. However, there would be no overall loss in sidings and no spur track would be relocated or vacated.

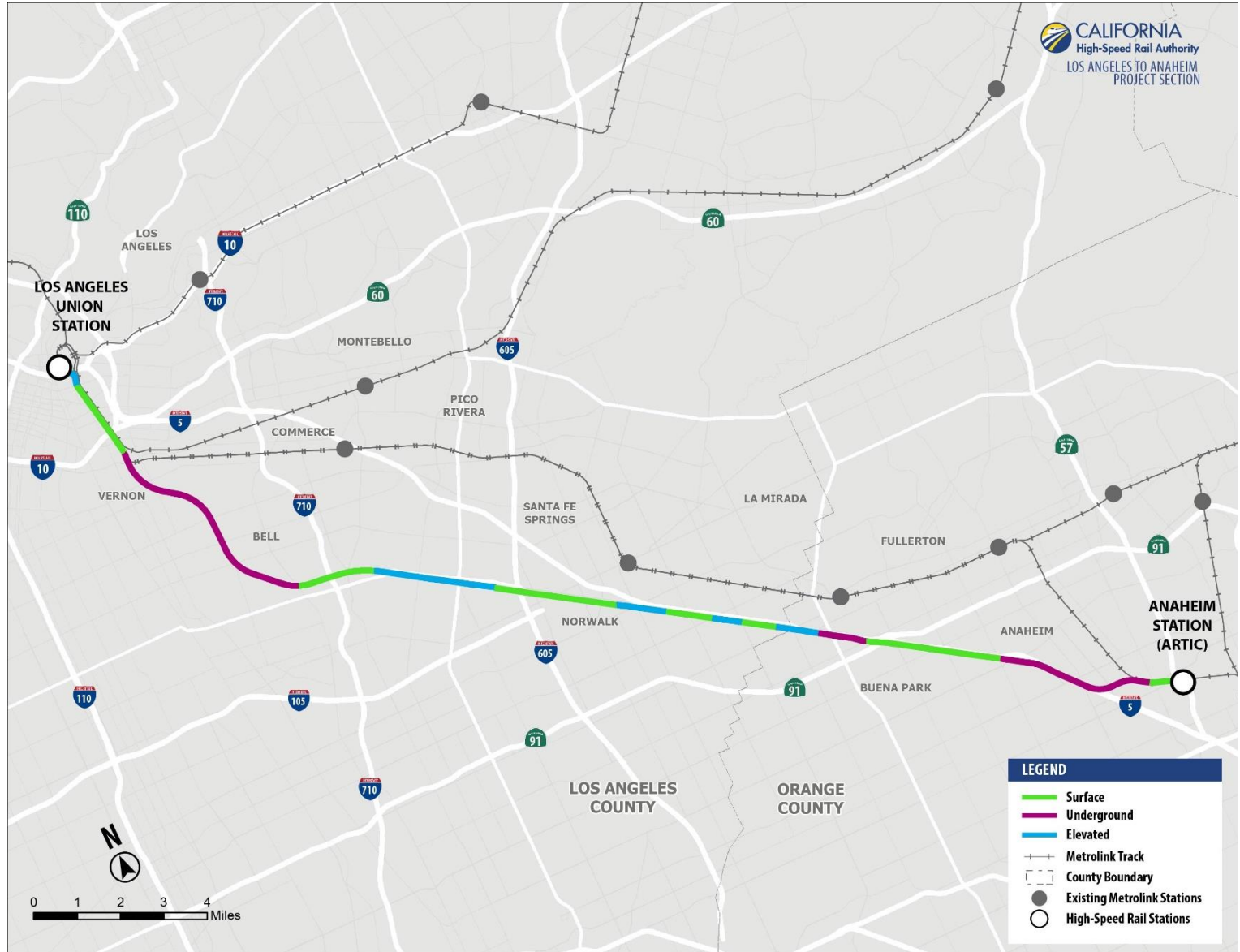


Figure 3-7 Overview: 3B – Union Pacific Railroad Alignment Alternative

3.5.1 Maintenance Facility

The LMF would be the same as under the 3A – Freeway Tunnel Alternative and the 2018 HSR Project Alternative, and therefore would displace BNSF operations at this location.

3.5.2 Stations

This alternative proposes two HSR stations: LAUS and ARTIC. An intermediate station was not considered under the 3B – UPRR Alignment Alternative.

3.5.2.1 LAUS

This HSR station would be the same as described for the 2018 HSR Project Alternative.

3.5.2.2 ARTIC

This HSR station would be the same as described for the 2018 HSR Project Alternative.

3.5.3 Grade Crossings

Table 3-2 shows all proposed crossing configurations for the UPRR Alignment Alternative that would be built by the Authority. The crossings at Hoxie Avenue, Orr and Day Road, Arctic Circle, and Funston Avenue would remain at grade with upgraded safety features. New grade separations would be built at San Antonio Avenue, Pioneer Boulevard, Studebaker Road, and State College Boulevard. Additionally, the existing grade separations at Imperial Highway and Katella Avenue would be widened to accommodate this alternative.

Table 3-2 Existing Roadway, Waterway, and Railroad Crossings

Roadway	Current Crossing Configuration	Proposed Crossing Configuration with Project
Eastern Ave	At grade	Undercrossing
Firestone Blvd	At grade	Undercrossing
Rives Ave	At grade	Undercrossing
Paramount Blvd	At grade	Undercrossing
Downey Ave	At grade	Undercrossing
Dolan Ave	At grade	Undercrossing
Brookshire Ave	At grade	Undercrossing
Patton Rd	At grade	Undercrossing
Lakewood Blvd	At grade	Undercrossing
Woodruff Ave	At grade	Undercrossing
UPRR mainline tracks	At grade	Undercrossing
Stewart and Gray Rd	At grade	Undercrossing
Regentview Ave	At grade	Undercrossing
Studebaker Rd	At grade	Undercrossing
Pioneer Blvd	At grade	Undercrossing
San Antonio Dr	At grade	Undercrossing
UPRR mainline tracks	At grade	Undercrossing
Rosecrans Ave	At grade	Undercrossing

Roadway	Current Crossing Configuration	Proposed Crossing Configuration with Project
Bloomfield Ave	At grade	Undercrossing
Shoemaker Ave	At grade	Undercrossing
Alondra Blvd	At grade	Undercrossing
Marquardt Ave	At grade	Undercrossing
UPRR mainline tracks	At grade	Undercrossing
Artesia Blvd	At grade	Undercrossing
Knott Ave	At grade	Overcrossing
Western Ave	At grade	Overcrossing
UPRR mainline tracks	At grade	Overcrossing
Beach Blvd	At grade	Overcrossing
Stanton Ave	At grade	Overcrossing

Source: Authority, 2022

overcrossing = road over train tracks; undercrossing = road under train tracks; UPRR = Union Pacific Railroad

3.5.4 Operations

The 3B – UPRR Alignment Alternative could have four HSR trains per hour per direction in the peak hours and two HSR trains per hour in each direction in the off-peak hours, and would follow the same HSR operations as the 2018 HSR Project Alternative as described in Section 3.2.6. However, the trains would follow the UPRR corridor instead of the LOSSAN Corridor and share the corridor with UPRR freight trains between Bell and Anaheim. Operations of the LOSSAN Corridor between LAUS and ARTIC would not be modified as part of this alternative and would match the No Project Alternative as described in Section 3.1.

4 EVALUATION OF ALTERNATIVES

4.1 Project Alternative Comparison

Table 0-1 provides specific details for each alternative's build and estimated rail speed and costs. Table 4-1 provides an evaluation of the benefits and impacts of the No Project Alternative and project alternatives at the current level of design and analysis. The table provides observations of the impacts on the various considerations compared to those of the 2018 HSR Project Alternative.

The SAA was conducted using standardized evaluation measures so that each of the alternatives could be compared with each other in an effort to identify feasible and reasonable alternatives for study and to determine whether the alternatives met screening criteria. More successful alternatives were those that reduced or avoided adverse environmental impacts, met the purpose and need and project objectives, and were feasible or practicable to build. Whereas an EIR/EIS evaluates the potential impacts the alternatives would have at a project level of detail, the SAA assesses preliminary project alignments, station sites, and related facility sites at a conceptual level of detail per the *California HSR Technical Memorandum, Alternatives Analysis Methods for Project EIR/EIS Version 3* (Authority 2011).

The SAA documents a review of publicly available information and data for the alternatives to provide a discussion of potential environmental constraints related to short-term and long-term effects. Short-term impacts included construction, construction staging, and other implementation issues. Long-term impacts considered the direct and indirect effects and daily operations anticipated of the alternatives. Data and analysis for the No Project Alternative and 2018 HSR Project Alternative were provided through review of the existing technical work. Because of the level of design available for several of the build alternatives in this SAA (Shared Passenger Track Alternative, 3A – Freeway Tunnel Alternative, and 3B – UPRR Alignment Alternative), a literature review, database queries, and field reconnaissance were not conducted. Where it was possible to quantify the effects, estimates are provided, and where it was not possible to quantify effects, qualitative evaluation is provided. Overall, each preliminary alternative was evaluated individually under each consideration at a preliminary level of analysis sufficient to identify potentially severe constraints and to provide an overall comparative analysis of the potential levels of impact for the alternatives in a summary format. However, the build alternatives have several design features in common, including a northern terminus at LAUS, a southern terminus at ARTIC, and one of the potential LMF sites. These features would have the same effect for each of the build alternatives and are not comparatively evaluated in this analysis as there is no differentiation among them regarding impacts.

Table 4-1 Comparison of Los Angeles to Anaheim Project Section Alternatives

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Design Objectives					
Maximize ridership/revenue potential	This alternative would not have a journey length or revenue potential because no alignment would be built.	This alternative would include at least three stations and four trains per hour in each direction in the peak and two trains per hour per direction in the off-peak along the 33-mile corridor. This alternative would be in a shared corridor. The estimated journey time would be approximately 46 minutes. This would potentially serve the most people (with 1 or 2 intermediate stops) and with frequent operations, which could maximize ridership/revenue potential.	This alternative would reduce the number of HSR trains in the peak hours to two trains per hour per direction (compared to the 2018 HSR Project Alternative) and would be the same length as the 2018 HSR Project Alternative. This alternative would include up to three stations. The estimated journey time would be approximately 46 minutes. This alternative would have similar ridership to the 2018 HSR Project Alternative. However, operating fewer trains and fewer intermediate stations could result in decreased ridership/revenue potential.	This alternative would have the same service frequency as the 2018 HSR Project Alternative. This alternative would be mostly in a dedicated tunnel alignment with no other operators or an intermediate station for the 29.7-mile corridor. Being in a tunnel would allow for faster speeds. The estimated journey time would be approximately 20 minutes. Without any intermediate stations, this alternative would potentially serve fewer people, thereby decreasing ridership/revenue potential.	This alternative would have the same service frequency as the 2018 HSR Project Alternative. This 33-mile alternative would primarily be in a shared corridor. This alternative would be in dedicated tunnels in a few locations but would not have an intermediate station. The estimated journey time would be approximately 25 minutes. Without any intermediate stations, this alternative would potentially serve fewer people, thereby decreasing ridership/revenue potential.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Maximize connectivity and accessibility	While this alternative would include transit and roadway projects, it would not contribute to connecting Southern California to Northern California like the 2018 HSR Project Alternative.	This alternative would provide a direct connection to other modes of transit options and support other passenger rail operations at LAUS; Norwalk/Santa Fe Springs, Fullerton, or both; and ARTIC, maximizing regional connectivity.	This alternative would have improved connectivity similar to the 2018 HSR Project Alternative with use of existing alignments and stations for maximizing regional connectivity, particularly to the Metrolink, Amtrak, Metro, and OCTA transit systems. However, fewer intermediate stations could result in less connectivity.	This alternative would connect to other modes of transit at LAUS and ARTIC. An intermediate station would not be included in this alternative and therefore would not provide as many connectivity and accessibility opportunities.	This alternative would have the same reduced connectivity and accessibility as the 3A – Freeway Tunnel Alternative because it would provide the same types of connectivity and accessibility at the same station locations.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Minimize capital and operating costs	Because this alternative would result in the HSR not being built in this area, additional capital costs would be required where HSR has committed to invest in Early Action Projects. No additional operating costs are anticipated if the project section is not built.	<p>This alternative would have reduced costs compared to a dedicated ROW alternative, due to sharing most of the existing railroad ROW. Additionally, this alternative has potential to reduce operating costs due to shared maintenance expenses with other rail services and operators within the corridor.</p> <p>However, capital costs for the BNSF Components would be paid for by the Authority and the Authority would likely be responsible for some operating costs associated with the BNSF Components. This alternative may also include construction of both intermediate stations.</p>	<p>This alternative would have the lowest capital and operating cost compared to the 2018 HSR Project Alternative because there would be fewer trains operating, may construct fewer stations, and does not include the Colton Component.</p> <p>Additionally, this alternative has potential to reduce operating costs due to shared maintenance expenses with other rail services and operators within the corridor and reduced HSR fleet size.</p> <p>Capital cost for the staging tracks would be paid for by the Authority.</p>	<p>This alternative would have higher capital and operating costs because it would be mostly in a tunnel.</p> <p>Capital costs for the BNSF Components are avoided.</p>	<p>This alternative would have lower costs than the 3A – Freeway Tunnel Alternative. However, this alternative would accrue higher capital costs than the 2018 HSR Project Alternative due to grade separation construction costs, the majority of the alignment being on a viaduct, with some portions of the alignment within a tunnel.</p> <p>Capital costs for the BNSF Components are avoided.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Land Use					
Development potential for TOD within walking distance of station	Some of the transit projects proposed by local agencies may provide an opportunity for TOD. However, these would also occur with all the alternatives.	Because of a higher number of stations along this alternative and the relocation of two Metrolink stations, there would be high potential for TOD.	This alternative would have roughly the same potential as the 2018 HSR Project Alternative, although there would be fewer HSR trains serving the stations. Additionally, constructing fewer stations could result in decreased TOD potential.	This alternative would have a reduced potential for TOD because it would only include two stations.	This alternative would have the same result as the 3A – Freeway Tunnel Alternative.
Maximize compatibility with existing and planned development	Future development and infrastructure projects under the No Project Alternative would have to go through their own environmental review process to determine their associated impacts, except for the Early Action Projects, which are being cleared as a part of this project. In addition, this alternative would not include HSR benefits, such as reducing emissions, and would make it more challenging to meet those associated policies.	This alternative would be consistent with and help achieve many goals in local plans, such as the LOSSAN Corridor Improvement Plans, California Transportation Plan, and Southern California Association of Governments 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy. However, this alternative would also result in relocating emissions and project impacts to Lenwood and Colton, which are outside the project section corridor region.	This alternative would achieve similar results as the 2018 HSR Project Alternative, with the exception of affecting Colton.	This alternative would have minimal impacts because the alignment would be mostly in a tunnel. As such, there would be minimal conflict with local transportation plans, general plans, and other adopted plans. Similar to the 2018 HSR Project Alternative, this alternative would help to achieve many regional plans and policies. In addition, there would be no need for the BNSF Components, thereby reducing the emissions impacts in those areas.	This alternative would be similar to the 3A – Freeway Tunnel Alternative because it would not include the BNSF Components.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Constructability					
Maximize constructability	<p>Early Action Projects identified as a part of this project would use existing grade crossings and existing railroad ROW for construction access. Potential impacts from construction of other projects will be analyzed in depth at the project level for each potential future project. Under this alternative, other development projects could affect these facilities either directly or indirectly.</p>	<p>This alternative would use the existing grade crossings along the existing rail corridor to access the existing LOSSAN Corridor ROW and BNSF ROW. Construction laydown areas have been identified along the project alignment.</p>	<p>This alternative would have the same accessibility as the 2018 HSR Project Alternative along the project corridor and would provide adequate accessibility for the staging tracks. Fewer construction laydown areas than the 2018 HSR Project Alternative would be required, as this alternative would not include the Colton Component. Additionally, fewer grade separations and potential stations would increase constructability of the alternative.</p>	<p>This alternative would use the existing roadway network to access tunnel portal, ventilation, emergency egress, and other surface infrastructure. It would need large construction staging and laydown areas at the portal locations in order to build the boring machines and water treatment plant.</p>	<p>This alternative would follow the UPRR corridor and is expected to have the same construction impacts as the 3A – Freeway Tunnel Alternative where it is in a tunnel. Any aboveground impacts for this alternative would be similar to those of the 2018 HSR Project Alternative because the alignments are in urban and suburban areas of the Los Angeles basin despite being in different locations and would be built in existing transportation ROW.</p>
Minimize disruption to existing railroads	<p><u>Construction and operation:</u> Because there would be no HSR, this alternative would not benefit from the proposed grade separations that would improve safety and railroad operating times.</p>	<p><u>Construction:</u> Because this alternative would be within a shared corridor with several freight and passenger rail operators, it would have the highest potential for disruption during project construction. Project construction would necessitate the Lenwood Component to maintain BNSF operations. <u>Operation:</u> This alternative would</p>	<p><u>Construction:</u> This alternative would result in the same disruptions as the 2018 HSR Project Alternative in the project corridor because the project components are generally the same. Staging tracks would be built to reduce freight and passenger impacts and increase schedule reliability in the project corridor during construction.</p>	<p><u>Construction:</u> This alternative would cause the least disruptions to existing railroads during construction because it would be primarily a tunnel alignment. <u>Operation:</u> There would be minimal disruptions because it would be in a mostly tunnel alignment.</p>	<p><u>Construction:</u> This alternative would cause fewer disruptions to existing railroads than the 2018 HSR Project Alternative and would not require the BNSF Components. Additionally, this alternative would not affect existing railroads where it is in a tunnel. <u>Operation:</u> There would be minimal disruptions</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
		<p>necessitate the BNSF Components to maintain freight and passenger rail operations and schedule reliability.</p>	<p>Constructing fewer intermediate stations could also reduce disruptions to existing railroads.</p> <p><u>Operation:</u> This alternative would result in slightly fewer disruptions than the 2018 HSR Project Alternative because it would reduce the number of HSR trains that would affect the project corridor operators and would allow freight and passenger operators to use these tracks. This alternative would necessitate staging tracks to address freight and passenger rail operational impacts and schedule reliability.</p>		<p>because it would be a mostly tunnel alignment.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Minimize disruption to and relocation of utilities	Because there would be no HSR and all the local projects would also be built under the all the alternatives, this alternative would result in the fewest impacts.	This alternative would have the highest disruptions and relocate more utilities along and within railroad ROW because of the addition of new tracks, viaducts, and below-grade segments and new grade separations.	This alternative would have the same disruptions as the 2018 HSR Project Alternative in the project corridor. It would also necessitate staging tracks to address freight and passenger rail construction impacts and freight and passenger rail operational reliability but would not include the Colton Component. Constructing fewer stations could also decrease impacts on utilities.	This alternative would have the least disruption and relocation of utilities because it would be mostly within a tunnel, below existing utilities.	This alternative would have slightly fewer impacts than the 2018 HSR Project Alternative because of some tunnel segments.
Disruptions to Communities					
Displacements	Potential displacements will be analyzed in depth at the project level for each potential future project. Under this alternative, other development projects could create displacement either directly or indirectly.	This alternative would result in the displacement and relocation of 65 residential units and 215 commercial and industrial businesses.	This alternative would result in fewer displacements as the 2018 HSR Project Alternative because it would not include the Colton Component and would include fewer grade separations. Few displacements are anticipated for development of staging tracks, although additional review would be required to confirm impacts.	This alternative would result in the fewest displacements of the build alternatives because it would primarily be within a tunnel. Easements would be needed in areas where the tunnel passes under private property.	This alternative would have fewer impacts than the 2018 HSR Project Alternative because it would not include the BNSF Components. However, this alternative may require additional displacements for grade separations although this would likely result in fewer displacements than the 2018 HSR Project Alternative.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Property with access affected	Potential impacts on property will be analyzed in depth at the project level for each potential future project. Under this alternative, other development projects could affect property either directly or indirectly.	Because of the BNSF Components, this alternative would cause the highest impacts on property access.	This alternative would have slightly fewer impacts than the 2018 HSR Project Alternative because it would not include the Colton Component and would include fewer grade separations. Access impacts for staging tracks are anticipated to be minor.	Because of the mostly tunnel alignment, this alternative would have the fewest impacts.	This alternative would have slightly fewer impacts than the 2018 HSR Project Alternative because it would not include the BNSF Components.
Traffic/transportation	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. 129 intersections and 94 roadway segments in the HSR project corridor would exceed LOS E or F in 2040 for the entire segment.	<u>Construction:</u> Temporary, short-term effects/impacts on traffic flow, circulation, and access are anticipated. <u>Operation:</u> 108 intersections and 65 roadway segments would exceed LOS E or F in 2040.	<u>Construction:</u> Temporary, short-term effects/impacts on traffic flow, circulation, and access are anticipated. With fewer grade separations and potentially fewer stations, construction impacts would be less than those of the 2018 HSR Project Alternative. <u>Operation:</u> Approximately 90+ intersections and approximately 50+ roadway segments would exceed LOS E or F in 2040 with the Colton Component eliminated. With only two HSR trains operating per hour in each direction, LOS and V/C ratios in the project corridor may be less affected than the 2018 HSR Project Alternative.	<u>Construction:</u> Temporary, short-term effects/impacts on traffic flow, circulation, and access are anticipated from construction of the tunnels. Construction would require several hundred trucks per day and traffic impacts would be significant and adverse. <u>Operation:</u> This alternative would have two stations and not have an intermediate station and therefore could result in a small reduction in ridership and a reduced traffic benefit. Higher likelihood of increased delays and greater V/C ratios for intersections and roadways because of a reduction in ridership at	<u>Construction:</u> Temporary, short-term effects/impacts on traffic flow, circulation, and access are anticipated from construction of the tunnels and viaducts. Construction would require several hundred trucks per day and traffic impacts would be significant and adverse. <u>Operation:</u> This alternative would have two stations and not have an intermediate station and therefore could result in a small reduction in ridership and a reduced traffic benefit. This alternative would result in an increase in highway travel compared to the

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
			<p>This alternative could result in an increase in highway travel compared to the 2018 HSR Project Alternative. Development of staging tracks is anticipated to address freight and passenger rail impacts. However, compared with the 2018 HSR Project Alternative, this alternative would have increased freight train volume within the corridor and fewer grade separations, which may result in additional traffic impacts.</p>	<p>several locations. This alternative would result in an increase in highway travel compared to the 2018 HSR Project Alternative.</p>	<p>2018 HSR Project Alternative.</p>
Environmental Resources & Natural Environment					
<p>Air quality/GHG</p>	<p>Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future.</p>	<p><u>Construction:</u> Exceedances of criteria pollutants and exposure to diesel particulate matter, which can cause localized health effects and elevated cancer risks, are anticipated during construction. <u>Operation:</u> Greater improvement of regional air quality because of an anticipated reduction in highway travel.</p>	<p><u>Construction:</u> This alternative would have the same type of impacts as the 2018 HSR Project Alternative except with some reduction in impacts because of the elimination of the Colton Component. Additional impacts may result with construction of staging tracks. <u>Operation:</u> This alternative would improve regional air quality through a reduction in highway travel and</p>	<p><u>Construction:</u> Although this alternative would not include the BNSF Components and would reduce the number of stations, the construction of the tunnels would result in an increase in criteria pollutant and GHG emissions that would be greater than under the 2018 HSR Project Alternative and the Shared Passenger Track Alternative. This alternative has the potential to cause temporary and adverse</p>	<p><u>Construction:</u> This alternative would have similar impacts as the 3A – Freeway Tunnel Alternative. <u>Operation:</u> This alternative would improve regional air quality through a reduction in highway travel and removal of the BNSF Components. However, this alternative would not have an intermediate station and therefore could result in a small reduction in ridership and</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
			removal of the Colton Component. However, this alternative would include fewer HSR operations so a reduction in regional air quality benefit is expected when compared to the 2018 HSR Project Alternative. Development of staging tracks is anticipated to address freight rail impacts and could result in the reduction of emissions caused by trains idling adjacent to any nearby sensitive receptors. Compared with the 2018 HSR Project Alternative, this alternative would have increased freight train volume within the corridor and fewer grade separations, which could result in greater air quality impacts, especially in the vicinity of the Gateway Cities and Hobart Yard.	localized air quality effects, including the exceedance of applicable <i>de minimis</i> thresholds for specific criteria pollutants. In addition, the high concentration of haul trucks and equipment at the tunnel openings has the potential to cause localized health effects and elevated cancer risks. <u>Operation:</u> This alternative would improve regional air quality through a reduction in highway travel and removal of the BNSF Components. However, this alternative would not have an intermediate station and therefore could result in a small reduction in ridership and a reduced air quality benefit.	a reduced air quality benefit.
Noise/vibration	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental	<u>Construction:</u> Construction noise and vibration effects on sensitive receivers ¹ would be adverse and significant with mitigation. <u>Operation:</u> Moderate noise effects are	<u>Construction:</u> Impacts would be reduced when compared to the 2018 HSR Project Alternative with the removal of the Colton Component and potentially an intermediate station.	<u>Construction:</u> Impacts are expected to be minimal with construction of the underground tunnel, as it would limit exposure to sensitive receivers aboveground. Construction noise and	<u>Construction:</u> Impacts may be less severe at some locations, as the project alignment would parallel major infrastructure facilities such as Interstate 5, resulting in a small

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
	<p>analyses performed in the future. Minimal increases in noise (less than 3 dBA; including noise from an increase in other transportation sources such as vehicular, rail and freight trains).</p>	<p>projected at 353 residences, severe noise effects at 49 residences, and ground-borne vibration effects at 87 residences (from freight), requiring mitigation to reduce impacts.</p>	<p>However, construction noise and vibration effects on sensitive receivers would be expected along the alignment, requiring mitigation to reduce impacts. Additional noise and vibration impacts may result with construction of staging tracks.</p> <p><u>Operation:</u> Impacts from noise and vibration would be expected with trains operating at grade crossings, which could be reduced with mitigation measures. There would be less impact on noise-sensitive receivers with reduced operations and the removal of the Colton Component.</p> <p>Development of staging tracks is anticipated to address freight and passenger rail impacts and reduce impacts caused by trains idling adjacent to sensitive receivers.</p>	<p>vibration impacts would be more significant at the ends of each tunnel segment.</p> <p><u>Operation:</u> A reduction in noise impacts is anticipated with the tunnel, as the source to receiver geometry would be blocked. Where alignment returns to the same grade, impacts would occur. The removal of the intermediate station would potentially result in an increase in traffic noise from decreased ridership and increased vehicular transportation sources although traffic would be reduced at the BNSF Components. Vibration impacts would be moderate, except at the at-grade portion of the project alignment where it would be higher; impacts at surrounding noise-sensitive receivers would be moderate, likely requiring mitigation to reduce impacts.</p>	<p>increase over ambient noise. Vibration impacts are expected at noise-sensitive receivers; without the BNSF Components, impacts would be reduced. Noise and vibration impacts associated with tunnel construction would be similar to those of the 3A – Freeway Tunnel Alternative.</p> <p><u>Operation:</u> The project alignment would parallel major infrastructure, which would result in noise levels being higher within the project corridor. The removal of the intermediate station would potentially result in an increase in traffic noise increased vehicular transportation sources. Operational noise and vibration impacts would be severe because the alignment would represent a new noise and vibration source, likely requiring mitigation to reduce impacts.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
EMI/EMF	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in levels of EMF and more occurrences of EMI.	<u>Construction:</u> No adverse effects related to EMI/EMF are anticipated. <u>Operation:</u> Increase in EMI/EMF levels at 32 facilities identified as potentially sensitive. None were determined to have an adverse effect with incorporation of IAMFs and adherence to regulations.	<u>Construction:</u> No adverse effects related to EMI/EMF are anticipated. <u>Operation:</u> Increases in EMI/EMF levels at facilities are identified as potentially sensitive compared to baseline conditions. Adverse effects are unlikely with incorporation of IAMFs and adherence to regulations.	<u>Construction:</u> No adverse effects related to EMI/EMF are anticipated. <u>Operation:</u> Increases in EMI/EMF levels at facilities identified as potentially sensitive would be anticipated compared to baseline conditions but reduced surface impacts would occur with train operations in a tunnel. Adverse effects are unlikely with incorporation of IAMFs and adherence to regulations.	<u>Construction:</u> No adverse effects related to EMI/EMF are anticipated. <u>Operation:</u> Increase in EMI/EMF levels at facilities identified as potentially sensitive would be anticipated compared to baseline conditions but reduced surface impacts would occur with train operations in a tunnel. Adverse effects are unlikely with incorporation of IAMFs and adherence to regulations but within a different, urban corridor.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Public utilities and energy	<p>Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in demand for utility services because of population increases in Los Angeles and Orange Counties.</p>	<p><u>Construction:</u> Temporary interruptions to utility service, possible utility relocation, and temporary increase in solid waste, water, and energy consumption would be anticipated.</p> <p><u>Operation:</u> Increased demand on utilities and energy during operations would be anticipated. Impacts would be less than significant for all impacts except for operational water supply demand.</p>	<p><u>Construction:</u> Temporary interruptions to utility service, utility relocation, and temporary increase in solid waste, water use, and energy consumption would be anticipated.</p> <p><u>Operation:</u> Increased demand on utilities during operations would be anticipated. This alternative would not include the Colton Component and would have reduced rail operations or relocated rail operations associated with staging tracks, which would result in less utility and energy demand compared to an alternative with an additional station or additional service. Impacts would be less than significant for all impacts except for operational water supply demand.</p>	<p><u>Construction:</u> The tunnel alignment would be built deep enough to avoid utility impacts. Additionally, because this alignment would be mostly tunneled, there would be very few road crossings, which would limit utility conflicts. There would be a temporary increase in solid waste, water, and energy consumption during construction.</p> <p>Energy consumption during construction would be greater than under the other alternatives because of the machinery needed for the tunnel alignment.</p> <p><u>Operation:</u> This alternative would not include an intermediate station or the BNSF Components and would result in less utility and energy demand compared to an alternative with an additional station. Impacts would be less than significant for all impacts except for operational water supply demand.</p>	<p><u>Construction:</u> Temporary scheduled interruptions to utility service during construction or utility relocation would be possible.</p> <p>There would be a temporary increase in solid waste, water, and energy consumption during construction.</p> <p>Energy consumption during construction would be substantial because of the machinery needed for the tunnel alignment.</p> <p><u>Operation:</u> Increased demand on utilities during operations would be anticipated but within a different, urban corridor. This alternative would not include an intermediate station or the BNSF Components, which would result in less utility and energy demand compared to an alternative with an additional station. Impacts would be less than significant for all impacts except for operational water supply demand.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Biological and aquatic resources	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Ongoing noise, light, dust, and other forms of pollution would disturb biological resources. Mortality of wildlife from collisions. Indirect effects from runoff into aquatic resources.	<u>Construction:</u> Temporary and permanent direct and indirect effects/impacts on special-status species and habitat, aquatic resources, nesting birds, wildlife movement corridors, and protected trees with mitigation incorporated to reduce impacts. Specifically, one federally and state-listed endangered plant species and 12 federally or state-listed endangered or threatened wildlife species are known or have the potential to occur within this alternative’s project boundaries and could be affected. Impacts on aquatic resources would involve nine at-grade or above-grade crossings. <u>Operation:</u> Permanent intermittent effects/impacts on special-status species and habitat, aquatic resources, wildlife movement corridors, and nesting birds with mitigation incorporated to reduce impacts.	<u>Construction:</u> Temporary and permanent direct and indirect effects/impacts on special-status species and habitat, aquatic resources, nesting birds, wildlife movement corridors, and protected trees with mitigation anticipated. This alternative would not include the Colton Component and would avoid some associated impacts on special-status species and habitat, aquatic resources, and wildlife movement corridors. Impacts on aquatic resources would be the same as those of the 2018 HSR Project Alternative, consisting of nine at-grade or above-grade crossings, although additional impacts related to construction of staging tracks may occur. <u>Operation:</u> Permanent intermittent effects/impacts on special-status species and habitat, aquatic resources, wildlife movement corridors, and nesting birds. This alternative would not	<u>Construction:</u> Temporary and permanent direct and indirect effects/impacts on special-status species and habitat, nesting birds, protected trees, and wildlife movement corridors. Fewer impacts on resources with tunnel construction than if it were built aboveground. This alternative would not include the BNSF Components and would avoid some associated impacts on special-status species and habitat, specifically indirect impacts on the federally listed endangered Delhi Sands flower-loving fly (<i>Rhaphiomidas terminatus abdominalis</i>), and direct impacts on the federally and state-listed threatened desert tortoise (<i>Gopherus agassizii</i>) and wildlife movement corridors. Aquatic resources subject to CWA Section 401 or 404, Porter-Cologne Water Quality Control Act, or CDFW Section 1600 would not be affected. <u>Operation:</u> Temporary effects/impacts on	<u>Construction:</u> Temporary and permanent direct and indirect effects/impacts on special-status species and habitat, nesting birds, protected trees and wildlife movement corridors. This alternative would not include the BNSF Components and would avoid some associated impacts on special-status species and habitat, specifically indirect impacts on the federally listed endangered Delhi Sands flower-loving fly and the federally and state-listed threatened desert tortoise, and wildlife movement corridors. Aquatic resources subject to CWA Section 401 or 404, Porter-Cologne Water Quality Control Act, or CDFW Section 1600 would not be affected. <u>Operation:</u> Temporary effects/impacts on special-status species and habitat, wildlife movement corridors, and nesting birds. This alternative would not include the BNSF

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
			<p>include the Colton Component and would avoid some associated operational impacts on special-status species and habitat and wildlife movement corridors. Impacts are anticipated to be minimal for operation of the staging tracks.</p>	<p>special-status species and habitat, wildlife movement corridors, and nesting birds. Fewer impacts on resources with HSR operation through tunnel than if the alignment was entirely aboveground. This alternative would not include the BNSF Components and would avoid some associated operational impacts on special-status species and habitat and wildlife movement corridors.</p>	<p>Components and would avoid some associated operational impacts on special-status species and habitat and wildlife movement corridors.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Hydrology and water quality	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on surface water quality, drainage, and runoff depending on development.	<p><u>Construction:</u> Surface water quality, drainage, and runoff would experience temporary effects/impacts with mitigation incorporated.</p> <p><u>Operation:</u> Alteration of existing drainage patterns and increased surface water volume or rate caused by increased impervious surface area would result in permanent impacts that are less than significant.</p>	<p><u>Construction:</u> Surface water quality, drainage, and runoff would experience temporary effects/impacts with mitigation incorporated. This alternative would not include the Colton Component and would avoid some associated construction impacts; however, additional impacts related to construction of staging tracks may occur.</p> <p><u>Operation:</u> Alteration of existing drainage patterns and increased surface water volume or rate caused by increased impervious surface area would result in permanent impacts that are less than significant. This alternative would not include the Colton Component and would have reduced or relocated rail operations associated with staging tracks, which would avoid some associated operational impacts.</p>	<p><u>Construction:</u> Surface water quality, drainage, and runoff would experience temporary effects/impacts with mitigation incorporated. Several water crossings or drainage facilities would not be affected because of tunneling. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Alteration of existing drainage patterns and increased surface water volume or rate caused by increased impervious surface area would result in permanent impacts that are less than significant. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>	<p><u>Construction:</u> Surface water quality, drainage, and runoff would experience temporary effects/impacts with mitigation incorporated. Several water crossings or drainage facilities would not be affected because of tunneling. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Alteration of existing drainage patterns and increased surface water volume or rate caused by increased impervious surface area would result in permanent impacts that are less than significant. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
<p>Maximize avoidance of areas with geological and soils constraints</p>	<p>Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on geology and paleontological resources depending on development.</p>	<p><u>Construction:</u> Temporary direct and indirect effects on geology, soils, seismicity, and paleontological resources would not be adverse. <u>Operation:</u> Permanent direct and indirect effects on geology, soils, seismicity, and paleontological resources would not be adverse.</p>	<p><u>Construction:</u> Temporary direct and indirect effects on geology, soils, seismicity, and paleontological resources would not be adverse. This alternative would not include the Colton Component and would avoid some associated construction impacts; however, additional impacts related to construction of staging tracks may occur. <u>Operation:</u> Permanent direct and indirect effects on geology, soils, seismicity, and paleontological resources would not be adverse. This alternative would not include the Colton Component and would have reduced rail operations or relocated rail operations associated with staging tracks, which would avoid some associated operational impacts.</p>	<p><u>Construction:</u> Temporary direct and indirect effects on geology, soils, seismicity and paleontological resources. Potential geotechnical impacts from tunnel construction and surface settlement resulting from excavation and loss of ground. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts. <u>Operation:</u> Permanent direct and indirect effects on geology, soils, seismicity, and paleontological resources would likely not be adverse. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>	<p><u>Construction:</u> Temporary direct and indirect effects on geology, soils, seismicity, and paleontological resources. Potential geotechnical impacts from tunnel construction and surface settlement resulting from excavation and loss of ground. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts. <u>Operation:</u> Permanent direct and indirect effects on geology, soils, seismicity, and paleontological resources would likely not be adverse. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Maximize avoidance of areas with potential hazardous material	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts related to hazardous materials and wastes depending on development.	<p><u>Construction:</u> Increase in the regional transport, use, and disposal of construction-related hazardous material and wastes near schools.</p> <p><u>Operation:</u> Seven PEC sites are within the Colton Component RSA and construction on or near the PEC sites could cause a significant hazard to the public or the environment from release of hazardous materials and waste.</p> <p>Potential effects/impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools would be less than significant/adverse with mitigation.</p>	<p><u>Construction:</u> Reduction in regional transport, use, and disposal of construction-related hazardous material and wastes near schools with the removal of the Colton Component; however, additional impacts related to construction of staging tracks may occur.</p> <p><u>Operation:</u> Potential effects/impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools would be reduced with the removal of the Colton Component in comparison to the 2018 HSR Project Alternative especially with 7 fewer PEC sites within the RSA. Additional impacts related to operation of staging tracks may occur</p>	<p><u>Construction:</u> Impacts from regional transport, use, and disposal of construction-related hazardous material and wastes near schools including spoils from tunnel excavation. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Potential effects/impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools would be minimal with the tunnel operating and the removal of the BNSF Components and the intermediate station.</p>	<p><u>Construction:</u> Impacts from regional transport, use, and disposal of construction-related hazardous material and wastes near schools including spoils from tunnel excavation. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Potential effects/impacts from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools would be moderate with the removal of the BNSF Components and the intermediate station.</p>
Safety and security	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the	<p><u>Construction:</u> Temporary physical changes and temporary effects on the safety of construction workers and the public. Construction of the Colton and Lenwood Components, as well as a potential, additional</p>	<p><u>Construction:</u> Temporary physical changes and temporary effects on the safety of construction workers and the public. This alternative would not include the Colton Component and would avoid associated</p>	<p><u>Construction:</u> There would be increased safety risks to construction workers from the tunnel alignment. In addition, and as noted for air quality, the high concentration of haul trucks and equipment at</p>	<p><u>Construction:</u> Temporary physical changes and temporary effects on the safety of construction workers and the public. In addition, and as noted for air quality, the high concentration of haul trucks and equipment at</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
	<p>future. Potential increases in impacts related to safety and security risks depending on development.</p>	<p>intermediate station, could increase the project footprint and construction safety/security risks. <u>Operation:</u> Safety hazards during operation could include slowed emergency response times because of grade crossings and risks related to human- and vehicle-rail interactions. Operation of the Colton Component would likely fall under the Authority’s purview and therefore increase safety and security risks. Operation of a second intermediate station would also increase safety and security considerations.</p>	<p>construction impacts. Additional impacts related to access during construction of staging tracks may occur. <u>Operation:</u> Safety hazards during operation could include slowed emergency response times because of grade crossings and risks related to human- and vehicle-rail interactions. While there would be more at-grade crossings than with the 2018 HSR Project Alternative, operating fewer HSR trains could mitigate some of the associated safety risks. This alternative would not include the Colton Component and would avoid some associated operational impacts.</p>	<p>the tunnel openings has the potential to cause localized health effects and elevated cancer risks. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts. <u>Operation:</u> Because of the tunnel alignment and the grade separation, there would be anticipated safety benefits from reduced hazards related to human- and vehicle-rail interactions and improved emergency service response times compared to an at-grade alignment. Safety hazards would be reduced compared to baseline conditions with the removal of the BNSF Components and the intermediate station.</p>	<p>the tunnel openings has the potential to cause localized health effects and elevated cancer risks. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts. <u>Operation:</u> Safety hazards during operation of trains would be reduced through the conversion of at-grade crossings to overhead and underground crossings, thereby reducing risk of human- and vehicle-rail interactions. Safety hazards would be reduced further with the removal of the BNSF Components and the intermediate station.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Socioeconomics and communities	All planned developments under the No Project Alternative would undergo environmental review, and it is presumed that alteration to existing land use patterns and conflicts with existing land uses would be analyzed and mitigated.	<p><u>Construction:</u> Temporary disruption to adversely affect community cohesion or division of existing communities. Construction has the potential to stimulate short-term employment, estimated to be 36,900 additional direct, indirect, and induced job years.</p> <p><u>Operation:</u> Employment and sales tax revenue would be a net benefit to the region. Approximately 5,690 additional direct, indirect, and induced jobs would be provided. Ongoing project operations would not physically divide established communities.</p>	<p><u>Construction:</u> Temporary disruption to adversely affect community cohesion or division of existing communities. Construction has the potential to stimulate short-term employment. This alternative would not include the Colton Component and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Employment and sales tax revenue would be a net benefit to the region. Ongoing project operations would not physically divide established communities. This alternative would not include the Colton Component and would avoid some associated operational impacts; however, additional impacts related to staging tracks may occur.</p>	<p><u>Construction:</u> Temporary disruption to adversely affect community cohesion or division of existing communities along the alignment. Construction has the potential to stimulate short-term employment. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Employment and sales tax revenue would be a net benefit to the region, although with no BNSF Components or an intermediate station, this would be less than under other alternatives with BNSF Components or an intermediate station. Ongoing project operations would not physically divide established communities. No BNSF Components or an intermediate station would result in fewer community benefits to communities within the alignment.</p>	<p><u>Construction:</u> Temporary disruption to adversely affect community cohesion or division of existing communities along the alignment. Construction has the potential to stimulate short-term employment. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts.</p> <p><u>Operation:</u> Employment and sales tax revenue would be a net benefit to the region, although with no intermediate station, this would be less under than alternatives with BNSF Components and an intermediate station. Ongoing project operations would not physically divide established communities. No BNSF Components or an intermediate station would result in fewer community benefits to communities within the alignment.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
<p>Station planning, land use, and development</p>	<p>Current plans and policies will encourage compact development and investment in transit to reduce GHG emissions. However, this alternative does not include the HSR project and thus would not help reduce GHG emissions as envisioned by the 2016 RTP/SCS and other relevant planning documents or stimulate TOD.</p>	<p><u>Construction:</u> Temporary alteration of existing land use patterns. <u>Operation:</u> Permanent conversion of existing and planned land uses to transportation uses and potential disruptions to planned developments would be anticipated.</p>	<p><u>Construction:</u> Temporary alteration of existing land use patterns. <u>Operation:</u> Permanent conversion of existing and planned land uses to transportation uses and potential disruptions to planned developments would be anticipated. However, this alternative would not include the Colton Component and include fewer grade separations and potentially fewer stations, which would reduce associated land use changes and impacts; however, additional impacts related to staging tracks may occur.</p>	<p><u>Construction:</u> Temporary alteration of existing land use patterns. <u>Operation:</u> Permanent conversion of existing and planned land uses to transportation uses and potential disruptions to planned developments would be possible. However, permanent land use impacts would likely be reduced by the largely tunnel alignment and fewer benefits related to TOD. Additionally, this alternative would not include the BNSF Components or an intermediate station and would reduce associated land use changes and impacts.</p>	<p><u>Construction:</u> Temporary alteration of existing land use patterns. <u>Operation:</u> Permanent conversion of existing and planned land uses to transportation uses and potential disruptions to planned developments would be anticipated. However, this alternative would not include the BNSF Components or an intermediate station and would reduce associated land use changes and impacts and result in fewer benefits related to TOD.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Agriculture farmland and forest land	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. No effects/impacts are anticipated.	<u>Construction:</u> No Important Farmland or forest land is present within the HSR project corridor or the Colton Component. However, the Lenwood Component includes land in agricultural use. Temporary impacts could include the temporary use of Important Farmland and disruption of access or utilities during construction activities. <u>Operation:</u> No impacts on agricultural farmland or forest land during operations are anticipated.	<u>Construction:</u> Impacts could include the temporary use of Important Farmland and disruption of access or utilities during construction activities of the staging tracks as mitigation. <u>Operation:</u> No impacts on agricultural farmland or forest land during operations are anticipated.	<u>Construction:</u> No Important Farmland or forest land is located within the proposed project area in a different urban corridor. No construction impacts are anticipated. This alternative would not include the Lenwood Component with land in agricultural use and would avoid associated construction impacts. <u>Operation:</u> No impacts during operations are anticipated.	<u>Construction:</u> No Important Farmland or forest land is located within the proposed project area in a different urban corridor. No construction impacts are anticipated. This alternative would not include the Lenwood Component with land in agricultural use and would avoid associated construction impacts. <u>Operation:</u> No impacts during operations are anticipated.
Parks, recreation, and open space	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on parks and recreational uses depending on development.	<u>Construction:</u> Temporary construction effects/ impacts include park access disruptions, noise, dust, air quality, and visual degradation for 20 parks and trails. <u>Operation:</u> During operations, noise from passing trains and maintenance activities would be audible, and visual changes from HSR infrastructure would occur. However, because resources are used for	<u>Construction:</u> Temporary construction effects/ impacts include park access disruptions, noise, dust, air quality, and visual degradation for parks and trails. This alternative would not include the Colton Component and would result in fewer impacts compared to an alternative with an additional station. <u>Operation:</u> During operations, noise from	<u>Construction:</u> Temporary construction effects/ impacts include park access disruptions, noise, dust, air quality, and visual degradation for parks and trails. This alternative would be mostly below grade and would not include the BNSF Components or an intermediate station, which would reduce or avoid potential impacts on parks, recreation, and open space.	<u>Construction:</u> Temporary construction effects/ impacts include park access disruptions, noise, dust, air quality, and visual degradation for parks and trails. This alternative would be partially below grade and would not include the BNSF Components or intermediate station, which would reduce or avoid potential impacts on parks, recreation, and open space.

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
		<p>active recreation, users are not highly sensitive to noise or visual changes, and noise from and presence of HSR infrastructure would not detract from the regular use of the resources.</p>	<p>passing trains and maintenance activities would be audible, and visual changes from HSR infrastructure would occur. However, because the resources are used for active recreation, users are not highly sensitive to noise or visual changes, and the noise from and presence of HSR infrastructure would not detract from the regular use of the resources. This alternative would not include the Colton Component and would have reduced or relocated rail operations, which would avoid some associated operational impacts, although additional impacts related to staging tracks may occur.</p>	<p><u>Operation:</u> During operations, noise from passing trains and maintenance activities would be audible, and visual changes from HSR infrastructure for the portions of the alignment at grade or above grade would occur. For the portions of the alignment below grade in a tunnel, operational noise and visual effects would be substantially lessened or avoided. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>	<p><u>Operation:</u> During operations, noise from passing trains and maintenance activities would be audible, and visual changes from HSR infrastructure for the portions of the alignment at grade or above grade would occur. For the portions of the alignment below grade in a tunnel, operational noise and visual effects would be substantially lessened or avoided. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Aesthetics and visual quality	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on aesthetics and visual quality depending on development.	<p><u>Construction:</u> Permanent visual changes would be associated with station site reconstruction and project elements such as grade separations and overhead catenary lines to areas adjacent to or within viewing range. Impacts would be adverse/significant for with mitigation historic bridges.</p> <p><u>Operation:</u> Adverse/significant impacts anticipated with mitigation for historic bridges.</p>	<p><u>Construction:</u> Permanent visual changes would be associated with station site reconstruction and project elements such as grade separations and overhead catenary lines to areas adjacent to or within viewing range. This alternative would not include the Colton Component and include fewer grade separations and potentially fewer stations, which would avoid some associated construction impacts; however, additional impacts related to construction of staging tracks may occur. Impacts would be adverse/significant with mitigation for historic bridges.</p> <p><u>Operation:</u> Adverse/significant impacts anticipated with mitigation for historic bridges.</p>	<p><u>Construction:</u> Permanent visual changes would be minimal with removal of BNSF Components and the intermediate station site reconstruction, fewer grade separations, and fewer overhead catenary lines because of the tunnel alignment adjacent to or within viewing range. Impacts would be adverse/significant with mitigation for historic bridges.</p> <p><u>Operation:</u> Minimal visual impact with rail mostly underground. The aboveground segments impact would differ from that of the current alternative because rail would be elevated versus at grade. This would reduce other conflicts but create more visibility. Adverse/significant impacts anticipated with mitigation for historic bridges.</p>	<p><u>Construction:</u> Permanent visual changes would be minimal with removal of BNSF Components and the intermediate station site reconstruction. Permanent visual changes would be associated with station site reconstruction and project elements such as grade separations and overhead catenary lines to areas adjacent to or within viewing range. New viaducts would be visible where present, permanently affecting the visual setting. Impacts would be adverse/significant with mitigation for historic bridges.</p> <p><u>Operation:</u> Potential adverse effect anticipated for viaducts and historic bridges.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
<p>Minimize impacts on cultural resources</p>	<p>Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on historic architecture and archaeological resources depending on development.</p>	<p><u>Construction:</u> Approximately five archaeological sites identified as potentially affected during construction; no impact on one archaeological site. Four historic properties would be adversely affected by construction, approximately 21 historic properties would have no adverse effect, and one historic property would have no effect.</p> <p><u>Operation:</u> No effects on archaeological resources are anticipated. No adverse effect on approximately 26 historic properties and no effect on one historic property.</p>	<p><u>Construction:</u> Approximately four archaeological sites identified as potentially affected during construction without the Colton Component; no impact on one archaeological site. Four historic properties would be adversely affected by construction, approximately 21 historic properties would have no adverse effect, and one historic property would have no effect. Additional impacts related to construction of staging tracks may occur.</p> <p><u>Operation:</u> No effects on archaeological resources are anticipated; however, additional impacts related to staging tracks may occur. No adverse effect on approximately 26 historic properties and no effect on one historic property.</p>	<p><u>Construction:</u> Approximately three archaeological sites identified as potentially affected during construction without the BNSF Components and an intermediate station; no impact on one archaeological site. There may be additional, unknown archaeological properties that could be affected. Four historic properties would be adversely affected by construction. Other historic properties may be adversely affected where demolition is proposed; however, historic properties are most likely to have no adverse effect or no effect although new areas would be evaluated. The tunnel would reduce some surface impacts.</p> <p><u>Operation:</u> Likely a range of no adverse effect and no effect on historic archaeological and architectural properties, although new areas would be evaluated.</p>	<p><u>Construction:</u> There may be unknown archaeological properties that could be affected. Four historic properties would be adversely affected by construction without the BNSF Components and an intermediate station, and other historic properties identified would likely have no adverse effect or no effect although new areas would be evaluated; however, if demolition is required there may be an adverse effect. The tunnel would reduce some surface impacts.</p> <p><u>Operation:</u> Likely a range of no adverse effect and no effect on historic archaeological and architectural properties, although new areas would be evaluated.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
<p>Section 4(f)/6(f) resources</p>	<p>Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future. Potential increases in impacts on Section 4(f) and 6(f) resources including cultural and recreational resources depending on development.</p>	<p><u>Construction:</u> Temporary occupancies of four parks and recreation resources are anticipated.</p> <p><u>Operation:</u> Permanent use of four historic properties and <i>de minimis</i> impact on seven parks and recreation resources and two historic properties are anticipated. No effects on Section 6(f) resources.</p>	<p><u>Construction:</u> Temporary occupancies of parks and recreation resources are anticipated. There would be fewer construction impacts because of the removal of the Colton Component. Additional impacts related to construction of staging tracks may occur.</p> <p><u>Operation:</u> Potential for permanent use of archaeological sites and historic properties and <i>de minimis</i> impact on parks and recreation resources and historic properties are anticipated. This alternative would not include the Colton Component and would have reduced or relocated rail operations, which would avoid some associated operational impacts; however, additional impacts related to staging tracks may occur. No effects on Section 6(f) resources anticipated.</p>	<p><u>Construction:</u> Temporary occupancies of parks and recreation resources are anticipated, although impacts would be limited because of the tunnel alignment and removal of BNSF Components and an intermediate station.</p> <p><u>Operation:</u> Potential for permanent use of archaeological sites and historic properties and <i>de minimis</i> impact on parks and recreation resources and historic properties are anticipated. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts. No effects on Section 6(f) resources anticipated.</p>	<p><u>Construction:</u> Temporary occupancies of parks and recreation resources are anticipated, although impacts would be limited because of the tunnel alignment and removal of BNSF Components and an intermediate station.</p> <p><u>Operation:</u> Potential for permanent use of archaeological sites and historic properties and <i>de minimis</i> impact on parks and recreation resources and historic properties are anticipated. This alternative would not include the BNSF Components and the intermediate station and would avoid some associated operational impacts. No effects on Section 6(f) resources anticipated.</p>

Consideration	No Project Alternative	2018 HSR Project Alternative	Shared Passenger Track Alternative	3A – Freeway Tunnel Alternative	3B – UPRR Alignment Alternative
Environmental justice	Construction and operational effects associated with future infrastructure and development projects are not known at this time and would be subject to separate environmental analyses performed in the future to identify and minimize effects on affected communities, including potential disproportionate adverse impacts on low-income or minority populations.	Construction and operation of the 2018 HSR Project Alternative could result in temporary and permanent adverse effects associated with hazardous materials and wastes; air quality; noise and vibration; and archaeological and historic resources. With IAMFs and mitigation measures, effects would be reduced and there would not be a disproportionately high and adverse effect on environmental justice populations. Environmental justice communities may experience benefits for community cohesion, economic vitality, residents and business, employment, and transportation.	<u>Construction:</u> Impacts similar to the 2018 HSR Project Alternative could result in adverse effects on environmental justice populations. There would be fewer construction impacts because of the removal of the Colton Component. <u>Operation:</u> Physical changes associated with the project corridor (e.g., noise from operating trains) would be expected. IAMFs and mitigation measures would reduce disproportionately high and adverse effects on environmental justice populations. Environmental justice communities may experience benefits as well.	<u>Construction:</u> This alternative would not include the BNSF Components and would avoid some associated construction impacts. <u>Operation:</u> This alternative would not include the BNSF Components and would avoid some associated operational impacts.	<u>Construction:</u> This alternative would not include the BNSF Components and the intermediate station and would avoid some associated construction impacts. <u>Operation:</u> This alternative would not include the BNSF Components and would avoid some associated operational impacts.

Source, Authority, 2022

¹ Sensitive receivers include, but are not limited to: residential dwellings; schools; churches; hospitals; parks; amphitheatres; auditoriums; campgrounds; cemeteries; daycare centers; hospitals; libraries; parks; picnic areas; playgrounds; public meeting rooms; public or nonprofit institutional structures; radio, television, and recording studios; recreation areas and, in some cases, trails; and historic properties. ARTIC = Anaheim Regional Transportation Intermodal Center; BNSF = BNSF Railway; CDFW = California Department of Fish and Wildlife; CWA = Clean Water Act; dBA = A-weighted decibel; EMF = electromagnetic fields; EMI = electromagnetic interference; GHG = greenhouse gas; HSR = high-speed rail; IAMF = impact avoidance and minimization feature; LAUS = Los Angeles Union Station; LOS = level of service; LOSSAN Corridor = Los Angeles – San Diego – San Luis Obispo Rail Corridor; Metro = Los Angeles County Metropolitan Transportation Authority; OCTA = Orange County Transportation Authority; PEC = potential environmental concern; ROW = right-of-way; RSA = resource study area; RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy; TOD = transit-oriented development; UPRR = Union Pacific Railroad; V/C = volume to capacity

4.2 Summary of Adverse Effects under the National Environmental Policy Act and Significant Impacts under CEQA

Please refer to Chapter 2, Methodology, of this document that details the alternative analysis process as described in the *Technical Memorandum: Alternatives Analysis Methods for Project EIR/EIS*, Version 3 (Authority 2011) and *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Version 5.10 (Authority 2020).

4.2.1 Traffic/Transportation

Construction of all four build alternatives is expected to cause temporary, short-term effects on traffic flow, circulation, and access. During peak construction periods, work could occur concurrently in different geographically distinct locations, with overlapping construction of various project elements and longer-term impacts during construction. Implementation of construction best practices and impact avoidance and minimization features (IAMF) would minimize these effects. The HSR program is predicated on reducing daily roadway vehicle miles traveled, regionally and statewide, with the expectation that it will be preferred over other modes of transportation by commuters and travelers. Construction impacts are expected to be greatest for the 3A – Freeway Tunnel Alternative with construction of approximately 23 miles of underground tunnel in an urbanized area. The 3B – UPRR Alignment Alternative would require 8.3 miles of underground tunnel construction, approximately 15 fewer miles than the 3A – Freeway Tunnel Alternative, resulting in fewer impacts. Both the 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would not have any intermediate stations, which could reduce ridership and therefore the alternatives' ability to reduce vehicle miles traveled. The Shared Passenger Track Alternative is expected to have the least construction impacts because of the removal of the Colton Component, fewer grade separations, potentially fewer stations, and minimal excavation for underground tunnels. The Shared Passenger Track Alternative would include fewer rail operations than the 2018 HSR Project Alternative, and therefore could result in a reduced traffic benefit. Operationally, compared with the 2018 HSR Project Alternative, the Shared Passenger Track Alternative would have increased freight train volume within the corridor and fewer grade separations, which may result in additional traffic impacts. The Shared Passenger Track Alternative would require the addition of staging tracks outside the project corridor to mitigate impacts of HSR project construction and maintain passenger and freight rail resiliency resulting in similar construction-related impacts on freight rail service in comparison to the 2018 HSR Project Alternative.

Under the No Project Alternative, trends in commercial and residential development and population are anticipated to continue, leading to increased congestion on regional roadways despite planned transportation improvements because anticipated growth would outpace roadway expansion. Intersection and roadway segment conditions would therefore deteriorate from existing conditions. In contrast, the 2018 HSR Project Alternative is expected to provide the highest reduction in vehicle miles traveled of the four build alternatives, reducing congestion, and improving intersection and roadway conditions.

4.2.2 Air Quality/Greenhouse Gases

The project corridor falls under the jurisdiction of the South Coast Air Quality Management District. The BNSF Components of the 2018 HSR Project Alternative and staging track mitigation for the Shared Passenger Track Alternative fall under the jurisdiction of the Mojave Desert Air Quality Management District. Both districts have adopted their own distinct local thresholds of significance. To compare emissions to the federal and state thresholds, activities occurring within each air district will be quantified and analyzed separately in the future. Construction of the build alternatives has the potential to cause temporary and adverse localized air quality effects, including the exceedance of applicable *de minimis* state and federal thresholds for specific criteria pollutants. Compliance with existing federal and regulatory requirements and implementation of IAMFs would minimize potential effects associated with construction activities for criteria pollutants but not all emissions of criteria pollutants are expected to be reduced to below South Coast Air Quality Management District and Mojave Desert Air Quality Management District threshold levels. Implementation of mitigation measures during construction would reduce emissions and exposure to diesel particulate matter by reducing fugitive dust and exhaust from construction and on-road vehicles. Final air quality modeling

for construction activities for each build alternative would confirm the emissions of criteria pollutants and any mitigation measures required to reduce emissions. With construction of the Colton Component as part of the 2018 HSR Project Alternative, impacts would be greater in comparison to the Shared Passenger Track Alternative. However, compared with the 2018 HSR Project Alternative, the Shared Passenger Track Alternative would have increased freight train volume within the corridor, which may result in additional air quality impacts, specifically within the Gateway Cities and Hobart Yard area. Development of staging tracks is anticipated to address freight and passenger rail impacts and could result in the reduction of emissions caused by trains idling adjacent to any nearby sensitive receptors, although additional impacts during construction would occur. The increase in equipment and haul trucks required to build the tunnels and viaducts for both the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would be greater than the reduction associated with the removal of the BNSF Components where truck traffic continues to contribute to air pollution in the Inland Empire, and the intermediate station. In addition, the increase in activity near the tunnel openings could result in localized health effects and elevated cancer risks. Therefore, the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would have a greater impact during construction than the 2018 HSR Project and Shared Passenger Track Alternatives.

The build alternatives are predicted to reduce daily roadway vehicle miles traveled regionally and statewide as a result of travelers using HSR rather than driving. As the Shared Passenger Track Alternative would include fewer rail operations, a small reduction in regional air quality benefits within the project corridor could occur when compared to the 2018 HSR Project Alternative. The on-road vehicle emissions analysis is based on vehicle miles traveled changes and associated average daily speed estimates, calculated for each affected county (Los Angeles and Orange). These reductions associated with mode shift from vehicles to HSR would result in lower pollutant emissions. Overall, there would be fewer benefits for the No Project Alternative without HSR service, and potentially a small reduction in ridership and fewer benefits with the removal of an intermediate station for the 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative.

4.2.3 Noise/Vibration

The 2018 HSR Project Alternative would have adverse and significant construction noise and vibration impacts on sensitive receivers along the corridor. The Shared Passenger Track Alternative would affect fewer sensitive receivers because this alternative would not include the Colton Component, although additional receivers could be affected at the staging tracks. The 3B – UPRR Alignment Alternative would include 8.3 miles of tunnel alignment and avoid the BNSF Components and the intermediate station and would affect even fewer sensitive receivers as a result. The 3A – Freeway Tunnel Alternative would limit exposure to sensitive receptors aboveground. Construction noise impacts would be expected at access tunnels below the surface, but greater vibration impacts would be expected, which would likely be reduced with mitigation below the impact thresholds. Operational impacts from noise and vibration would be expected for all four build alternatives from at-grade crossings. The 3B – UPRR Alignment Alternative would also result in higher noise levels within the project corridor because the alignment would parallel major transportation infrastructure and cause potentially more severe vibration impacts, as the alignment would represent a new vibration source within this project alignment. The Shared Passenger Track Alternative would have reduced operational impacts with inclusion of mitigation measures, the removal of the Colton Component, and development of staging tracks, which would reduce impacts caused by trains idling adjacent to sensitive receivers. The 3A – Freeway Tunnel Alternative would have the least impacts on noise and vibration because a large portion of the alignment would operate in an underground tunnel. Under the No Project Alternative, temporary or permanent increases in noise or vibration from construction and operation of the HSR project would be avoided. However, population in the region would continue to grow and changes in noise and vibration sources from development projects and infrastructure improvements along with additional rail and road traffic could cause localized noise and vibration impacts.

4.2.4 Electromagnetic Interference/Electromagnetic Fields

None of the four build alternatives would be anticipated to have adverse effects on electromagnetic interference/electromagnetic fields (EMI/EMF) as a result of construction; however, coordination with

the Federal Aviation Administration has not begun as a part of this process and issues or conflicts anticipated with equipment have not been fully vetted. All the build alternatives would result in an increase in EMI/EMF levels at facilities identified as potentially sensitive compared to baseline levels. However, the incorporation of IAMFs and adherence to regulations would make adverse effects unlikely for any of the build alternatives. EMI/EMF impacts for the selected alternatives brought forward for evaluation in the EIR/EIS will be confirmed in consultation with the Federal Aviation Administration at a later time, specifically for the build alternatives that are in closer in proximity to Fullerton Airport. Under the No Project Alternative, temporary construction impacts and permanent changes from operations on EMI/EMF as a result of the HSR project would be avoided.

4.2.5 Public Utilities and Energy

All four build alternatives would be anticipated to have impacts on utility service and energy use during construction. However, the 3A – Freeway Tunnel Alternative would likely have the least impact on public utilities because the approximately 23 miles of tunnel alignment would be built deep enough to avoid conflicts with utilities, although energy consumption during construction would be significant because of the machinery needed for the tunnel alternatives. The 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would not include the BNSF Components, an intermediate station, or additional service, which would reduce operational utility and energy demands compared to the 2018 HSR Project Alternative. The Shared Passenger Track Alternative would also not include the Colton Component; however, this alternative would likely have slightly greater operational utility and energy demands than the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives because of the development of staging tracks to address freight and passenger rail impacts. Impacts on public utilities and energy as a result of the No Project Alternative are not known at this time and would be subject to separate environmental analysis. However, there would be anticipated increases in the demand for utility services because of population increases in Los Angeles and Orange Counties.

4.2.6 Biological and Aquatic Resources

All four build alternatives would be anticipated to have impacts on special-status species and habitat, nesting birds, wildlife movement corridors, and protected trees, even with IAMFs incorporated as part of the alternatives and mitigation implemented during construction. For the 3A – Freeway Tunnel Alternative, it is expected that there will be no effects on listed species. Adverse effects on federally and state-listed species are not anticipated. Temporary direct effects on special-status plant species are expected, but permanent effects are not anticipated. Aquatic resources subject to CWA Section 404, CWA Section 401, Porter-Cologne Water Quality Control Act, or California Department of Fish and Wildlife Section 1600 jurisdiction would not be affected. Furthermore, with the elimination of both BNSF Components, impacts on biological and aquatic resources would be reduced in comparison with the 2018 HSR Project Alternative.

For the Shared Passenger Track Alternative, temporary and permanent direct effects on special-status plant species would be expected. Depending on where the staging tracks are built, it is possible that there will be concurrence from the U.S. Fish and Wildlife Service with a finding of *may affect and likely to adversely affect* for desert tortoise and a finding of *may affect but not likely to adversely affect* for least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo. If required, a Biological Opinion and incidental take permit would be obtained for impacts on the desert tortoise related to the development of staging tracks. Impacts on aquatic resources would be the same as those of the 2018 HSR Project Alternative, as both alternatives contain nine at-grade or above-grade crossings. Furthermore, with the elimination of the Colton Component, impacts on aquatic resources like the features associated with the Santa Ana River would be reduced in comparison with the 2018 HSR Project Alternative.

For the 3B – UPRR Alignment Alternative, construction effects on biological and aquatic resources are expected to be similar to those for 2018 HSR Project Alternative, except for impacts associated with the BNSF Components. The elimination of these components would reduce impacts on resources overall in comparison with the 2018 HSR Project Alternative. There may be fewer impacts on resources with tunnel construction for the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives than in locations where the alignment would otherwise be built at grade or above grade. Operational effects for all the build alternatives are anticipated to differ regarding impacts based on

the presence or absence of biological resources in the alignment. There would be no operational effects on aquatic resources for 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative. In addition, these two alternatives would not include the BNSF Components and would avoid all operational impacts on biological resources associated with these components. The 3A – Freeway Tunnel Alternative would avoid all aboveground impacts on biological resources whenever the alignment was below ground. The Shared Passenger Track Alternative would not include the Colton Component and would therefore avoid all operational impacts on biological resources associated with this component. Under the No Project Alternative, infrastructure and development projects would continue and result in associated direct and indirect effects on biological and aquatic resources.

4.2.7 Hydrology and Water Resources

All four build alternatives would be anticipated to have temporary impacts on surface water quality, drainage, and runoff, even with IAMFs and mitigation incorporated during construction. However, the 3A – Freeway Tunnel Alternative would likely have the least impact on surface water quality and runoff impacts as a result of fewer miles of aboveground impervious surfaces. However, construction of the tunnel would require substantial quantities of water and would create wastewater. Additionally, tunneling may have impacts on subsurface hydrological features. The 2018 HSR Project Alternative would have greater impacts because of the inclusion of the BNSF Components and the intermediate stations. During operation, alteration of existing drainage patterns and increased surface water volume or rate from increased impervious surface area resulting from the build alternatives would result in permanent impacts that are less than significant.

The Shared Passenger Track Alternative would have fewer water crossing impacts than the 2018 HSR Project Alternative because of the elimination of the Colton Component; however, additional impacts related to construction of staging tracks may occur. The 3A – Freeway Tunnel Alternative would not have any water crossings because it would be in a tunnel at these locations. Table 4-2 shows the anticipated impacts from the 3B – UPRR Alignment Alternative, which would be less than those of the 2018 HSR Project Alternative and the Shared Passenger Track Alternative. Impacts on hydrology and water resources as a result of the No Project Alternative are not known at this time and would be subject to continued environmental analysis, and could result in potential increases in impacts depending on development.

Table 4-2 Union Pacific Railroad Alignment (3B) Alternative Water Crossings

Water Crossing	Existing Structure Configuration	Proposed Structure Configuration	Bridge Pier Area (acres)
Los Angeles River	4-span bridge with 3 wall type piers	3-span bridge with two 2-column piers	0.003
Rio Hondo Channel	3-span bridge with 2 wall type piers	3-span bridge with 2 wall type piers	0.01
San Gabriel River	5-span bridge with 4 wall type piers	4-span bridge with three 3-column piers	0.01
La Mirada Creek	3-span bridge with 2 wall type piers	Multispan areal bridge with two 1-column piers with water crossing	0.002
Coyote Creek	3-span bridge with 2 wall type piers	3-span bridge with two 2-column type piers	0.003

Given that all alternatives are expected to affect less than 0.5 acre of waterway area at all water crossings, it is expected that all alternatives can use the Nationwide Permit approach for permitting with the U.S. Army Corps of Engineers.

4.2.8 Geology, Soils, Seismicity, and Paleontological Resources

All four build alternatives would be anticipated to have temporary direct and indirect effects on geology, soils, seismicity, and paleontological resources during construction. The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would have increased geotechnical impacts because of tunnel construction and surface settlement resulting from excavation. However, the 3A – Freeway Tunnel Alternative would likely have the greater impact because of the larger amount of tunnel construction. The 2018 HSR Project Alternative would likely have the greatest impacts of the four build alternatives because of the inclusion of the BNSF Components and the intermediate stations. The Colton Component would be built in an area subject to seismic events, and the risk of soil failure would increase with the occurrence of a large seismic event. This site was formerly used by an extractive mining and cement processing plant that is presently undergoing reclamation activities. The Colton Component would also affect the Santa Ana River, categorized as MRZ-2b, meaning the presence of mineral resources is inferred. During operation, permanent direct and indirect effects on geology, soils, seismicity, and paleontological resources would likely not be adverse and would be similar among the four build alternatives. Under the No Project Alternative, infrastructure and development projects to accommodate population growth in Los Angeles and Orange Counties would continue and could result in associated impacts on geology, soils, seismicity, and paleontological resources.

4.2.9 Hazardous Materials and Wastes

All four build alternatives would be anticipated to increase the regional transport, use, and disposal of construction-related hazardous material and wastes. The 2018 HSR Project Alternative would have the greatest impact because of the inclusion of the BNSF Components. During construction and operation within the Colton Component resource study area, potential effects/impacts may result from hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of existing schools. This could pose a health or safety hazard to students or employees in the event of a release of hazardous materials and wastes, which would be a significant impact under CEQA. Mitigation measures would be implemented to reduce impacts to a less-than-significant level under CEQA. The No Project Alternative, the 3A – Freeway Tunnel Alternative, 3B – UPRR Alignment Alternative, and Shared Passenger Track Alternative would have fewer impacts than the 2018 HSR Project Alternative because they do not include either of the BNSF Components. However, additional impacts related to development of staging tracks may result from the Shared Passenger Track Alternative. Seven potential environmental concern sites associated with the Colton Component and construction on or near these sites could cause a significant hazard to the public or the environment from release of hazardous materials and waste.

4.2.10 Safety and Security

Construction of all four build alternatives would temporarily affect the safety of construction workers and the public. Because of the hazards of working underground, the 3A – Freeway Tunnel Alternative would be anticipated to have the greatest impact on construction worker safety through tunnel construction and resulting excavation. All four build alternatives would be anticipated to have impacts on safety during operations where the alignment has at-grade crossings, creating delay for emergency response vehicles. Below-grade sections could pose a hazard for emergency access and HSR passenger and HSR personnel evacuation within tunnel portions of the alignments. However, because the majority of the 3A – Freeway Tunnel Alternative alignment would be below grade, it would be expected to have the least impact on safety and security during operations, including reduced hazards related to potential human- and vehicle-rail interactions and improved emergency service response times. The Shared Passenger Track Alternative would run fewer trains and only have one intermediate station as compared to the 2018 HSR Project Alternative; however, fewer grade separations could result in additional impacts on emergency service response times. Development of staging tracks as mitigation for the Shared Passenger Track Alternative is anticipated to address operational freight and passenger rail impacts and could result in the reduction of impacts caused by trains idling adjacent to any nearby sensitive receptors. Coordination with the Federal Aviation Administration associated with the 7460 process (Obstruction Evaluation/Airport Airspace Analysis) has not begun as a part of this project and issues or conflicts associated with obstructions

have not been fully vetted. Potential impacts for the selected alternatives brought forward for evaluation in the EIR/EIS will be confirmed in consultation with the Federal Aviation Administration, specifically for the build alternatives that are in closer in proximity to Fullerton Airport. Under the No Project Alternative, infrastructure and development projects to accommodate population growth in Los Angeles and Orange Counties would continue and would result in associated direct and indirect impacts on safety and security.

4.2.11 Socioeconomics and Communities

All four build alternatives would be anticipated to stimulate short-term employment and have temporary, adverse impacts on community cohesion, division of existing communities, and displacement of businesses during construction. However, the 3A – Freeway Tunnel Alternative would likely have the fewest aboveground impacts because of tunneling. Ongoing project operations for the four build alternatives would not physically divide established communities and would provide employment and sales tax revenue and additional direct, indirect, and induced jobs. The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would have less employment and sales tax revenue than the 2018 HSR Project Alternative and Shared Passenger Track Alternative because of the removal of the intermediate station(s); however, additional impacts may occur related to staging tracks outside the Fullerton corridor as mitigation for the Shared Passenger Track Alternative. Under the No Project Alternative, the existing rail corridor would continue to be a division between some communities adjacent to the rail corridor. The job creation, other beneficial economic activity, and improvements to community connectivity in new grade-separated areas that would occur under the 2018 HSR Project Alternative would likely not occur under the No Project Alternative.

4.2.12 Station Planning, Land Use, and Development

All four build alternatives would be anticipated to have land use impacts related to temporary alteration of existing land use patterns during construction, and permanent conversion of existing and planned land uses to transportation uses for project operation. During construction, land would temporarily be used for construction staging, laydown, and fabrication areas. Temporary land use conversions, alterations, and disruptions could occur. For operations, increases in parking and traffic access demand at HSR station sites during operation of the 2018 HSR Project Alternative would result in land use and compatibility impacts. However, the 3A – Freeway Tunnel Alternative would likely have the least impacts on land use because the alignment would be below grade. Both the 3A – Freeway Tunnel Alternative and the 3B – UPRR Alignment Alternative would not include an intermediate station or the BNSF Components and would reduce associated land use changes at these sites. In comparison, the Shared Passenger Track Alternative would not include the Colton Component but would include staging tracks and potentially an intermediate station. The Shared Passenger Track Alternative would also include fewer grade separations, which would reduce impacts on land use. Under the No Project Alternative, anticipated population growth and planned development in Los Angeles and Orange Counties would likely be a continuation of existing land use patterns and would be subject to their own environmental review. However, without construction of the 2018 HSR Project Alternative, the No Project Alternative would be inconsistent with the general plans and other planning documents that include HSR as a goal or commitment.

4.2.13 Agriculture Farmland and Forest Land

The 2018 HSR Project Alternative would include the Lenwood Component, which has Important Farmland within and near its resource study area. The Lenwood Component could result in temporary construction impacts on agricultural farmland. Potential impacts could include temporary use of Important Farmland and disruption of access or utilities during construction activities. However, with the incorporation of IAMFs into the project design, impacts would be less than significant. Future railyard operations included as part of the Lenwood Component for the 2018 HSR Project Alternative would not affect agricultural farmland or operations near the facility. Impacts could include the temporary use of Important Farmland and disruption of access or utilities during construction activities for construction of the staging tracks as mitigation for the Shared Passenger Track Alternative.

The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would not have an impact on Important Farmland. Both alternatives would not include the Lenwood Component and

therefore would avoid the associated impacts on Important Farmland. Additionally, no Important Farmland is located within the project area for the 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative, and no impacts are anticipated. No forest land is present within the project areas for the four build alternatives, and therefore no impacts on forest land are anticipated. Under the No Project Alternative, trends in development and population are anticipated to continue, leading to impacts on agricultural farmland and forest land because anticipated growth could result in development of land used or zoned for agricultural uses.

4.2.14 Parks, Recreation, and Open Space

Construction of all four build alternatives would be expected to create temporary impacts on parks and recreation facilities, including park access disruptions, noise, dust, air quality, and visual degradation. The 2018 HSR Project Alternative would affect the most parks and recreation facilities during construction, as it would include both BNSF Components and an intermediate station. The Shared Passenger Track Alternative would not include impacts associated with construction or operation of the Colton Component, but additional impacts related to staging tracks may occur. The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would have the fewest impacts during construction because neither alternative includes the BNSF Components or an intermediate station (Norwalk/Santa Fe Springs or Fullerton) and both would be at least partially below grade. Operational impacts including noise from passing trains and maintenance activities, as well as visual changes from HSR infrastructure, would occur for all four build alternatives. For the portions of the alignment below grade in a tunnel for the 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative, operational noise and visual effects would be substantially lessened or avoided. Under the No Project Alternative, temporary impacts and permanent changes from operations of the HSR project would be avoided. However, similar impacts on parks, recreation, and open space could persist through reasonably foreseeable development under the No Project Alternative.

4.2.15 Aesthetics and Visual Quality

Construction of all four build alternatives would be anticipated to result in permanent visual changes associated with station site reconstruction and project elements such as grade separations or overhead catenary lines to areas adjacent to or within viewing range, including for the historic bridges, which would result in impacts even with mitigation incorporated. However, the 3A – Freeway Tunnel Alternative would likely have the fewest construction impacts on aesthetic resources because it would not include reconstruction for the intermediate station and would have fewer grade separations and fewer overhead catenary lines because of the tunnel alignment. Operational impacts for the 2018 HSR Project Alternative, Shared Passenger Track Alternative, and 3A – Freeway Tunnel Alternative are anticipated to be less than significant under CEQA or adverse under NEPA except for effects on historic bridges; however, additional impacts may occur related to staging tracks for the Shared Passenger Track Alternative. Construction activities and the addition of built security features (intrusion-protection railings, signage, lighting, and signal lights) would conflict with the visual character of these historic bridges and substantially affect the scenic values of the bridges as important visual resources. The 3B – UPRR Alignment Alternative would have potentially additional adverse operational impacts for viaducts and historic bridges. Under the No Project Alternative, infrastructure and development projects would continue and be anticipated to result in associated impacts on visual quality.

4.2.16 Cultural Resources

There would be adverse effects/significant impacts on four historic properties for the 2018 HSR Project Alternative, Shared Passenger Track Alternative, 3A – Freeway Tunnel Alternative, and 3B – UPRR Alignment Alternative. Additional review of the alignments would confirm the total number of resources to be affected. In addition, there is the potential for adverse effects/significant impacts on archaeological properties, but these are currently unknown. The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative tunnel components could result in reduced surface impacts. The 2018 HSR Project Alternative would likely have the greatest construction and operational impacts because of the construction and operation of the BNSF Components and the intermediate station

including additional cultural resources (for example, three historic properties associated with the Colton Component). For the Shared Passenger Track Alternative, additional impacts related to development of staging tracks may occur. Under the No Project Alternative, infrastructure and development projects would continue and be anticipated to result in associated impacts on cultural resources.

4.2.17 Section 4(f)/6(f)

Construction of all four build alternatives would be anticipated to result in temporary occupancies of park and recreational resources. During operation, permanent use of historic properties and *de minimis* impacts on parks and recreation resources and historic properties would be anticipated. However, the 3A – Freeway Tunnel Alternative would likely have the fewest construction and operational impacts on Section 4(f) resources because it would be built mostly below grade and would not include BNSF Components or an intermediate station. The 2018 HSR Project Alternative would likely have the greatest construction and operational impacts because of the BNSF Components and the intermediate station; however, additional impacts may occur related to staging tracks as mitigation for the Shared Passenger Track Alternative. No effects on Section 6(f) resources would be anticipated for any of the four build alternatives. Under the No Project Alternative, infrastructure and development projects would continue and could result in associated impacts on Section 4(f) or Section 6(f) resources.

4.2.18 Environmental Justice

All four build alternatives would be expected to have beneficial impacts on environmental justice populations (minority and low-income populations) by improving access to jobs and community amenities and providing new employment opportunities. Construction and operations of the 2018 HSR Project Alternative could result in temporary and permanent adverse effects on environmental justice populations associated with hazardous materials and wastes, air quality, noise and vibration, and archaeological and historic resources. Alternatively, it could offer beneficial effects for community cohesion, economic vitality, residents and business, employment, and transportation. With IAMFs and mitigation measures, effects would be reduced and a disproportionately high and adverse effect on environmental justice populations would not be expected along the main project corridor. The 2018 HSR Project Alternative would have greater impacts than the other build alternatives because this alternative contains both of the BNSF Components, which are adjacent to environmental justice populations. The Shared Passenger Track Alternative would avoid adverse impacts on environmental justice communities associated with the Colton Component and the 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative would avoid impacts on environmental justice communities associated with the BNSF Components. Future projects and developments that might occur in the case of the No Project Alternative in lieu of the 2018 HSR Project Alternative cannot be anticipated. Therefore, the possibility of such projects having disproportionate and adverse effects on environmental justice communities cannot be anticipated or compared to the 2018 HSR Project Alternative and Shared Passenger Track Alternative.

5 CONCLUSIONS

This SAA Report summarizes the impacts for the Los Angeles to Anaheim Project Section alignment alternatives and recommends which alternative should be carried forward for further review in the environmental review process.

The 2018 HSR Project Alternative met the Authority's evaluation criteria when it was originally conceptualized; however, involvement with BNSF regarding inclusion of the Colton Component resulted in additional substantial challenges and controversy (refer to Section 3.2.7). Generally, the 2018 HSR Project Alternative is anticipated to maximize connectivity and transit-oriented development potential. Additionally, the 2018 HSR Project Alternative would not result in the significant construction impacts such as large quantities of excavation, roadway disruptions, high construction costs, and large construction laydown areas that would be required for construction of the tunnels and grade crossings under 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative. However, this alternative would result in the most property acquisitions and relocations and the highest railroad and utility disruptions. The 2018 HSR Project Alternative would also be more costly than the Shared Passenger Track Alternative to build and operate given the greater number of daily high-speed trains planned and the Authority's potential oversight over the Colton Component.

The 3A – Freeway Tunnel Alternative and 3B – UPRR Alignment Alternative are expected to meet the evaluation criteria by eliminating the BNSF Components, not operating in a very busy freight corridor, and having shorter trip times. However, these options would be far more costly to build and have reduced transit-oriented development potential because of the exclusion of intermediate stations. Furthermore, these alternatives could increase GHG emissions during construction from construction of the tunnels.

The Shared Passenger Track Alternative is expected to result in the most favorable balance of impacts and benefits. The Shared Passenger Track Alternative would follow the same alignment as the 2018 HSR Project Alternative and would include staging tracks outside the project corridor, which are required to maintain freight and passenger rail performance during HSR construction and operations. Additionally, this alternative would reduce HSR train operations to two HSR trains per hour in each direction between LAUS and ARTIC. The Shared Passenger Track Alternative meets the Authority's evaluation criteria as set forth above to a greater extent than the 2018 HSR Project Alternative, primarily due to the revised train operations within the shared corridor and the elimination of the Colton Component and its associated impacts. Additionally, this alternative has potential to reduce operating costs due to shared maintenance expenses with other rail services and operators within the corridor and reduced HSR fleet size. Refer to Table 4-1 for additional details.

All alternatives would accommodate ridership included in the Service Plan. However, the Shared Passenger Track Alternative and 2018 HSR Project Alternative could have greater connectivity (stations), which would likely result in greater potential ridership.

Transportation, construction, and operational impacts are expected to be reduced with the Shared Passenger Track Alternative. Operational impacts would be reduced with the removal of the Colton Component, some grade separations, and, potentially, an intermediate station for the Shared Passenger Track Alternative and the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives. However, the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would also remove the intermediate station (Norwalk/Santa Fe Springs or Fullerton) and grade-separated roadways, thereby negatively affecting the level of service thresholds as well as other gains expected in emissions reduction and improved air quality.

For cultural resources, adverse effects are anticipated for all build alternatives although further review is required to determine site conditions for the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives. The 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives proposing tunnels and elevated viaducts could result in reduced surface impacts on cultural resources. The Shared Passenger Track Alternative would have fewer impacts than the 2018 HSR Project Alternative with the removal of the Colton Component. Findings of no adverse effect/no significant impact and no effect/no impact are anticipated regardless of the selected project alternative and are likely to be

similar to those for the current 2018 HSR Project Alternative. For these reasons, no one alternative stands out as a means to avoid adverse effects/significant impacts on cultural resources.

Based on current, known information, the Shared Passenger Track Alternative would meet the project objectives better than the 2018 HSR Project Alternative by having fewer disruptions to neighborhoods, communities, and ROW acquisitions with removal of the BNSF Components and would minimize capital and operational costs in comparison. The 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would meet most of the project objectives but would not meet the objectives regarding minimizing capital and operational costs related to construction, operations, and maintenance of the project section and the provision of HSR that is feasible in terms of engineering challenges because of tunneling. Also, the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives would not provide as many connectivity and accessibility opportunities as the other build alternatives due to the elimination of the intermediate stations. As a result, the 3A – Freeway Tunnel and 3B – UPRR Alignment Alternatives will be rejected as potential alternatives. The No Project Alternative would not meet most of the project objectives and would not comply with the Authority's statutory mandate to plan, build, and operate an HSR system coordinated with California's existing transportation network.

The 2018 HSR Project Alternative and Shared Passenger Track Alternative have been deemed the best candidates to be further analyzed in the Tier 2, project-level EIR/EIS with consideration to the evaluation criteria, project objectives, environmental impacts, and feasibility of implementation. However, as a result of the interested party objections to and concerns for the Colton Component (e.g., cost, interested party objection, Authority liability and oversight, and lack of BNSF cooperation discussed in Section 3.2.7), the Authority staff has concluded that the Colton Component, and therefore the 2018 HSR Project Alternative, should no longer be evaluated within the environmental analysis. Of the remaining alternatives, the Shared Passenger Track Alternative is expected to best meet the Project's Purpose and Need while servicing the most potential passengers and providing the most cost-effective rail system. Given the above, the Shared Passenger Track Alternative has been selected for further analysis within the Tier 2, project-level EIR/EIS. The Authority will also analyze and define elements of the Shared Passenger Track Alternative, such as which intermediate (Norwalk/Santa Fe Springs or Fullerton) station will be constructed, the location and size of the LMF, and potential sites for the staging track mitigation measures in future documents.

6 REFERENCES

- California Department of Transportation (Caltrans). 2022. *2022 State Transportation Improvement Program*. Adopted March 16, 2022. <https://catc.ca.gov/-/media/ctc-media/documents/programs/stip/2022-stip/2022-adopted-stip-32522.pdf>.
- California High-Speed Rail Authority (Authority). 2011. *Technical Memorandum: Alternatives Analysis Methods for Project EIR/EIS*, Version 3.
- . 2012. *California High-Speed Rail Program Revised 2012 Business Plan*. April. https://hsr.ca.gov/wp-content/uploads/docs/about/business_plans/BPlan_2012_rpt.pdf.
- . 2014. *California High-Speed Rail Program 2014 Business Plan*. April. https://hsr.ca.gov/wpcontent/uploads/docs/about/business_plans/BPlan_2014_Business_Plan_Final.pdf.
- . 2016. *California High-Speed Rail Program Draft 2016 Business Plan*. March. https://hsr.ca.gov/wp-content/uploads/docs/about/business_plans/2016_BusinessPlan.pdf.
- . 2016. *Ridership and Revenue Forecasting. 2016 Business Plan: Technical Supporting Document*. https://hsr.ca.gov/wp-content/uploads/docs/about/business_plans/2016_Business_Plan_Ridership_Revenue_Forecast.pdf.
- . 2017. *Statewide Operations and Service Plan*. February 14.
- . 2020. *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Version 5.10.
- California High-Speed Rail Authority (Authority) and Federal Railroad Administration (FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System*. Sacramento and Washington, DC: California High-Speed Rail Authority and Federal Railroad Administration. August.
- . 2009. *California High-Speed Train Project Anaheim to Los Angeles Section Alternatives Analysis Report*. April 13, 2009. www.hsr.ca.gov/docs/programs/statewide_rail/proj_sections/LA_Anaheim/LA_to_Orange_County_Anaheim_to_LA_AA_Report.pdf.
- . 2010. *Los Angeles to Anaheim Supplemental Alternatives Analysis Report*.
- . 2016. *Los Angeles to Anaheim Project Section Supplemental Alternatives Analysis Report*. April 2016. www.cahighspeedrail.ca.gov/docs/brdmeetings/2016/brdmtg_041216_Item9_ATTACHMENT_LA_to_Anaheim_Supplemental_Alternatives_Analysis.pdf.
- LOSSAN Rail Corridor Agency. 2012. *LOSSAN Corridorwide Strategic Implementation Plan*. https://www.octa.net/pdf/projectid_260_14371.pdf.
- Southern California Association of Governments (SCAG). 2020. *Connect SoCal: 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy*. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176.
- . 2021. *Federal Transportation Improvement Program*. <https://scag.ca.gov/2021-adopted-ftip>.
- Southern California Regional Rail Authority. 2021. *Strategic Business Plan*. Adopted January 22, 2021. <https://metrolinktrains.com/globalassets/about/agency/strategic-plan/metrolink-strategic-plan-final---full-report--r.pdf>.

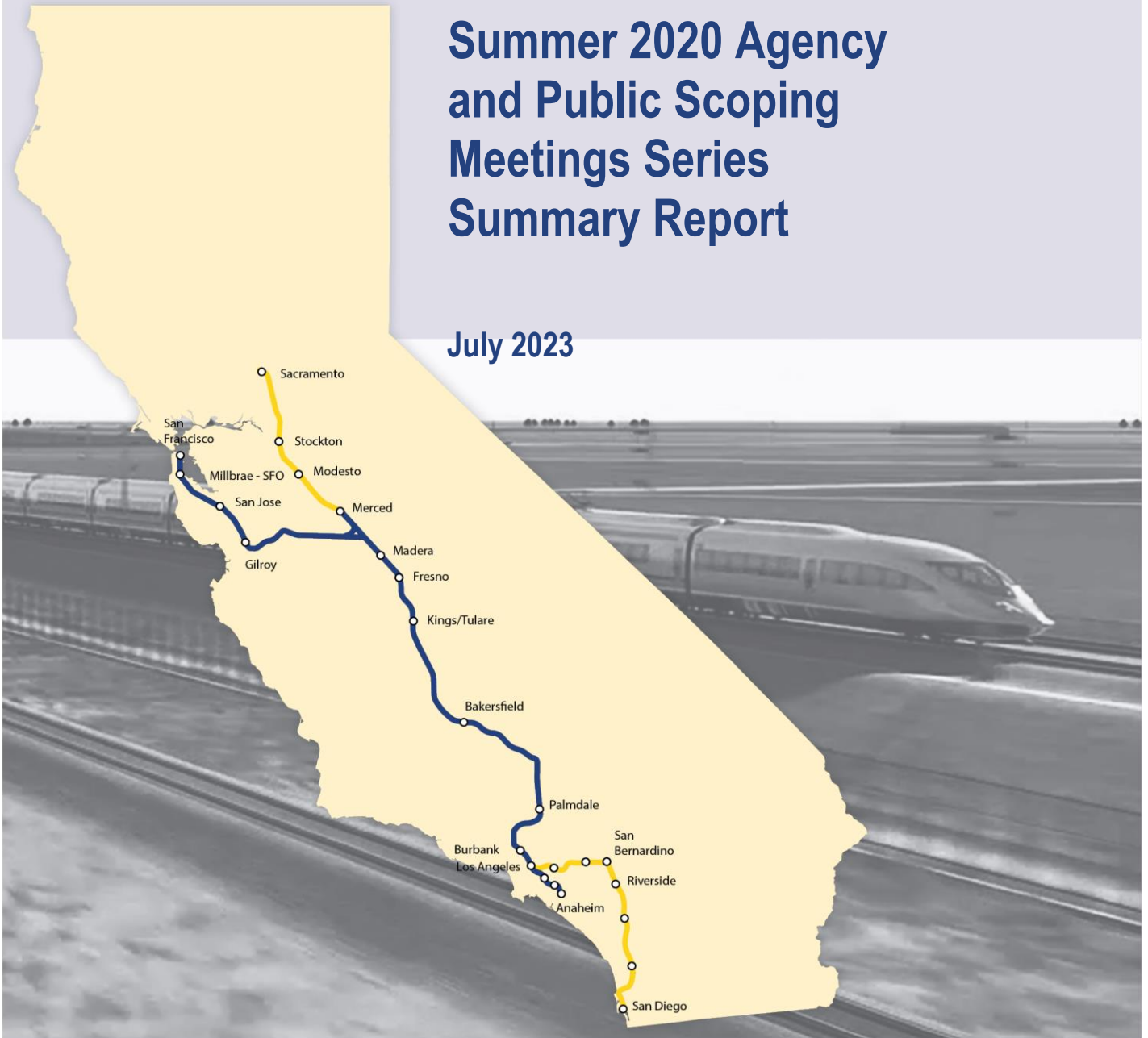
APPENDIX A: LOS ANGELES TO ANAHEIM PROJECT SECTION SUMMER 2020 AGENCY AND PUBLIC SCOPING MEETINGS SERIES SUMMARY REPORT

California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

Summer 2020 Agency
and Public Scoping
Meetings Series
Summary Report

July 2023



The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

TABLE OF CONTENTS

- 1 SUMMARY 1-1
 - 1.1 Overview of Public and Agency Outreach 1-1
 - 1.2 Relationship to Previous Scoping 1-2
 - 1.3 Summary of Key Issues 1-2
- 2 INTRODUCTION 2-1
 - 2.1 Description of Project Section 2-1
 - 2.1.1 BNSF Lenwood Staging Track Component 2-4
 - 2.1.2 BNSF Colton Intermodal Facility Component 2-6
 - 2.2 Introduction to the High-Speed Rail System 2-8
 - 2.3 Purpose of Scoping 2-8
 - 2.4 Use of the Scoping Report 2-9
 - 2.5 Description of Previous Scoping 2-9
 - 2.6 Latest Scoping Efforts 2-10
- 3 STAKEHOLDER AND ELECTED MEETINGS 3-1
 - 3.1 Stakeholder Briefings 3-1
 - 3.1.1 Elected Official Briefings and Legislative Group Briefings 3-1
 - 3.1.2 City Government Coordination 3-2
 - 3.1.3 Stakeholder Working Group 3-3
- 4 NOTIFICATION OF SCOPING PERIOD 4-1
 - 4.1 Mail and Door-to-Door Notifications 4-1
 - 4.2 Agency Notification 4-1
 - 4.3 Email Blasts 4-1
 - 4.4 Extended Stakeholder Notification 4-1
 - 4.5 Cable Slide 4-2
 - 4.6 Flyer Distribution 4-2
 - 4.7 Website 4-2
 - 4.8 Geofencing Advertisements 4-3
 - 4.9 Display Advertisements 4-4
 - 4.10 Legal Advertisements 4-5
 - 4.11 Earned Media and Stakeholder Coverage 4-5
 - 4.12 Social Media Targeted Advertisements and Posts 4-6
 - 4.13 Banners 4-7
- 5 PUBLIC AND AGENCY INVOLVEMENT DURING PUBLIC SCOPING 5-1
 - 5.1 Telephone Town Hall 5-1
 - 5.2 Agency Scoping Meeting 5-1
 - 5.3 Public Scoping Meetings 5-1
 - 5.4 Office Hours 5-2
 - 5.5 Summary of Outreach Activities 5-3
 - 5.6 Title VI Compliance 5-3
- 6 SUMMARY OF SCOPING COMMENTS 6-1
 - 6.1 Agency Comments Received 6-1
 - 6.2 General Project Concerns 6-6
 - 6.2.1 Purpose and Need 6-7
 - 6.2.2 Alternatives 6-7
 - 6.2.3 Project Definition 6-7
 - 6.2.4 Public Engagement 6-7

6.3	Community Concerns	6-7
6.3.1	Environmental Justice	6-8
6.3.2	Regional Growth	6-8
6.3.3	Socioeconomics and Communities.....	6-8
6.4	Other Environmental Concerns.....	6-8
6.4.1	Transportation.....	6-9
6.4.2	Air Quality and Global Climate Change	6-9
6.4.3	Health Risks.....	6-9
6.4.4	Noise and Vibration.....	6-10
6.4.5	Safety and Security	6-10
6.4.6	Land Use.....	6-10
6.4.7	Public Utilities and Energy.....	6-10
6.4.8	Hydrology and Water Quality.....	6-10
6.4.9	Aesthetics and Visual Quality	6-10
6.4.10	Cumulative Impacts.....	6-10
6.4.11	Biological Resources and Wetlands	6-11
6.4.12	Cultural Resources.....	6-11
6.4.13	Parks, Recreation, and Open Space	6-11
6.4.14	Hazardous Materials and Wastes.....	6-11
6.4.15	Geology, Soils, Seismicity, and Paleontological Resources.....	6-11
6.5	Process, Engineering, and Permitting Concerns.....	6-11
6.5.1	Environmental Process	6-12
6.5.2	Right-of-Way and Property Acquisition	6-12
6.5.3	Permitting.....	6-12
7	NEXT STEPS.....	7-1

Tables

Table 1-1	Summary of Scoping Comment Topics and Subtopics Raised	1-2
Table 3-1	Elected Official Briefings and Legislative Group Briefings	3-2
Table 3-2	City Coordination.....	3-2
Table 4-1	Published Display Advertisements	4-4
Table 4-2	Published Legal Advertisements for Virtual Scoping Meetings	4-5
Table 4-3	Earned Media Articles	4-5
Table 4-4	Earned Media Online Posts.....	4-6
Table 4-5	Facebook Advertisements.....	4-6
Table 4-6	Social Media Posts.....	4-6
Table 5-1	Telephone Town Hall and Scoping Meeting Additional Features.....	5-2
Table 5-2	Office Hour Briefings	5-3
Table 6-1	Federal, State, Regional, and Local Agency Comments Received.....	6-2

Figures

Figure 2-1 High-Speed Rail Project Alternative.....	2-3
Figure 2-2 BNSF Lenwood Staging Track Component	2-5
Figure 2-3 BNSF Colton Intermodal Facility Component	2-7
Figure 4-1 Daily meethrsocal.org Website Views	4-3
Figure 5-1 Scoping Meeting Participation and Presentation Views	5-2
Figure 6-1 Summary of Scoping Comments: General Project Concerns (118 Comments).....	6-6
Figure 6-2 Summary of Scoping Comments: Community Concerns (54 Comments).....	6-8
Figure 6-3 Summary of Scoping Comments: Other Environmental Concerns (186 Comments).....	6-9
Figure 6-4 Summary of Scoping Comments: Process, Engineering, Permitting Concerns (26 Comments).....	6-12

Appendices

Appendix A Scoping Period, Scoping Meetings and Telephone Town Hall Mailing Notice, Flyer, Eblasts, and Door-to-Door Notification (English & Spanish)

- Appendix A.1 Meeting Notice
- Appendix A.2 Meetings Flyer (English & Spanish)
- Appendix A.3 Eblasts (English & Spanish)
- Appendix A.4 Door-to-Door Notification – Ayres Community/Commerce Businesses
- Appendix A.5 Door-to-Door Notification – Del Este Mobile Home Estates
- Appendix A.6 Door-to-Door Notification – Los Nietos Community
- Appendix A.7 Door-to-Door Notification – Rancho La Paz Mobile Home Park
- Appendix A.8 Door-to-Door Notification – Colton Area
- Appendix A.9 Door-to-Door Notification – Lenwood Area
- Appendix A.10 Agency Notification List

Appendix B Extended Outreach Efforts

- Appendix B.1 Geofencing Digital Ads
- Appendix B.2 Cable Slides
- Appendix B.3 Banners
- Appendix B.4 Toolkits

Appendix C Scoping Advertisements

- Appendix C.1 Display Advertisements
- Appendix C.2 Legal Advertisements

Appendix D Media and Social Media Coverage

- Appendix D.1 Earned Media Articles
- Appendix D.2 Earned Media Online Posts

Appendix E Presentation Materials

- Appendix E.1 Los Angeles to Anaheim Project Section Fact Sheet and Insert (English)
- Appendix E.2 Los Angeles to Anaheim Project Section Fact Sheet and Insert (Spanish)
- Appendix E.3 Agency Scoping Presentation
- Appendix E.4 Public Scoping Presentation (English & Spanish)
- Appendix E.5 Legislative Group Briefing Presentation & Meeting Notes
- Appendix E.6 Stakeholder Working Group Presentation & Meeting Notes

Appendix F Virtual Open House Information Station Material

- Appendix F.1 Home Page
- Appendix F.2 Station 1: Welcome
- Appendix F.3 Station 2: Statewide Overview
- Appendix F.4 Station 3: Los Angeles to Anaheim Project Section

Appendix F.5	Station 4: Scoping
Appendix F.6	Station 5: How to Provide a Comment
Appendix F.7	Station 6: Learn More about California High Speed Rail
Appendix F.8	Next Steps
Appendix F.9	Contact Us
Appendix F.10	Scoping Meetings and Telephone Town Hall
Appendix F.11	Office Hours
Appendix G	Participants by Meeting
Appendix G.1	Participant Count – Telephone Town Hall (September 3, 2020)
Appendix G.2	Participant List – Agency Scoping Meeting (September 9, 2020)
Appendix G.3	Participant List – Public Scoping Meeting (September 10, 2020)
Appendix G.4	Participant List – Public Scoping Meeting (September 12, 2020)
Appendix H	Scoping Comments Received
Appendix H.1	Federal Agency Comments
Appendix H.2	State Agency Comments
Appendix H.3	Local Agency Comments
Appendix H.4	Elected Office Comments
Appendix H.5	Business and Other Organization Comments
Appendix H.6	Comments from Individuals
Appendix I	Notice of Intent and Notice of Preparation
Appendix I.1	Notice of Intent
Appendix I.2	Notice of Preparation
Appendix J	Photos Taken by Meeting
Appendix J.1	Photos – Agency Scoping Meeting (September 9, 2020)
Appendix J.2	Photos – Public Scoping Meeting #1 (September 10, 2020) English
Appendix J.3	Photos – Public Scoping Meeting #1 (September 10, 2020) Spanish
Appendix J.4	Photos – Public Scoping Meeting #2 (September 12, 2020) English
Appendix J.5	Photos – Public Scoping Meeting #2 (September 12, 2020) Spanish
Appendix K	Title VI Documentation and Compliance
Appendix K.1	Title VI Documentation – Telephone Town Hall (September 3, 2020)
Appendix K.2	Title VI Documentation – Public Scoping Meeting #1 (September 10, 2020)
Appendix K.3	Title VI Documentation – Public Scoping Meeting #2 (September 12, 2020)

ACRONYMS AND ABBREVIATIONS

Authority	California High-Speed Rail Authority
BNSF	BNSF Railway
CEQA	California Environmental Quality Act
COVID-19	2019 novel coronavirus
eblast	email blast
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EJ	environmental justice
HSR	high-speed rail
LOSSAN Corridor	Los Angeles – San Diego – San Luis Obispo Rail Corridor
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NOP	Notice of Preparation
project section	Los Angeles to Anaheim Project Section
SWG	Stakeholder Working Group
TTH	Telephone Town Hall

1 SUMMARY

The Los Angeles to Anaheim Project Section (project section) is part of the first phase of building the nation's first high-speed rail (HSR) system, connecting Los Angeles Union Station to Anaheim Regional Transportation Intermodal Center using approximately 30 miles of the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor).

To provide for the growth of passenger rail service in the project section and avoid disrupting goods movement activities vital to the region, the California High-Speed Rail Authority (Authority) recently added two new proposed project components requiring additional environmental analysis: the BNSF Railway (BNSF) Lenwood Staging Track Component near Barstow (BNSF Lenwood Component) and Colton Intermodal Facility Component (BNSF Colton Component). The Authority conducted a public scoping process for the environmental studies for these components. BNSF is a supportive partner of the environmental process and continues to support passenger rail services by allowing passenger rail operators to use its right-of-way.

The purpose of this report is to summarize the public scoping process and comments received during the summer 2020 public scoping period for the Los Angeles to Anaheim Project Section of the proposed California HSR System, which includes the BNSF Lenwood and Colton Components. This report provides a brief project overview and description of the public scoping process, meetings, and outreach activities; as well as a summary of the public and agency comments received during scoping.

Because of health and safety precautions in response to the 2019 novel coronavirus (COVID-19) pandemic, the Authority conducted the project section scoping meetings virtually using the Zoom platform with language interpretation services and call-in options.

1.1 Overview of Public and Agency Outreach

The Authority, as the lead agency under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA),¹ initiated the public scoping period for the project section by releasing a Revised Notice of Preparation (NOP) on August 20, 2020, and a Revised Notice of Intent (NOI) on August 25, 2020, to introduce the BNSF Lenwood and Colton Components. The Revised NOP was filed with the State Clearinghouse and the Revised NOI was filed with the *Federal Register*. The Authority distributed the Revised NOP and NOI to elected officials; local, regional, and state agencies; and interested members of the public to encourage agency and public participation in the scoping process. Comments were solicited from agencies, stakeholders, and the public at large to ensure that the full range of environmental issues related to the project section are identified. Public agencies with jurisdiction in the project section were requested to advise the Authority of applicable permit and environmental review requirements and the scope and content of the environmental information germane to the agency's statutory responsibilities in connection with the project.

The Authority conducted public scoping activities over a 30-day period between August 25, 2020, and September 24, 2020. During this period, two virtual public scoping meetings were held on September 10 and 12, 2020, with 148 attendees and 32 formal scoping comments submitted. In addition, one virtual agency scoping meeting was held on September 9, 2020, with 33 total participants and submittal of four formal scoping comments. A Telephone Town Hall (TTH) for the project section was also held on September 3, 2020, which over 5,900 participants joined via telephone conference. Because of the COVID-19 pandemic global health crisis, outreach activities were conducted in a virtual or remote format, in accordance with the State of California Public Health mandates, while also

¹ Pursuant to United States Code Title 23, Section 327, under the NEPA Assignment Memorandum of Understanding between the Federal Railroad Administration and the State of California, effective July 23, 2019, the Authority is the project sponsor and the lead federal agency for compliance with NEPA and other federal environmental laws for the HSR system, including the Los Angeles to Anaheim Project Section. The Authority is also the state lead agency under CEQA.

providing the appropriate language interpretation services and options for calling into each of the meetings.

1.2 Relationship to Previous Scoping

In November 2005, the Authority and the Federal Railroad Administration completed the Statewide Program Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the proposed HSR system as the first phase of a tiered environmental review process. The Authority certified the Statewide Program EIR under CEQA and approved the proposed HSR system. The Federal Railroad Administration issued a Record of Decision on the Statewide Program EIS as required under NEPA.

Building off the approved and certified Statewide Program EIR/EIS, the Authority has proceeded with individual environmental clearance efforts for Phase 1 of the system between San Francisco and Los Angeles/Anaheim, including the project section. Phase 2 of the system with extensions to Sacramento and San Diego are also planned. Scoping for the project section was originally conducted in 2007, prior to the inclusion of the BNSF Lenwood and Colton Components. Consequently, additional scoping was conducted in summer 2020 as described in this report to inform and obtain public and agency feedback on the newly added BNSF Lenwood and Colton Components. The 2007 scoping and environmental development processes since then remain valid; information learned in and since 2007 will be used, supplemented by information obtained through this additional scoping process, in development of the Draft EIR/EIS.

1.3 Summary of Key Issues

In all, the Authority received 131 scoping comment submissions consisting of comment forms, letters, emails, comments submitted via the project hotline number, and comments made at scoping meetings via stenographer from agencies, organizations, and individuals regarding the project section. These 131 comment submissions resulted in the identification of 401 individual comments covering different topics (often multiple comments per submission).

The Authority divided comments into four major topics and then further divided these into sub-categories and listed them by most to least common theme (see Table 1-1). The table below displays the combined percentages of the concerns by parent topics that were submitted in each comment. Chapter 6, Summary of Scoping Comments, of this report provides additional details on the comment topics and subtopics.

Table 1-1 Summary of Scoping Comment Topics and Subtopics Raised

Category	# Comments (often multiple comments per submission)	Percentage of Total Comments	Section of Comment Summary
General project concerns	118	30.7%	6.2
Project definition	45	11.7%	6.2.3
Alternatives	25	6.5%	6.2.2
Public engagement	25	6.5%	6.2.4
Purpose and need	23	6.0%	6.2.1
Community concerns	54	14.1%	6.3
Environmental justice	32	8.3%	6.3.1
Socioeconomics and communities	19	4.9%	6.3.3
Regional growth	3	0.8%	6.3.2
Other environmental concerns	186	48.4%	6.4
Transportation	41	10.7%	6.4.1

Category	# Comments (often multiple comments per submission)	Percentage of Total Comments	Section of Comment Summary
Air quality and global climate change	38	9.9%	6.4.2
Health risks	20	5.2%	6.4.3
Noise and vibration	19	4.9%	6.4.4
Biological resources and wetlands	9	2.3%	6.4.11
Hydrology and water quality	10	2.6%	6.4.8
Land use	8	2.1%	6.4.6
Aesthetics and visual quality	7	1.8%	6.4.9
Cumulative impacts	7	1.8%	6.4.10
Cultural resources	7	1.8%	6.4.12
Parks, recreation, and open space	6	1.6%	6.4.13
Public utilities and energy	5	1.3%	6.4.7
Safety and security	5	1.3%	6.4.5
Hazardous materials and wastes	3	0.8%	6.4.14
Geology, soils, seismicity, and paleontological resources	1	0.3%	6.4.15
Process, engineering, and permitting concerns	26	6.8%	6.5
Environmental process	13	3.4%	6.5.1
Right-of-way and property acquisitions	10	2.6%	6.5.2
Permitting	3	0.8%	6.5.3
TOTAL	384	100%	--

2 INTRODUCTION

The project section is 30 miles in length of the first phase of the California HSR system, connecting Los Angeles Union Station to Anaheim Regional Transportation Intermodal Center using the existing LOSSAN Corridor. Dating back to 2005, the Authority has worked to advance the environmental process and achieve this major project milestone with the implementation of the 2020 scoping process. Part of the continued outreach to communities and stakeholders is maintaining an open line of communication and transparency. For example, the Authority held community open house meetings in spring 2017 to offer community members an opportunity to learn about the project, ask questions, and provide feedback on the refined Supplemental Alternatives Analysis. Based on feedback received during that series of meetings, the Authority further refined the alignment and a staff-recommended State’s Preferred Alternative for the HSR project between Los Angeles and Anaheim was defined to be evaluated in the Draft EIR/EIS.

In advance of the staff-recommended State’s Preferred Alternative presented to the Authority’s Board of Directors on November 15, 2018, the Authority held a series of five open house meetings in September 2018 to offer stakeholders an opportunity to learn about the project, ask questions, and provide feedback. To effectively engage participants, the Authority offered a hybrid open house format with information stations and a formal presentation with a facilitated question-and-answer session.

During the planning of the above-mentioned meeting series, the Authority proposed holding a meeting in Commerce. City staff requested the opportunity to revisit the option at a later date. With concurrence from the City of Commerce, a Commerce Community Workshop was held in October 2018. Similar to the meetings held in September 2018, this workshop provided stakeholders with the opportunity to learn about the project alignments, grade separations, station relocations, and other project features. Additionally, the Authority made available interactive map exhibits and a geographic information system station for direct review and input by attendees.

2.1 Description of Project Section

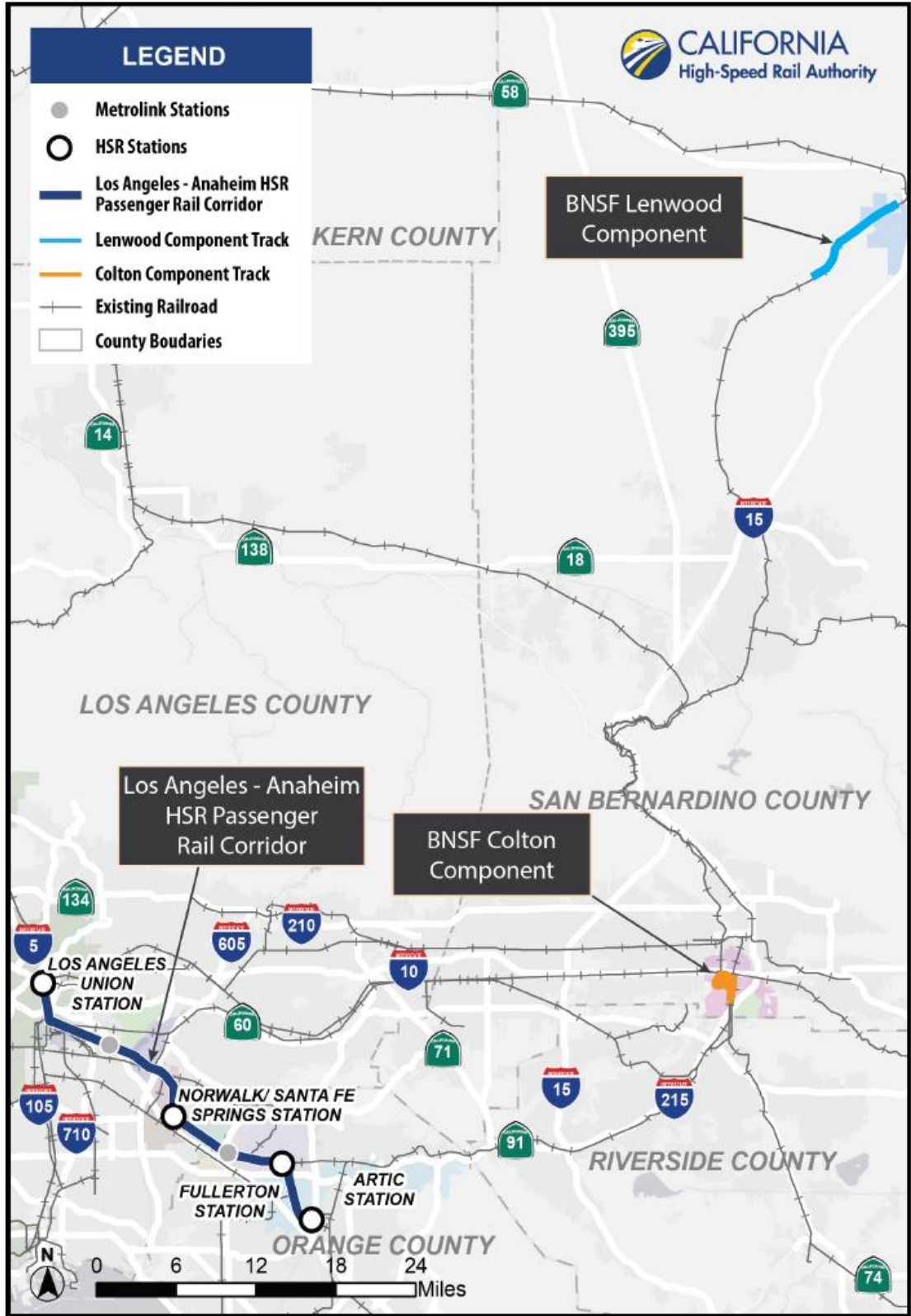
At the Authority’s November 2018 board meeting, the State’s Preferred Alternative was presented and moved forward into the environmental analysis phase. This alternative was a “blended system concept” that would provide two electrified tracks for passenger rail service while reducing the total number of mainline railroad tracks needed to introduce HSR service within the corridor, as compared to a “dedicated high-speed train alternative” that had previously been considered and eliminated. Per the board report, “this alternative generally results in avoidance or minimization of potential environmental impacts on historic resources, parks and recreational facilities, and water resources; reduces need for property acquisition and reduces construction cost.”² As identified in the Los Angeles to Anaheim Project Section Staff Report: State’s Preferred Alternative considered by the Authority’s Board of Directors at their November 2018 meeting, the Preferred Alternative anticipated a support yard and additional siding and storage tracks further inland to mitigate impacts and enhance overall operational efficiency of this important rail corridor for both freight and passenger service.

In response to the Authority’s identified Preferred Alternative within its right-of-way, BNSF conducted modeling, which establishes that, if HSR service is added to existing and projected future freight and passenger rail traffic on the corridor, on-time service level standards for BNSF’s freight trains on the corridor would degrade appreciably below existing conditions by 2030 when HSR service would begin and continuing through the analysis horizon year (2040).

² California High-Speed Rail Authority. 2018. *Los Angeles to Anaheim Project Section Staff Report: State’s Preferred Alternative*. https://hsr.ca.gov/docs/brdmeetings/2018/brdmtg_111518_Item3_and_6_Detailed_Staff_Report_for_the_LA-Anaheim_Project_Section.pdf, pages 2-7 and 2-8.

Therefore, consistent with the project elements anticipated by the Authority's Preferred Alternative, it would be necessary to relocate a portion of the BNSF freight rail service away from the corridor through the addition of two components: a new intermodal facility in Colton and staging tracks in the unincorporated area of Lenwood, near Barstow. Because of the addition of the BNSF Lenwood and Colton Components geographically separated from the LOSSAN Corridor, the portion of the project where HSR service would be implemented between Los Angeles and Anaheim is described as the "HSR Passenger Rail Corridor." The HSR Passenger Rail Corridor and BNSF Lenwood and Colton Components constitute the full project section and its HSR Project Alternative. See Figure 2-1 for an overview of the HSR Project Alternative. The respective BNSF Lenwood and Colton Components are described below.

In general, this report summarizes the outreach conducted, the meetings held, and public and agency comments received during the public scoping process for the proposed project section of the HSR program, including the recently added BNSF Lenwood and Colton Components. More specifically, this report offers an introduction to the HSR system, describes previous scoping efforts, and explains the purpose of public scoping as well as summarizes the scoping notification process, outreach activities prior to the public scoping meetings, and results from the two meetings and comments received from the public and agencies. Details on the next steps in the environmental review process are also summarized in Chapter 7, Next Steps.

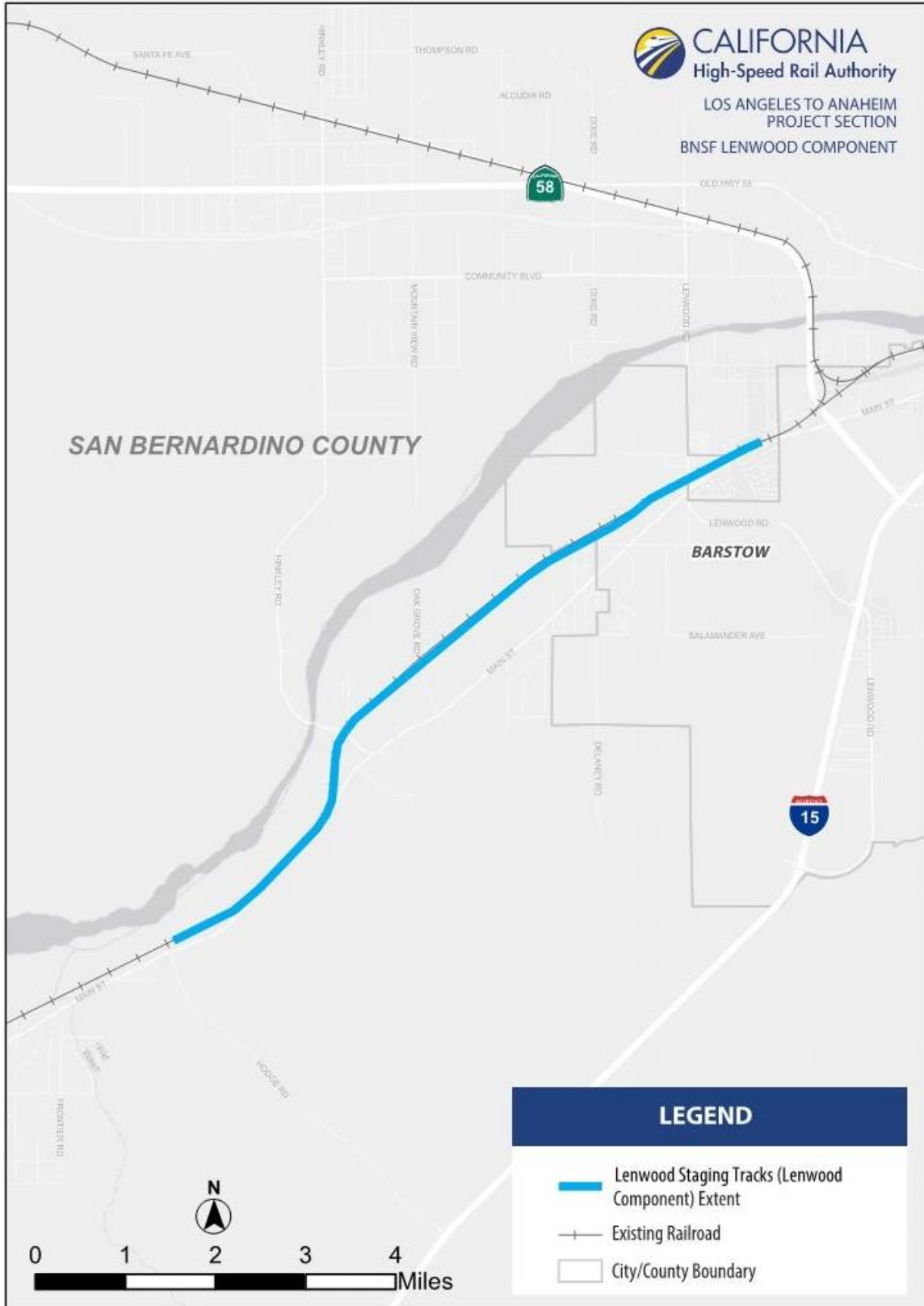


Source: Authority, 2020
 Draft alignments, elements not to scale

Figure 2-1 High-Speed Rail Project Alternative

2.1.1 BNSF Lenwood Staging Track Component

The BNSF Lenwood Component is necessary to allow for extended BNSF main track outages on the corridor where trains can be held on the staging tracks so that windows in corridor rail activity may be provided to accommodate construction during the project section HSR track construction as well as operations and maintenance. The BNSF Lenwood Component site would generally be along the existing BNSF main line tracks and south and west of State Route 58 within Barstow and unincorporated San Bernardino County. See Figure 2-2 for an overview of the BNSF Lenwood Component.

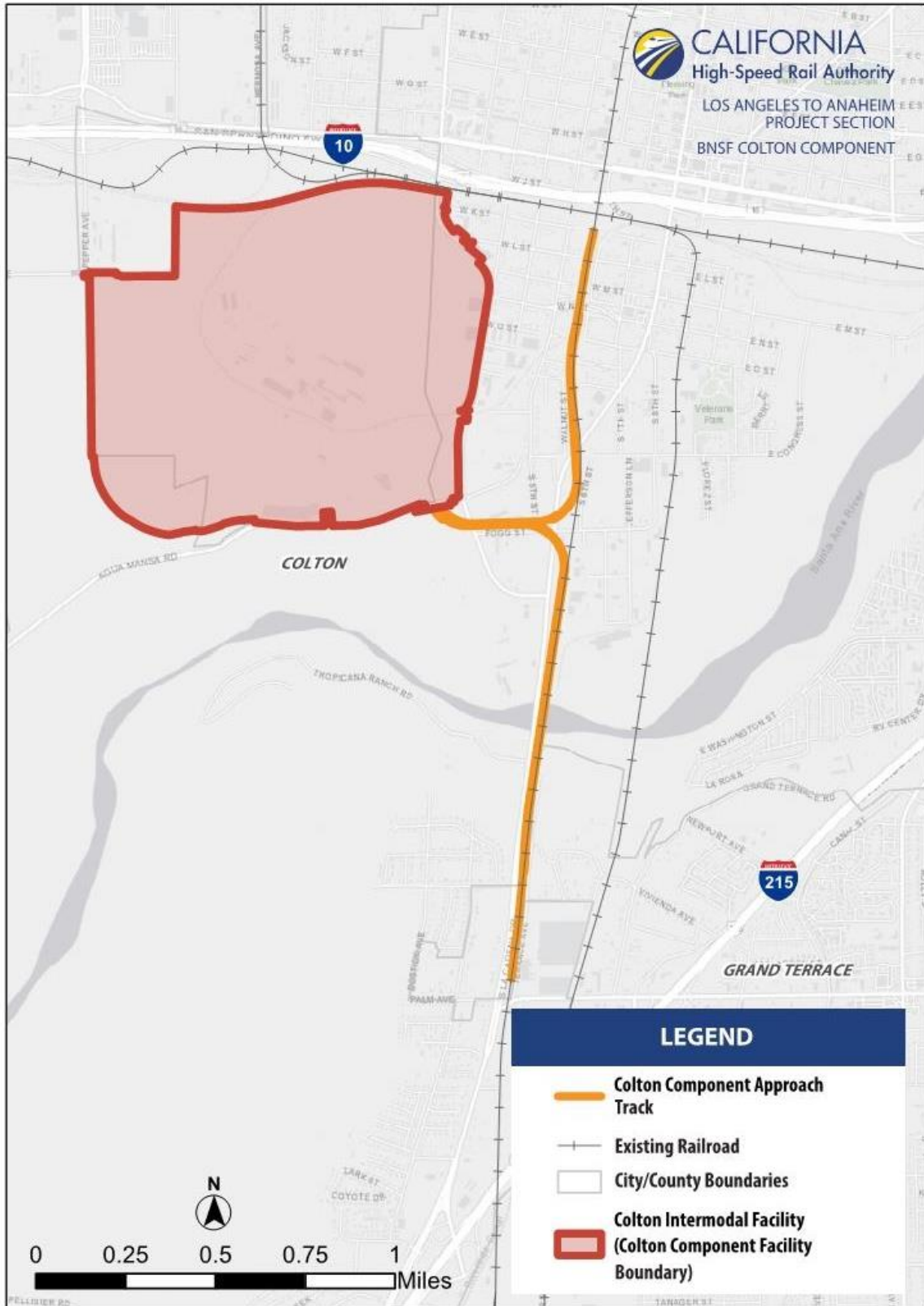


Source: Authority and BNSF, 2020

Figure 2-2 BNSF Lenwood Staging Track Component

2.1.2 BNSF Colton Intermodal Facility Component

An average of ten freight trains per day would be removed from the LOSSAN Corridor and processed at the BNSF Colton Component to maintain performance at existing levels and accommodate currently projected freight and passenger growth within the corridor with the addition of HSR service. The BNSF Colton Component includes an intermodal rail yard, railroad lead tracks, circulation and roadway modifications, and utility modifications. The BNSF Colton Component is in the southwestern part of San Bernardino County, mostly within an unincorporated area of the county, while the remainder is primarily in Colton with a small portion of the site's southern extent in Grand Terrace. The BNSF Colton Component is generally south of Interstate 10 and the Union Pacific Railroad lines and north of the Santa Ana River. See Figure 2-3 for an overview of the BNSF Colton Component.



Source: Authority and BNSF, 2020

Figure 2-3 BNSF Colton Intermodal Facility Component

2.2 Introduction to the High-Speed Rail System

The Authority proposes to build, operate, and maintain an electric-powered HSR system in California, connecting the San Francisco Bay Area and Central Valley to Southern California. When completed, the nearly 800-mile train system would provide new passenger rail service to more than 90 percent of the state's population. The planning, design, construction, and operation of the HSR system are the responsibility of the Authority. The Authority's statutory mandate is to develop an HSR system that is coordinated with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports. The Authority's plans call for high-speed intercity train service on more than 800 miles (1,287.5 kilometers) of tracks throughout California, connecting the major population centers in Sacramento, the San Francisco Bay Area, the Central Valley, the Los Angeles Basin, Inland Empire, Orange County, and San Diego.

The HSR system implementation is planned in two phases. Phase 1 would connect San Francisco to the Los Angeles Basin and Anaheim. Phase 2 would connect the Central Valley Merced Station to Sacramento and connect Los Angeles to San Diego. The HSR system would meet the provisions and requirements of the Safe, Reliable, High-Speed Passenger Train Bond Act of the 21st Century (Proposition 1A), adopted by California voters in November 2008, including the requirement for a maximum nonstop service travel time between San Francisco and Los Angeles of 2 hours and 40 minutes. The project section, including the recently added BNSF Lenwood and Colton Components, is a critical link in Phase 1 of the HSR System, connecting major population areas in Southern California and providing connections to existing and proposed public transit networks.

The HSR system is envisioned as an electrically powered, high-speed, steel-wheel-on-steel-rail technology, which would employ the latest technology, safety, signaling, and automated train control systems. The trains would be capable of operating at speeds of up to 220 miles per hour over fully grade-separated, dedicated tracks. The proposed infrastructure and systems of each HSR alignment alternative are composed of trains, tracks, grade-separated rights-of-way, stations, train control, power systems, and maintenance facilities.

2.3 Purpose of Scoping

Scoping is an important element in the process of determining the focus and content of an EIR/EIS, as it helps identify the range of alternatives, environmental effects, and mitigation measures to be analyzed in depth, while also identifying and eliminating from detailed study the issues that are not significant or that have been covered by prior environmental review. Scoping is also an effective way to bring together and address the concerns of the public, affected agencies, and other interested parties. Significant issues may be identified through public and agency comments. The Council on Environmental Quality Regulations and CEQA describe scoping. Scoping under NEPA is governed by Council on Environmental Quality Regulations at 40 Code of Federal Regulations Section 1501.7. Scoping under CEQA is governed by California Public Resources Code Section 21083.9 and California Code of Regulations, Title 14 (State CEQA Guidelines) Sections 15082 and 15083.³

Scoping is not conducted to resolve differences concerning the merits of a project or to anticipate the ultimate decision on a project. Rather, the purpose of scoping is to help ensure the preparation of a comprehensive and focused EIR/EIS that provides a sound basis for the decision-making process.

³ The Council on Environmental Quality issued new regulations on July 14, 2020, effective September 14, 2020, updating the NEPA implementing procedures at 40 Code of Federal Regulations Parts 1500–1508. However, this project initiated NEPA before the effective date and is not subject to the new regulations, relying on the 1978 regulations as they existed prior to September 14, 2020. All citations to Council on Environmental Quality regulations in this document refer to the 1978 regulations, pursuant to 40 Code of Federal Regulations 1506.13 (2020) and the preamble at 85 *Federal Register* 43340.

The intent of the project section scoping process is to:

- Educate agencies and the public on the inclusion of the BNSF Lenwood and Colton Components in the project section.
- Inform public agencies and interested members of the public about the project, including compliance with NEPA and CEQA requirements, and the Authority's actions in relation to it.
- Assist with identifying the range of potential environmental impacts and mitigation measures to be considered in the Draft EIR/EIS.
- Develop an expanded database of agencies and individuals interested in the future actions relative to the Draft EIR/EIS.

2.4 Use of the Scoping Report

The Authority, as lead agency under CEQA and NEPA, will use this scoping report to help determine the impacts, mitigation measures, and alternatives that should be studied in the Draft EIR/EIS for the project. Under the Memorandum of Understanding executed by the Federal Railroad Administration and the State of California on July 23, 2019, the Authority is the project's lead agency under NEPA. Prior to the July 23, 2019, Memorandum of Understanding, the Federal Railroad Administration was the federal lead agency.

2.5 Description of Previous Scoping

In 2007, the Authority submitted an NOP to the State Clearinghouse and an NOI for publication in the *Federal Register* and distributed to elected officials; local, regional, and state agencies; and the interested public. The NOP and NOI identified the purpose of the project, the project limits, a description of alternatives to be considered, the need for agency input, potential environmental impacts of the project, points of contact for additional information regarding the project, and the dates and locations of the scoping meetings. The 30-day public comment period began on March 15 and closed on April 27, 2007.

Scoping activities for the Draft EIR/EIS in April 2007 included public workshops and scoping meetings that drew over 100 participants and resulted in a total of 64 comments. Major comment topics included environmental issues, alignment and station alternatives, connectivity, impacts on other transportation facilities, alternative technologies, funding, cost, and revenue.

The geographical extent of the project section led to scoping meetings being held in Los Angeles, Anaheim, and Norwalk between April 5 and April 12, 2007. At each location, two sessions were offered, with the first session from 3:00 to 5:00 p.m. and the second session from 6:00 to 8:00 p.m. Each session included an open house followed by a formal presentation and concluded with a second open house session.

The Authority held the meeting in Los Angeles as a combined scoping meeting with the Los Angeles to Palmdale Project Section. Similarly, the Authority jointly held the scoping meeting in Anaheim with the City of Anaheim, which provided information about the proposed Anaheim Regional Transportation Intermodal Center.

At each meeting, attendees were greeted and asked to sign in so they could receive future notification. The meeting format began with a 45-minute open house session during which Authority staff welcomed the attendees, presented an overview of the project, reviewed project information handouts and exhibits on display, responded to individual questions, and provided options available for submitting public comments. The public was encouraged to ask questions.

Materials on display during the scoping meetings included exhibits and project information handouts that were also available on the Authority's website at www.cahighspeedrail.ca.gov. The Authority website has since been migrated to www.hsr.ca.gov. The 2007 scoping report is available upon request. The Authority encourages written requests submitted via our Public Records Portal at <https://hsr-ca.nextrequest.com/>.

2.6 Latest Scoping Efforts

The Authority initiated this most recent public scoping process with the issuance of the NOP, submitted to the State Clearinghouse on August 20, 2020 (Appendix I.2), and the NOI published in the *Federal Register* on August 25, 2020 (Appendix I.1). The Authority sent printed copies of the NOP to previously identified and potential responsible and cooperating agencies at the federal, state, and local levels requesting that they provide written comments about the applicable permit and environmental review requirements of the agency, and the scope and content of the environmental information germane to the agency's responsibilities in connection with the project.

The Authority conducted the public scoping period between August 25, 2020, and September 24, 2020 (30 days). In response to the global health crisis surrounding the COVID-19 pandemic and Governor Gavin Newsom's Executive Order N-33-20, the Authority conducted public outreach activities virtually. These included one agency scoping meeting on September 9, 2020, and two public scoping meetings on September 10 and 12, 2020. In addition, the Authority held an informal TTH on September 3, 2020, in which over 5,900 participants joined via telephone conference. The Authority conducted the meetings to promote awareness of the project updates and encourage submittal of scoping comments.

Notification methods for the public scoping process included:

- **Mailing of Notices:** The Authority sent public scoping meeting notices (Appendix A.1) in English with a Spanish inset to 69,794 property owners, residents, and business tenants within:
 - A 500-foot buffer from the project footprint (including the HSR Passenger Rail Corridor and BNSF Lenwood and Colton Components)
 - A half-mile buffer around proposed stations, grade separations, and unincorporated areas
- **Door-to-Door Distribution to Targeted Areas:** The Authority distributed bilingual (English and Spanish) notices (Appendix A.2) door to door to identified environmental justice (EJ) project areas targeted by their proximity to the proposed alignment. EJ populations are defined as areas of minority and low-income. For this outreach effort, the Authority distributed 1,577 notices to the targeted neighborhoods of Rancho La Paz Mobile Home Park and Del Estes Mobile Home Estates in Anaheim, Los Nietos in unincorporated Whittier, and the Ayres community and businesses along Washington Boulevard in Commerce. The Authority also distributed these notices in Colton, in the neighborhood directly adjacent to the proposed BNSF Colton Component between Rancho Avenue and La Cadena Drive, and the two densely populated unincorporated areas by the BNSF Lenwood Component including businesses along Main Street and the housing tract on Cam Del Sol.
- **Legal and Display Advertisements:** The Authority published legal notices and display advertisements in local newspapers (Table 4-1 and Table 4-2 and Appendices C.1 and C.2). See Section 4.9, Display Advertisements, and Section 4.10, Legal Advertisements, for additional details.
- **Geofencing Advertisements:** The Authority implemented a digital geofencing advertisement campaign from September 11 to September 24, 2020, to targeted areas to reach additional audiences for the scoping meetings (Appendix B.1). See Section 4.8, Geofencing Advertisements, for additional details.
- **Social Media Targeted Advertisements and Posts:** The Authority placed social media advertisements on Facebook and targeted users residing along the project section mainline corridor as well as the BNSF Lenwood and Colton Component areas. In addition, the Authority made posts on its Facebook, Twitter, and LinkedIn social media pages. See Section 4.12, Social Media Targeted Advertisements and Posts, for additional details.
- **Electronic Distribution:** The Authority sent multiple emails and email blasts (eblast) (Appendix A.3) to stakeholders, elected officials, agency staff, and interested individuals leading up to the virtual scoping meetings. The Authority also featured the electronic public scoping notice on its

website and shared it with local cities, agencies, elected officials, and key stakeholder groups for posting on their respective websites. See Section 4.3, Email Blasts, for additional details.

- **Electronic Toolkit and Flyer Distribution:** Because of the COVID-19 global health crisis, the Authority digitally distributed copies of the virtual public scoping meetings flyer to offices of elected officials, libraries, community centers, community-based organizations, and other civic centers in an effort to build awareness. Authority staff conducted calls directly to these organizations requesting meeting information be posted to their websites and respective social media platforms. See Section 4.4, Extended Stakeholder Notification, for additional details.
- **Authority’s Website:** The Authority posted information on the project section including details on public scoping meetings and TTH dates, times and access information, fact sheet, comment form, project corridor map, and Revised NOP in English, Spanish, Chinese, Japanese, Korean, and Tagalog at [HSR.ca.gov](https://www.hsr.ca.gov) throughout the scoping process. See Section 4.7, Website, for additional details.
- **Project Section Website:** To enhance access to information on the scoping process and materials, the Authority developed an online open house website (meethrsocal.org) and made it available throughout the scoping period. See Section 4.7 for additional details.
- **Briefings/Office Hours:** In addition to public scoping meetings, the Authority offered office hours and briefings to elected staff representatives, community organizations, neighborhood councils, identified EJ organizations, and other interested persons. EJ organizations are environmental advocacy groups focused on awareness and representation of low-income and minority residents. Authority staff conducted office hours and briefings. See Section 4.4 for additional details.
- **Banners:** To help promote public scoping meetings and the public scoping period, the Authority posted English and Spanish banners (Appendix B.3) featuring meeting details as well as contact information (website and helpline) in high-traffic locations in the vicinity of the proposed BNSF Colton Component, including at Veteran’s Park in Colton and at two separate locations in Grand Terrace. See Section 4.13, Banners, for additional details.
- **Earned Media and Cable Slides:** Nine articles (Appendix D.1) were published prior to and during the public scoping period. Key stakeholder organizations and media also posted public scoping details on their social media platforms. To further saturate the public scoping meeting information and process, the Authority developed and shared English and Spanish cable slide graphics (Appendix B.2) with corridor cities as well as with the Cities of Colton and Barstow for display on their respective cable channels via a toolkit (Appendix B.4). See Section 4.5, Cable Slide, and Section 4.11, Earned Media and Stakeholder Coverage, for additional details.

3 STAKEHOLDER AND ELECTED MEETINGS

Ongoing outreach to stakeholders throughout the project section was conducted leading up to the summer 2020 public scoping process. Continued communication with stakeholders has been critical in generating overall awareness of the project section and public scoping process given the limitations of in-person gatherings because of COVID-19 health restrictions. In response to the unprecedented health crisis and out of an abundance of caution for health and safety, the Authority made a substantial change in outreach strategy to eliminate public in-person meetings and events and instead move toward a safer, virtual online engagement approach and meeting format. The outreach strategy looked beyond traditional means of communication tools to reach communities along the project corridor and included the addition of text communication to inform TTH and the implementation of an online geofencing campaign. The Authority continued to use traditional methods as the foundation of the outreach strategy during this period, which were conducted in partnership with elected officials, cities, and key stakeholders within the project corridor who helped with the promotion of the public scoping process and supporting outreach activities, including the TTH and public scoping meetings, through their various communication tools. Because of the addition of the BNSF Lenwood and Colton Components, the Authority made special outreach efforts to the Barstow and Colton communities, elected officials, and key stakeholders. Details on these and other additional methods may be found in the following sections.

3.1 Stakeholder Briefings

The Authority held briefings with elected officials, agencies, cities, and other key stakeholders to provide project updates, including the new BNSF Lenwood and Colton Components, as well as details on the public scoping process. Table 3-1 and Table 3-2 provide a summary of the key stakeholder meetings conducted in preparation for the 2020 scoping meeting series.

3.1.1 Elected Official Briefings and Legislative Group Briefings

The Authority conducted coordination with elected officials on an ongoing basis leading up to the release of the Revised NOP/NOI and public scoping to provide a project summary and introduce the BNSF Lenwood and Colton Components. This included one-on-one briefings to elected officials in the Inland Empire. Prior to the scoping meetings, the Authority hosted two Legislative Group Briefings to present the proposed information to be shared with the public. The first of the two Legislative Group Briefings centered around elected officials in the Inland Empire and the second Legislative Group Briefing targeted elected officials along the HSR Passenger Rail Corridor. The Authority provided an opportunity for participants to preview information that would be shared with the public including the State's Preferred Alternative and the introduction to the BNSF Lenwood and Colton Components, and addressed questions and concerns. Table 3-1 summarizes the coordination with local elected officials leading up to the public scoping process.

In response to the COVID-19 pandemic and health and safety precautions, the Authority held the Legislative Group Briefings virtually on June 10 and June 11, 2020. Nine legislative staff representatives out of the 69 invitees participated in the two briefings: four elected official representatives at the June 10 meeting and five elected official representatives at the June 11 briefing. The Authority previewed the presentation to be shown at a forthcoming Stakeholder Working Group (SWG) meeting and the public scoping meetings. The presentation included an overview on the statewide HSR program, project section, BNSF Lenwood and Colton Components, scoping process, and next steps. Legislative office representatives were given the opportunity to ask questions and provide feedback. The presentation and meeting summary from the Legislative Group Briefings can be found in Appendix E.5.

Table 3-1 Elected Official Briefings and Legislative Group Briefings

#	Date	Meeting
1.	2/12/19	Senator Tom Umberg's office (District 34) – staff briefing
2.	4/10/19	Senator Robert Archuleta's office (District 32) – staff briefing
3.	12/18/19	San Bernardino County Supervisor Robert Lovingood's office (District 1) – staff briefing
4.	12/19/19	San Bernardino County Supervisor Josie Gonzales's office (District 5) –staff briefing
5.	12/19/19	San Bernardino County Supervisor Dawn Rowe's office (District 3) – staff briefing
6.	12/19/19	City of Grand Terrace Mayor and staff briefing
7.	1/8/20	San Bernardino County Supervisor Janice Rutherford's office (District 2) – staff briefing
8.	1/8/20	San Bernardino County Supervisor Curt Hagman's office (District 4) – staff briefing
9.	6/10/20	Legislative Group Briefing #1
10.	6/11/20	Legislative Group Briefing #2

3.1.2 City Government Coordination

The Authority conducted ongoing briefings with cities in the Inland Empire to discuss the BNSF Lenwood and Colton Components. Meetings provided an opportunity for the Authority to collaborate with the cities, share the latest project information, and respond to questions and concerns as the project progresses through the environmental process. Additionally, leading up to the scoping comment period, the Authority held one-on-one briefings with cities along the HSR Passenger Rail Corridor as well as with jurisdictions along the corridor connecting to and at the BNSF Lenwood and Colton Component areas on an as-needed basis. Table 3-2 identifies the 26 meetings that have taken place between November 2019 and the summer 2020 public scoping process.

Table 3-2 City Coordination

#	Date	Meeting
1.	11/13/19	City of Norwalk staff briefing
2.	11/21/19	San Bernardino County Transportation Authority Executive Director briefing
3.	12/9/19	County of San Bernardino Office of Chief Executive Officer briefing
4.	12/14/19	City of Anaheim staff briefing
5.	12/9/19	City of Barstow staff briefing
6.	12/10/19	City of Colton staff briefing
7.	12/11/19	City of Pico Rivera staff briefing
8.	12/19/19	City of Grand Terrace staff briefing
9.	1/15/20	Orange County Transportation Authority staff briefing
10.	1/29/20	City of Anaheim staff briefing
11.	2/10/20	City of Anaheim staff Anaheim Regional Transportation Intermodal Center walk-through
12.	2/24/20	City of Colton staff briefing
13.	3/10/20	City of Colton Railroad Subcommittee briefing
14.	3/10/20	San Bernardino County Public Works briefing

#	Date	Meeting
15.	4/29/20	Riverside County Transportation Commission Executive Director briefing
16.	6/16/20	Colton Railroad Subcommittee staff briefing
17.	6/17/20	Gateway Cities High-Speed Rail Technical Advisory Committee briefing
18.	6/29/20	City of Jurupa Valley staff briefing
19.	7/7/20	City of Anaheim staff briefing
20.	7/7/20	City of Buena Park staff briefing
21.	7/7/20	City of Fullerton staff briefing
22.	7/9/20	City of Colton staff briefing
23.	7/14/20	County of San Bernardino staff briefing
24.	7/23/20	City of Buena Park staff briefing
25.	9/2/20	City of Colton staff briefing
26.	9/17/20	City of Rialto staff briefing

3.1.3 Stakeholder Working Group

SWGs are composed of community leaders and stakeholders within the HSR Passenger Rail Corridor area who represent a broad range of regional and local interests. SWG meetings are generally held prior to public meetings and are used to introduce the information in advance of sharing with the general public. Since 2016, the Authority has been conducting these meetings to offer an opportunity to partner with local leaders and work together to share information and receive feedback before meeting with the community.

On July 16, 2020, the Authority held an SWG meeting for the project section. Out of an abundance of caution for public health because of the COVID-19 pandemic, the Authority held the SWG meeting online instead of in person. The Authority provided updates on the statewide HSR program and project section and introduced the new BNSF Lenwood and Colton Components. The Authority invited stakeholders in the HSR Passenger Rail Corridor to participate in an SWG, as this type of communication and meeting format had already been established over the years and used at previous meeting series. Because of COVID-19, the Authority reached out to new identified BNSF Lenwood and Colton Component stakeholder groups and offered an introduction to the project via phone call; follow-up information was provided about how to participate at upcoming public scoping meetings. Additionally, the Authority briefed BNSF Lenwood and Colton Component elected, county, and city staff, as noted in the previous section.

At the HSR Passenger Rail Corridor SWG meeting, the Authority discussed the environmental process and shared information on the upcoming public scoping process and public meetings. SWGs continue to be an important component of the outreach process, as they allow the Authority opportunities to understand the concerns of stakeholders and potential impacts the project could have on these communities. At the conclusion of the SWG meeting, the Authority encourage attendees to share the meeting information with their constituencies prior to the initiation of the formal scoping period.

In summary, 390 stakeholders along the HSR Passenger Rail Corridor were invited to participate in the SWG meeting and follow-up calls were placed to SWG invitees to encourage participation. A total of 29 stakeholders attended the online SWG meeting. Meeting notes from the SWG meeting can be viewed in Appendix E.6.

4 NOTIFICATION OF SCOPING PERIOD

Notification of scoping meetings for this series included various forms of printed and digital messaging. Awareness campaigns included rounds of e-communication, printed invitations, flyer distribution, phone calls, bilingual social media advertisements and posts, bilingual geofencing advertisements, multi-language newspaper advertisements, stakeholder earned media, website updates, and local banners. More details on notification distribution and metrics can be seen below.

4.1 Mail and Door-to-Door Notifications

The Authority mailed bilingual (English and Spanish) printed notices (Appendix A.1) promoting the public scoping process, including the comment period and public meetings, to 69,794 addresses, including 2,992 stakeholders from the project database and 66,802 property owners and occupants within 500 feet of the project footprint and 0.5 mile from each proposed project section station, relocated Metrolink stations, other existing Metrolink stations, proposed grade separations, and unincorporated areas.

Additionally, the Authority identified specific neighborhood pockets for targeted door-to-door notification based on their proximity to the proposed alignment and on the potential impacts the project may have on the neighborhoods. The areas chosen were also identified as EJ populations. The purpose of this task was to provide these communities equal access to the decision-making process and deliver the same degree of awareness and protection regarding environmental and health hazards. The Authority distributed 1,577 notices door to door to the targeted neighborhoods of Rancho La Paz Mobile Home Park and Del Estes Mobile Home Estates in Anaheim, Los Nietos in unincorporated Whittier, and the Ayres community and businesses along Washington Boulevard in Commerce. The Authority also distributed these notices in Colton, the neighborhood directly adjacent to the proposed BNSF Colton Component between Rancho Avenue and La Cadena Drive, and the two densely populated unincorporated areas by the BNSF Lenwood Component including businesses along Main Street and the housing tract on Cam Del Sol.

4.2 Agency Notification

The Authority held the agency scoping meeting on September 9, 2020. The Authority distributed meeting notices via email to 121 federal, state, regional, and local agency contacts. The meeting format included an introduction, project overview, and PowerPoint presentation followed by a question-and-answer session. See Appendix A.10 for the full list of invitees.

4.3 Email Blasts

The Authority distributed an electronic version of the public scoping meeting flyer via eblast to 3,739 email contacts in the project section stakeholder database. The Authority distributed the notice three times. The first notice was shared the day of the TTH (September 3, 2020) inviting the public to join in the upcoming scoping meetings. The second eblast was sent September 8, 2020, 2 days prior to the first scoping meeting. The third and final eblast was disseminated September 10, 2020, on the day of the first of the two scoping meetings. The eblasts contained background information on the project, information about the scoping process, and instructions on how to submit a comment. The Authority distributed all eblasts in English and Spanish. Copies of the eblasts may be viewed in Appendix A.3.

4.4 Extended Stakeholder Notification

The Authority created a variety of outreach notifications to ensure the community was well informed of the TTH and public scoping meetings. In advance of these events, the Authority made approximately 390 direct phone calls to various elected officials, cities, counties, town and neighborhood councils, and stakeholder organizations along the HSR Passenger Rail Corridor, with an additional 65 phone calls conducted in the BNSF Lenwood and Colton Component areas. During this time, the project team shared meeting details on the upcoming scoping process and requested assistance in sharing the meeting information with respective constituencies. Each contact received a follow-up email with the project toolkit and were encouraged to contact the project team with questions.

In an effort to facilitate sharing of scoping information, the Authority provided SWG members, cities, elected officials, and other key stakeholder contacts in the BNSF Lenwood and Colton Component areas with a “toolkit” (Appendix B.4) detailing methods for disseminating information to assist in promoting the upcoming meetings and submitting formal comments. These included eblast, website post, newsletter announcement, events calendar post, social media post, and public access channel. The Authority prepared copy for each of these items and linked the English and Spanish electronic flyers to the toolkit with unique web addresses for easy sharing. By partnering with these key stakeholders, the toolkits continue to be an effective way to circulate meeting information and reach community members who may not have been previously informed. The project toolkit was only one method of notification during the scoping process. The additional methods are described in the following sections.

4.5 Cable Slide

Cable slides are informative, simple graphic and text designed for ease of city use on public online or television channels. The Authority developed English and Spanish cable slide graphics (Appendix B.2) with the project section branding to announce and provide details on the two upcoming public scoping meetings and the TTH. These graphics also included website information for viewing the revised NOP and NOI, information for submitting a formal comment, the deadline to submit a comment, the project helpline number, and the project email address as well information for signing up for office hours for a one-on-one appointment with the Authority. The Authority shared the English and Spanish cable slide graphics with the corridor cities via a toolkit (Appendix B.4).

4.6 Flyer Distribution

Because of the public health restrictions in place, physical flyer bundles were not distributed for public counter placement, as locations notified during previous outreach efforts were closed to the community. Instead, the Authority provided digital bilingual (English and Spanish) flyers describing the TTH, public scoping meetings, office hour sign-up, and instructions on submitting comments electronically, which were then distributed to database stakeholders, elected officials, and city offices. Stakeholders were encouraged to post the meeting flyer on their respective websites and the project team offered to produce flyer prints on an as-needed basis.

During the second public scoping meeting on September 12, 2020, Dr. Luis González, City of Colton Councilmember, requested copies of scoping flyers and posters to disseminate in south Colton. The Authority produced a modified flyer and poster, omitting the scoping meeting information, as they had already occurred, in response to this request and included information on how to participate in the public scoping process, including how to submit a public comment. The Authority provided and delivered 200 print flyers and 12 posters to Dr. González at Colton City Hall.



4.7 Website



The Authority created an online open house website (meethrsocal.org) to provide increased public access to the Revised NOP/NOI during the scoping period in response to health and safety directives concerning COVID-19. The website launched on August 24, 2020, and was available throughout the scoping period. For accessibility, the website included a plug-in for language translation to the five Limited English Proficiency languages (Spanish, Chinese, Japanese, Korean, and Tagalog) identified for the project section.

The online open house allowed people to browse at their own pace and review maps and documents, watch videos in English and Spanish, and submit written comments during the scoping period, and included information on how to join the virtual public scoping meetings and TTH.

The public scoping meetings and TTH were recorded and videos or recordings were posted to the website for public viewing. Additionally, website visitors could sign up for virtual office hours to set up an appointment and meet with Authority staff.

During the public scoping period, the meethrsocal.org home page received 2,321 visits and an accrued a total of 6,459 webpage views (accounting for views across each webpage). Aside from the home page, the scoping meetings and TTH page was the second most visited page, with 870 (13 percent) webpage views, followed by the Station 1: Welcome page with 458 (7 percent) webpage views. Figure 4-1 shows the number of website views by date.

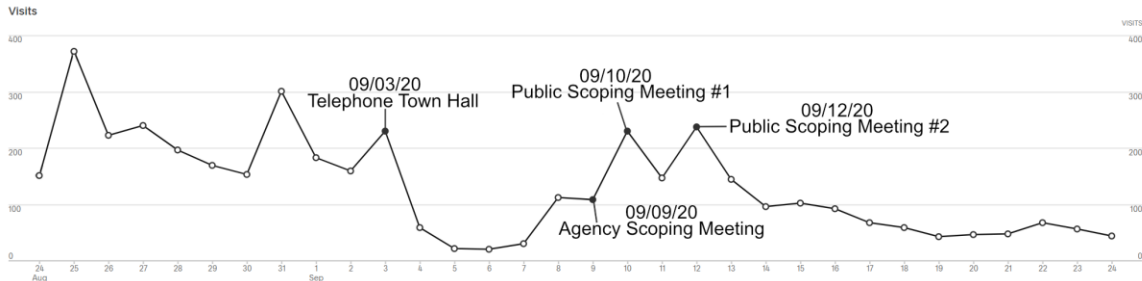


Figure 4-1 Daily meethrsocal.org Website Views

The website consisted of the following pages and corresponding documents displayed in Appendix F:

- Home Page (Appendix F.1)
- Station 1: Welcome (Appendix F.2)
- Station 2: Statewide Overview (Appendix F.3)
- Station 3: Los Angeles to Anaheim Project Section (Appendix F.4)
- Station 4: Scoping (Appendix F.5)
- Station 5: How to Provide Comment (Appendix F.6)
- Station 6: Learn More about California High-Speed Rail (Appendix F.7)
- Next Steps (Appendix F.8)
- Contact Us (Appendix F.9)
- Public Scoping Meetings and TTH (Appendix F.10)
- Office Hours (Appendix F.11)

4.8 Geofencing Advertisements

To augment scoping standard notification efforts, the Authority implemented a geofencing digital advertisement campaign to notify the public of the September 2020 public scoping meetings as well as the public scoping comment period. Geofencing advertisements are used as a marketing tool to digitally display mobile and stationary electronic devices in a global positioning system–defined geographic boundary. This technology allows for digital advertisement software to target people in a defined area. The Authority deployed the geofencing campaign from September 11 to 24, 2020, and focused on reaching individuals in specific target areas such as Lenwood, Colton, and northwest Los Angeles. The Authority applied current data from February 2020 to capture larger audiences that traveled through these areas, as some audiences may have altered their travel patterns during the COVID-19 pandemic.

The Authority developed and used two sets of graphic advertisements (Appendix B.1) for this campaign. The first campaign provided information on the public scoping meeting details and project website and the second detailed the public scoping comment period deadline and project website (meethrsocal.org). The total engagement resulted in the digital advertisements being viewed online 220,106 times on electronic devices within the geographic boundary, also known as *digital impressions*. Additionally, the advertisements were clicked on 396 times, leading to website visits for more information. The campaign helped achieve the goal of sharing information about the public scoping meetings through a combination of digital impressions and website visits.

The click-through rate consists of clicks divided by digital impressions. For this campaign, the click-through rate was 0.018 percent, which is comparable to industry averages. Please see Appendix B.1 for more detailed information regarding audience insights and geofencing advertisement statistics.

4.9 Display Advertisements

The Authority featured display advertisements (Appendix C.1) in 12 publications (print or electronic online), covering six languages (English, Spanish, Chinese, Korean, Japanese, and Tagalog), to advertise the TTH, public scoping meetings, and project website information to communities along the project section, including the communities of Lenwood and Colton. The Authority published display advertisements in print, electronically, and in online blogs between late August through September 2020, as detailed in Table 4-1. A total viewer circulation of 1,329,173 was achieved through this extensive display advertisement campaign.

Table 4-1 Published Display Advertisements

#	Publication	Type	Circulation	Publication Date(s)	Communities
1.	Anaheim Bulletin	Print	8,921	9/3/20	Anaheim, Anaheim Hills, Orange, Villa Park
2.	Asian Journal (Tagalog)	Print	800,000	8/29/20	Filipino communities, Los Angeles County, Orange County, Inland Empire
3.	CSUF Daily Titan	Print	16,000	8/31/20–9/3/20	CSUF campus/students, surrounding communities
4.	CSUF Daily Titian (same as print)	Online	15,012	8/31/20–9/3/20	CSUF campus/students, surrounding communities
5.	Orange County Register	Print	66,000	8/31/20	Orange County
6.	La Opinion (Spanish)	Online	50,057	9/4/20–9/13/20	Los Angeles County, Orange County, Inland Empire
7.	Montebello Reporter	Print	20,000	9/1/20	Montebello
8.	Montebello Reporter (same as print)	Online	1,143	9/1/20	Montebello
9.	Pasadena Star News (same as San Gabriel Valley Tribune)	Print	57,000	9/1/20	Pasadena, San Gabriel Valley
10.	Rafu Shimpo (Japanese)	Print	8,000	9/3/20	Los Angeles County
11.	San Gabriel Valley Tribune	Print	57,000	9/1/20	San Gabriel Valley, Southern California
12.	The Korean Times (Korean)	Print	53,374	8/31/20	Southern California
13.	The Norwalk Patriot	Print	25,000	9/4/20	Norwalk, surrounding communities
14.	The Norwalk Patriot	Online	52,500	9/1/20–9/30/20	Norwalk, surrounding communities
15.	Whittier Daily News (same as San Gabriel Valley Tribune Print)	Print	61,000	9/1/20	Whittier, Pico Rivera, Santa Fe Springs, La Mirada
16.	Whittier Daily News (same as San Gabriel Valley Tribune Print)	Online	54,166	9/1/20	Whittier, Pico Rivera, Santa Fe Springs, La Mirada
17.	Chinese Daily News (Mandarin)	Print	50,000	8/29/20	Southern California
TOTAL CIRCULATION			1,329,173		

CSUF = California State University, Fullerton

4.10 Legal Advertisements

The Authority featured legal advertisements (Appendix C.2) in seven print publications to introduce the public scoping process and public scoping meetings for individuals living and working within the project section, including the BNSF Lenwood and Colton Component areas. These advertisements included information concerning project objectives and purpose, evaluated alternatives, and contact information for public use to submit an official scoping comment. The Authority published these advertisements between August 25 and 28, 2020, as detailed in Table 4-2. This legal ad campaign was included in print publications with circulation reach totaling 520,660.

Table 4-2 Published Legal Advertisements for Virtual Scoping Meetings

#	Publication	Type	Circulation	Publication Date(s)	Communities
1.	Excelsior (Spanish)	Print	71,000	8/28/20	Inland Empire, Orange County
2.	La Opinion (Spanish)	Print	71,000	8/25/20	Los Angeles County, Orange County, Inland Empire
3.	La Prensa (Spanish)	Print	71,000	8/28/20	Orange County, Inland Empire
4.	Los Angeles Times	Print	107,660	8/25/20	Los Angeles County, Orange County
5.	Orange County Register	Print	66,000	8/25/20	Orange County
6.	San Bernardino Sun	Print	67,000	8/25/20	Inland Empire
7.	Inland Valley Daily Bulletin	Print	67,000	8/25/20	Inland Empire
TOTAL CIRCULATION:			520,660		

4.11 Earned Media and Stakeholder Coverage

In addition to the display advertisements, there were ten articles published prior to and during the public scoping period (Table 4-3). Key stakeholder organizations and news media have also posted about the project via social media platforms, primarily Twitter, as shown in Table 4-4 and Appendix D. These types of stakeholder digital coverage are referred to as *earned media*.

Table 4-3 Earned Media Articles

#	Date	Publication	Article Title
1.	8/25/20	Railway Age	“CHSRA Releases Revised NOP, NOI for LA to Anaheim Project Section”
2.	8/25/20	StreetsBlog Cal	“High Speed Rail: Accommodating Freight and Passengers on the L.A.-to-Anaheim Route”
3.	8/26/20	Orange County Breeze	“California High-Speed Rail Authority releases environmental scoping document for Los Angeles to Anaheim Project Section”
4.	8/26/20	RT&S	“CHSRA releases revised NOP, NOI for L.A.-to-Anaheim high-speed rail project”
5.	8/26/20	Progressive Railroading	“CHRSA [sic] issues environmental document for L.A.-Anaheim section”
6.	8/26/20	Global Railway Review	“Environmental scoping document released for Los Angeles to Anaheim high-speed section”

#	Date	Publication	Article Title
7.	8/31/20	Urbanize Los Angeles	"Environmental Review Begins for LA-to-Anaheim High-Speed Rail Corridor"
8.	9/1/20	Orange County Breeze	"Los Angeles to Anaheim Project Section Telephone Town Hall and Scoping Meetings taking place in this month"
9.	9/8/20	Fullerton Observer	"High Speed Rail Authority to Host Public Meetings on LA-to-Anaheim Stretch"
10.	9/9/20	StreetBlog LA	"California High-Speed Rail will host two virtual community meetings"

CHSRA = California High-Speed Rail Authority; NOI = notice of intent; NOP = notice of preparation

Table 4-4 Earned Media Online Posts

#	Date	Organization	Distribution Method
1.	8/25/20	MyTransit LA	Twitter post
2.	8/26/20	Global Railway Review	Twitter post
3.	8/26/20	Orange County Breeze	Twitter post
4.	8/26/20	MyTransit LA	Twitter post
5.	8/27/20	MyTransit LA	Twitter post
6.	8/31/20	International Railway Journal	Twitter post
7.	8/31/20	Urbanize LA	Twitter post

4.12 Social Media Targeted Advertisements and Posts

In advance of the virtual scoping meetings, the Authority secured Facebook advertisements in English and Spanish. These advertisements targeted Facebook users residing in the project section, including the BNSF Lenwood and Colton Component areas and were posted on August 25, 2020, as shown in Table 4-5.

Table 4-5 Facebook Advertisements

#	Publication Dates	Language	Impressions	Clicks
1.	8/25/20–9/3/20	English	69,404	551
2.	8/25/20–9/3/20	Spanish	18,930	115

In addition to paid advertisements, the Authority posted information regarding the TTH, public scoping meetings, and office hours sign-up option to its Facebook, Twitter, and LinkedIn social media pages as shown in Table 4-6.

Table 4-6 Social Media Posts

#	Publication Date	Platform	Subject
1.	9/2/20	Facebook	TTH/scoping meetings
2.	9/2/20	Twitter	TTH/scoping meetings
3.	9/2/20	LinkedIn	TTH/scoping meetings

#	Publication Date	Platform	Subject
4.	9/8/20	Facebook	Online office hours
5.	9/8/20	Twitter	Online office hours
6.	9/8/20	Twitter (Spanish)	Online office hours
7.	9/8/20	LinkedIn	Online office hours
8.	9/9/20	Facebook	Scoping Meeting #1
9.	9/9/20	Twitter	Scoping Meeting #1
10.	9/9/20	Twitter (Spanish)	Scoping Meeting #1
11.	9/9/20	LinkedIn	Scoping Meeting #1
12.	9/11/20	Facebook	Scoping Meeting #2
13.	9/11/20	Twitter	Scoping Meeting #2
14.	9/11/20	Twitter (Spanish)	Scoping Meeting #2
15.	9/11/20	LinkedIn	Scoping Meeting #2

TTH = Telephone Town Hall

4.13 Banners

To increase public awareness, the Authority developed English and Spanish banners (Appendix B.3) with details on the public scoping meetings, comment period, comment submittal deadline, website, and project helpline number. The Authority coordinated banner placements in various high-traffic strategic locations in the areas of Colton, Barstow, and Grand Terrace. Because of COVID-19 restrictions in place, most of the targeted banner placement location administrators were nonresponsive or could not provide banner placement approval. However, the Authority was successful in securing and placing banners at Veteran’s Park in Colton and two separate locations in Grand Terrace.

5 PUBLIC AND AGENCY INVOLVEMENT DURING PUBLIC SCOPING

In support of the public scoping process, the Authority hosted one TTH, one agency scoping meeting, and two public scoping meetings and offered various dates for office hour appointments in September 2020. The following agency and public engagement opportunities occurred during the public scoping process:

- TTH: September 3, 2020, 6:00 p.m. to 7:30 p.m.
- Agency Scoping Meeting: September 9, 2020, 2:30 p.m. to 4:30 p.m.
- Public Scoping Meeting #1: September 10, 2020, 5:00 p.m. to 7:30 p.m.
- Public Scoping Meeting #2: September 12, 2020, 10:00 a.m. to 12:30 p.m.
- Office hours: various dates offered in September 2020

5.1 Telephone Town Hall

A TTH is a community telephone meeting that engages identified public registered phone numbers in the project area and requests participation in a public forum.

The process starts the day before the event with an automated pre-call to participants announcing the event. The day of the event, invitees receive another recorded message that welcomes them to the event and asks them to simply stay on the line to join. Once on the TTH, participants can fully engage with the program by using their phone keypad to respond to poll questions and get in line to ask a live question on the air.

On September 3, 2020, the Authority hosted a TTH targeting community members along the proposed HSR Passenger Rail Corridor area, including the communities of Lenwood and Colton. The TTH featured project background, information on the environmental process, and a question-and-answer session. The Authority added this meeting platform to the original outreach plan to further engage residents that may not have internet or computer access. The Authority and BNSF team members were introduced and answered questions received from the public. A separate Spanish call-in line was also offered for those seeking simultaneous Spanish interpretation. See Appendix G.1 for the list of TTH participant counts.

Below is an overview of the TTH participation results:

- Total phone numbers called: more than 94,000
- Total accepted English calls: 5,907
- Total accepted Spanish calls: 63
- Peak concurrent callers, English line: 726
- Peak concurrent callers, Spanish line: 63
- 21 English questions submitted
- 3 Spanish questions submitted

5.2 Agency Scoping Meeting

The Authority held the agency scoping meeting in a virtual format because of the COVID-19 safety measures in place and occurred on September 9, 2020, from 2:30 p.m. to 4:30 p.m. The meeting included a PowerPoint presentation (Appendix E.3) that was tailored to agencies. The agency scoping meeting had 33 participants (Appendix G.2) from various agencies and a total of four formal comments were submitted and recorded by a stenographer during the meeting, as summarized in Chapter 6 of this report. See Appendix J.1 for a snapshot of the agency scoping meeting.

5.3 Public Scoping Meetings

The Authority held the public scoping meetings virtually and included a formal PowerPoint presentation (Appendix E.4) with an overview of the HSR program and the project section, introduction of the new BNSF Lenwood and Colton Components, project schedule, proposed grade separation locations, next steps, and question-and-answer session. The Authority conducted the public scoping meetings in English and Spanish to reach stakeholders in conformance with COVID-19 safety measures prohibiting in-person public meetings. Refer to Appendix G.3 for the September

10, 2020, list of public scoping meeting participants and Appendix G.4 for the September 12, 2020, list. A stenographer was online to record public comments during the public scoping meetings conducted in English and Spanish. A Spanish interpreter was also available to translate comments or questions submitted in Spanish. See Appendices J.2 through J.5 for screenshots of the English and Spanish virtual public scoping meetings and Table 5-1 for features of the meetings.

To increase public awareness, the Authority posts English and Spanish scoping meeting video recordings on its YouTube page for access throughout the life of the project. The videos continue to collect views. As of October 23, 2020, these video recordings garnered 655 views, as shown in Figure 5-1. The combined virtual public scoping meetings attracted 148 participants: 119 in the first and 29 in the second. The public scoping meetings conducted in English attracted 147 participants and the Spanish portion of the public scoping meetings one participant. In total, scoping meeting participants asked 32 questions.



Figure 5-1 Scoping Meeting Participation and Presentation Views

Table 5-1 Telephone Town Hall and Scoping Meeting Additional Features

Meeting Format	Date	Additional Features
Telephone Town Hall	Thursday, September 3, 2020	Offered in English with Spanish interpretation. Recordings of the English and Spanish Telephone Town Hall are posted on meethrsocal.org .
Agency Scoping Meeting	Wednesday, September 9, 2020	Virtual meeting offered in English only.
Public Scoping Meeting #1	Thursday, September 10, 2020	Virtual meeting offered in English and Spanish; meeting video recordings posted to YouTube for additional views.
Public Scoping Meeting #2	Saturday, September 12, 2020	Virtual meeting offered in English and Spanish; meeting video recordings posted to YouTube for additional views.

5.4 Office Hours

In addition to the TTH and agency and public scoping meetings, the Authority made office hour appointments available to the public, agencies, community and EJ organizations, elected staff representatives, and other stakeholders. Office hours were 15-minute one-on-one briefings held online or by telephone with the Authority. During these sessions, staff was available to answer questions. The Authority publicized office hour appointments using various methods including being announced at the public scoping meetings, eblast distributions, cable slide, flyers, and on the meethrsocal.org website. The Authority offered language interpretation services and provided them upon request. The Authority made office hour participants aware that questions and comments submitted during these briefings were not accepted as scoping comments, and were not part of the

public record. Three office hour briefings were requested and held as noted in Table 5-2. The Authority offered virtual office hours on the meethrsocal.org website with the following dates and times and additional dates and times were available upon request:

- Friday, September 11, 2020, from 1 p.m. to 3 p.m.
- Monday, September 14, 2020, from 11 a.m. to 1 p.m.
- Wednesday, September 16, 2020, from 9 a.m. to 11 a.m.
- Tuesday, September 22, 2020, from 12 p.m. to 2 p.m.

Table 5-2 Office Hour Briefings

#	Date	Meeting
1.	Wednesday, September 16, 2020	AMVAC (city of Commerce business)
2.	Thursday, September 17, 2020	City of Rialto
3.	Tuesday, September 22, 2020	Center for Community Action and Environmental Justice

5.5 Summary of Outreach Activities

The Authority began the public scoping period to introduce the BNSF Lenwood and Colton Components on August 25, 2020, and closed it on September 24, 2020 (30 days). The Authority has conducted extensive outreach to stakeholders in the project section continuing through public scoping. Outreach efforts improved awareness of the project and facilitated the outreach and notification efforts for the public scoping process. The Authority conducted outreach activities including outreach to business and community groups, early coordination with agencies, and elected official briefings.

5.6 Title VI Compliance

Title VI of the Civil Rights Act of 1964 (42 United States Code 2000d et seq.) (Title VI) prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

In compliance with Title VI of the Civil Rights Act of 1964 and its related statutes, the Authority developed its Title VI Civil Rights Program. This program is also inclusive of EJ and Limited English Proficiency communities regarding nondiscrimination efforts and compliance.

The Authority is committed to administering and maintaining nondiscrimination principles and goals to its programs and other activities. The Authority’s Title VI Policy states:

The California High Speed-Rail Authority is committed to ensuring that no person is excluded from participation in, nor denied the benefits of its programs, activities and services on the basis of race, color, national origin, age, sex, or disability as afforded by Title VI of the Civil Rights Act of 1964 and related statutes.

The Authority, as a federal grant recipient, is required by the Federal Railroad Administration to conform to Title VI of the Civil Rights Act of 1964 and related statutes. The Authority’s sub-recipients and contractors are required to prevent discrimination and validate non-discrimination in all of their programs, activities and services.

As permitted and authorized by Title VI, the Authority will administer a Title VI Program in accordance with the spirit and intent of the non-discrimination laws and regulations.

The Authority made Title VI compliance materials available on the meethrsocal.org project website, which featured details regarding the Authority's compliance with Title VI of the Civil Rights Act of 1964. In addition, the Authority posted details on public scoping meeting and TTH dates, times and access, fact sheet, comment form, project corridor map, and Revised NOP in English, Spanish, Chinese, Japanese, Korean, and Tagalog at HSR.ca.gov throughout the scoping process.

Spanish-language interpreters were available at the TTH and public scoping meetings. Both public scoping meetings used the Zoom online platform that allowed participants to join the meeting online or via telephone. The Spanish meetings were presented by a Spanish-speaking Authority team member who provided the main project information. The public scoping meeting notice, flyer, and eblasts included information on requesting other language services or reasonable accommodations to be made 3 working days prior to the scheduled meeting date. The Authority posted a link to the online Title VI Survey on the project website (meethrsocal.org) the day of each meeting. Title VI reports can be viewed in Appendix K.

Title VI

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving federal financial assistance.

6 SUMMARY OF SCOPING COMMENTS

The Authority received 131 comment submittals, which contained 401 individual comments from agencies, organizations, and individuals. These comment submittals included comment forms from the scoping meetings, comment forms mailed in, and letters, emails, and voicemail messages received via telephone calls. Appendix H presents the 131 comment submittals by affiliation type. Comments received during the project section public scoping process identified and commented on potential environmental impacts, mitigation measures, and alternatives as well as other general concerns.

This summary is divided into four major topic areas:

- **Section 6.2, General Project Concerns**, including the following subcategories: Purpose and Need (Section 6.2.1), Alternatives (Section 6.2.2), Project Definition (Section 6.2.3), and Public Engagement (Section 6.2.4). These topics include high-level comments about the project purpose, project description, and outreach process.
- **Section 6.3, Community Concerns**, including the following subcategories: Environmental Justice (Section 6.3.1), Regional Growth (Section 6.3.2), and Socioeconomics and Communities (Section 6.3.3). These topics include comments associated with population, economics, and equity.
- **Section 6.4, Other Environmental Concerns**, including the following subcategories: Transportation (Section 6.4.1), Air Quality and Global Climate Change (Section 6.4.2), Health Risks (Section 6.4.3), Noise and Vibration (Section 6.4.4), Safety and Security (Section 6.4.5), Land Use (Section 6.4.6), Public Utilities and Energy (Section 6.4.7), Hydrology and Water Quality (Section 6.4.8), Aesthetics and Visual Quality (Section 6.4.9), Cumulative Impacts (Section 6.4.10), Biological Resources and Wetlands (Section 6.4.11), Cultural Resources (Section 6.4.12), Parks, Recreation, and Open Space (Section 6.4.13), Hazardous Materials and Wastes (Section 6.4.14), and Geology, Soils, Seismicity, and Paleontological Resources (Section 6.4.15). These topics include comments about specific environmental issues.
- **Section 6.5, Process, Engineering, and Permitting Concerns**, including the following subcategories: Environmental Process (Section 6.5.1), Right-of-Way and Property Acquisition (Section 6.5.2), and Permitting (Section 6.5.3). These topics include comments about schedule, project milestones, property acquisitions, jurisdictional boundaries, and public works.

Issues identified during public scoping included, but were not limited to, the topics and subtopics summarized below. The Authority will consider the comments in the preparation of the Draft EIR/EIS within the pertinent resource area sections of that document, as appropriate.

6.1 Agency Comments Received

The Authority held an agency scoping meeting on September 9, 2020, and included a presentation to federal, state, and local agencies, followed by an informal question-and-answer session and an opportunity to provide formal agency comments, which were documented by a stenographer. Four agency scoping comments were received during that meeting and are captured in the summaries below.

In addition to participating in the agency scoping meeting, representatives of agencies and local jurisdictions participated in the public scoping meetings. The Authority received numerous letters in response to the Revised NOP/NOI. Table 6-1 lists the federal, state, regional, and local agencies that provided comments in response to the Revised NOP/NOI or at the scoping meetings. Agency comment submittals are included in Appendices H.1 through H.4.

Table 6-1 Federal, State, Regional, and Local Agency Comments Received

#	Agency and Staff Name	Date Received	Appendix H. Pg. No.	Comment Topics
Federal Agencies				
F-1	James Norris, United States Geological Survey	8/31/20	8	No comments until Draft EIR/EIS is ready to review
F-2	Peter M. Sanzenbacher, U.S. Fish and Wildlife Service	9/9/20	10	Biological resources and wetlands
F-3	Scott A. Sobiech, U.S. Fish and Wildlife Service	9/22/20	94	Purpose and need, alternatives, project definition, public engagement, noise and vibration, hydrology and water quality, cumulative impacts, biological resources, and wetlands
F-4	Carolyn Mulvihill, U.S. Environmental Protection Agency Region IX	9/28/20	99	Purpose and need, alternatives, public engagement, transportation, air quality and global climate change, health risks, and environmental justice
F-5	Amanda Swaller, U.S. Fish and Wildlife Service	9/9/20	121	Biological resources and wetlands
State Agencies				
S-1	Vanessa Velasco, Division of Environmental Planning, California Department of Transportation	9/2/20	124	Request for documents including Supplemental Alternatives Analysis, Alternatives Analysis, scoping, and Revised NOI/NOP
S-2	Erik Frost, California Department of Conservation	9/19/20	132	Geology, soils, seismicity, and paleontological resources
S-3	Vanessa Velasco, Division of Environmental Planning California Department of Transportation	9/22/20	134	Transportation
S-4	Twylay, California Department of Transportation	9/22/20	136	Project definition
S-5	Andrew Valand, California Department of Fish and Wildlife	9/23/20	137	Purpose and need, alternatives, project definition, environmental process, permitting, noise and vibration, land use, hydrology and water quality, aesthetics and visual quality, cumulative impacts, biological resources, and wetlands
S-6	Vanessa Velasco, Division of Environmental Planning, California Department of Transportation	9/23/20	147	Transportation
S-7	Andrew Valand, California Department of Fish and Wildlife	9/9/20	150	Hydrology and water quality

#	Agency and Staff Name	Date Received	Appendix H. Pg. No.	Comment Topics
S-8	Richard W, Corey, Executive Officer, California Air Resources Board	12/21/20 ¹	154	Alternatives, project definition, air quality and global climate change, health risks, environmental justice, parks, recreation, and open space
Local Agencies				
L-1	Sean Woods, County of Los Angeles Department of Parks and Recreation	9/2/20	180	Project definition, public engagement, right-of-way and property acquisition, parks, recreation, and open space
L-2	Alexis Leicht, Orange County Transportation Authority	9/2/20	184	Request for documents, including Supplemental Alternatives Analysis, Alternatives Analysis, scoping, and Revised NOI/NOP
L-3	Sheldon Peterson, Riverside County Transportation Commission	9/2/20	190	Request for documents, including Supplemental Alternatives Analysis, Alternatives Analysis, scoping, and Revised NOI/NOP
L-4	William Meade, Los Angeles Unified School District Office of Environmental Health and Safety	9/22/20	197	Transportation, air quality and global climate change, and noise and vibration
L-5	Owen Chang, Colton Joint Unified School District	9/23/20	202	Public engagement, transportation, air quality and global climate change, health risks, environmental justice, noise and vibration, cumulative impacts, and cultural resources
L-6	Dean Edwards, Los Angeles County Department of Regional Planning	9/23/20	209	Project definition
L-7	Anne Mayer, Riverside County Transportation Commission	9/23/20	214	Project definition, public engagement, transportation, air quality and global climate change, and noise and vibration
L-8	Ping Chang, Southern California Association of Governments	9/24/20	219	Environmental process

¹ At the request of the California Air Resources Board, the Authority agreed to accept the agency's comment after the end of the scoping comment period (September 24, 2020). The California Air Resources Board's comment has been acknowledged; however, as it was submitted on December 21, 2020, there was no comment breakdown.

#	Agency and Staff Name	Date Received	Appendix H. Pg. No.	Comment Topics
L-9	Rudy Emami, City of Anaheim	9/24/20	225	Air quality and global climate change, environmental justice, noise and vibration, cumulative impacts, cultural resources, safety and security, land use, socioeconomics and communities, public utilities and energy, hydrology and water quality, aesthetics and visual quality, cumulative impacts, biological resources and wetlands, regional growth, cultural resources, parks, recreation, and open space, and hazardous materials and waste
L-10	Darrell Johnson, Orange County Transportation Authority	9/24/20	230	Project definition, public engagement, right-of-way and property acquisition, and transportation
L-11	Adriana Raza, Los Angeles County Sanitation Districts Facilities Planning Department	9/24/20	235	Hydrology and water quality
L-12	Salima Mulji, Southern California Regional Rail Authority	9/24/20	238	Environmental process
L-13	Karen Peterson, City of Rialto	9/24/20	240	Project definition, transportation, and environmental justice
L-14	Tracy Jue, Los Angeles County Sheriff's Department – Facilities Planning Bureau	9/24/20	245	Safety and security
L-15	David Murray, City of Riverside	9/24/20	250	Transportation, air quality and global climate change, environmental justice, noise and vibration, and safety and security
L-16	Todd McIntyre, Southern California Regional Rail Authority	9/24/20	254	Purpose and need and project definition
L-17	Raymond Wolfe, San Bernardino County Transportation Authority	9/24/20	258	Alternatives, project definition, public engagement, transportation, air quality and global climate change, noise and vibration, hydrology and water quality, and aesthetics and visual quality
L-18	Terri Rahhal, San Bernardino County Land Use Services Department	9/24/20	269	Alternatives, project definition, transportation, air quality and global climate change, health risks, and environmental justice
L-19	Richard Young, Orange County Public Works	9/24/20	272	Right-of-way and property acquisition, environmental process, permitting, transportation, and hydrology and water quality
L-20	Jillian Wong, South Coast Air Quality Management District	9/24/20	277	Purpose and need, project definition, public engagement, environmental process, transportation, air quality and global climate change, health risks, environmental justice, and cumulative impacts

#	Agency and Staff Name	Date Received	Appendix H. Pg. No.	Comment Topics
L-21	Sameh Basta, San Bernardino County Public Works – Flood Control District	9/29/20	305	Public engagement, right-of-way and property acquisition, environmental process, permitting, transportation, land use, hydrology and water quality, biological resources and wetlands, cultural resources, and Section 4(f)
L-22	Jillian Wong, South Coast Air Quality Management District	9/10/20	312	Project definition, air quality and global climate change, health risks, and environmental justice
L-23	Todd McIntyre, Southern California Regional Rail Authority	9/9/20	317	Purpose and need and project definition
L-24	Lijin Sun, South Coast Air Quality Management District	9/9/20	323	Project definition, environmental process, air quality and global climate change, health risks, environmental justice, and cumulative impacts
L-25	Lijin Sun, South Coast Air Quality Management District	9/12/20	328	Project definition, environmental process, air quality and global climate change, health risks, and environmental justice
L-26	Shawnele Morelos, Elsinore Valley Municipal Water District	9/10/20	334	Public utilities and energy
L-27	Owen Chang, Colton Joint Unified School District	9/10/20	338	Air quality and global climate change
L-28	Owen Chang, Colton Joint Unified School District	9/10/20	343	Project definition
Elected Officials				
E-1	Edward Belden, Los Angeles City Mayor Eric Garcetti	9/11/20	349	Project definition
E-2	Connie Leyva, California State Senator	9/22/20	352	Public engagement, transportation, air quality and global climate change, and environmental justice
E-3	Chad Schnitger, San Bernardino County Supervisor Curt Hagman	9/10/20	361	Transportation and environmental justice
E-4	Frank Navarro, Mayor of Colton	9/30/20	366	Public engagement, right-of-way and property acquisition, transportation, air quality and global climate change, health risks, environmental justice, noise and vibration, land use, socioeconomics and communities, public utilities and energy, hydrology and water quality, and aesthetics and visual quality
E-5	Dr. Luis Gonzalez, City of Colton Councilmember	9/10/20	378	Project definition and public engagement
E-6	Ernest Cisneros, City of Colton Councilmember	9/10/20	384	Noise and vibration

#	Agency and Staff Name	Date Received	Appendix H. Pg. No.	Comment Topics
E-7	Dr. Luis Gonzalez, City of Colton Councilmember	9/12/20	386	Environmental process
E-8	Darcy McNaboe, Mayor, City of Grand Terrace	10/28/20 ²	391	Project definition, public engagement, transportation, air quality and global climate change, health risks, environmental justice, noise and vibration, land use, socioeconomics and communities, public utilities and energy, hydrology and water quality, aesthetics and visual quality, and right-of-way and property acquisition

EIR/EIS = Environmental Impact Report/Environmental Impact Statement; NOI = Notice of Intent; NOP = Notice of Preparation

Note: Names of commenters may appear more than once. These commenters submitted multiple comments. This table contains a row for each comment received.

6.2 General Project Concerns

This section provides an overview of comments categorized under the parent topic of general project concerns. As shown on Figure 6-1, these comments are organized into subcategories, including Purpose and Need (Section 6.2.1), Alternatives (Section 6.2.2), Project Definition (Section 6.2.3), and Public Engagement (Section 6.2.4).

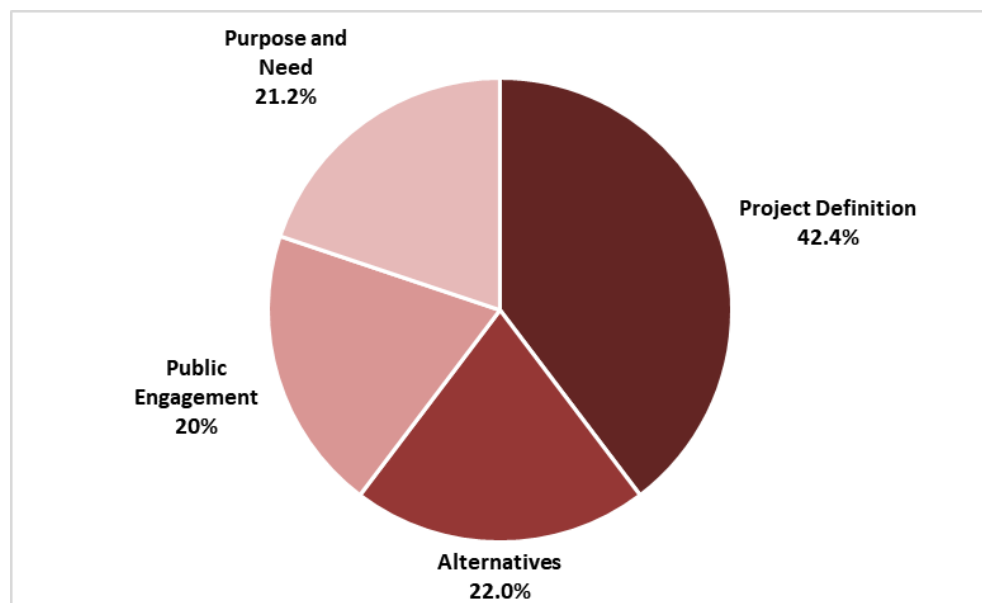


Figure 6-1 Summary of Scoping Comments: General Project Concerns (118 Comments)

² The Authority agreed to accept the City of Grand Terrace's comment after the end of the scoping comment period (September 24, 2020).

6.2.1 Purpose and Need

Commenters requested clarity on the nexus between the implementation of HSR in the HSR Passenger Rail Corridor and the need for the BNSF Lenwood and Colton Components, as well as how the BNSF Lenwood and Colton Components fulfill the purpose and need of HSR service. Commenters requested additional information on the passenger rail operator volumes that drive the need for the BNSF Lenwood and Colton Components, for example Metrolink compared to HSR. Comments also expressed interest in the nature of projected goods movement growth and how the need for the BNSF Lenwood and Colton Components is connected to the implementation of HSR service, compared to the projected growth of freight demand with and without implementation of HSR.

6.2.2 Alternatives

Multiple commenters requested analysis of project alternatives that do not include the BNSF Lenwood or Colton Components, justification of the selection of the BNSF Lenwood or Colton Component sites, or illustration of the components at different sites. Some commenters also asked for evaluation of facility sites that would use zero-emission instead of diesel-fueled equipment for railyard operations (e.g., electric locomotives).

6.2.3 Project Definition

Commenters requested that a clear project description be included in the Draft EIR/EIS, particularly for the BNSF Lenwood and Colton Components. In addition, commenters were interested to hear more about existing versus projected train volumes, mitigation measures, construction timelines, assumed existing conditions and assumed future conditions under the No Project Alternative, the relationship to existing passenger rail capacity, and the relationship to port freight traffic of operations at the proposed BNSF Lenwood and Colton Component facilities. Commenters also requested freight train and freight truck volumes, the use of electric locomotives and other equipment, and clarification of the relationship of the BNSF Colton Component operations to the operations of the existing Hobart Yard and other freight yards in the LOSSAN Corridor. Commenters also expressed interest in the location of proposed grade separations and bridges, improvements to local streets as a result of project construction, transit connections to regional destinations, and station locations.

6.2.4 Public Engagement

Commenters were concerned about whether the level and timing of outreach in the Inland Empire was sufficient in the context of anticipated project development milestones. Commenters were concerned about public engagement for the non-English-speaking community and requested additional outreach mechanisms and longer periods of engagement tailored to COVID-19 pandemic conditions. Other commenters, particularly local and regional government agencies, requested additional engagement in project development.

6.3 Community Concerns

This section provides an overview of comments categorized under the parent topic of community concerns. As shown on Figure 6-2, these comments are organized into subcategories, including Environmental Justice (Section 6.3.1), Regional Growth (Section 6.3.2), and Socioeconomics and Communities (Section 6.3.3).

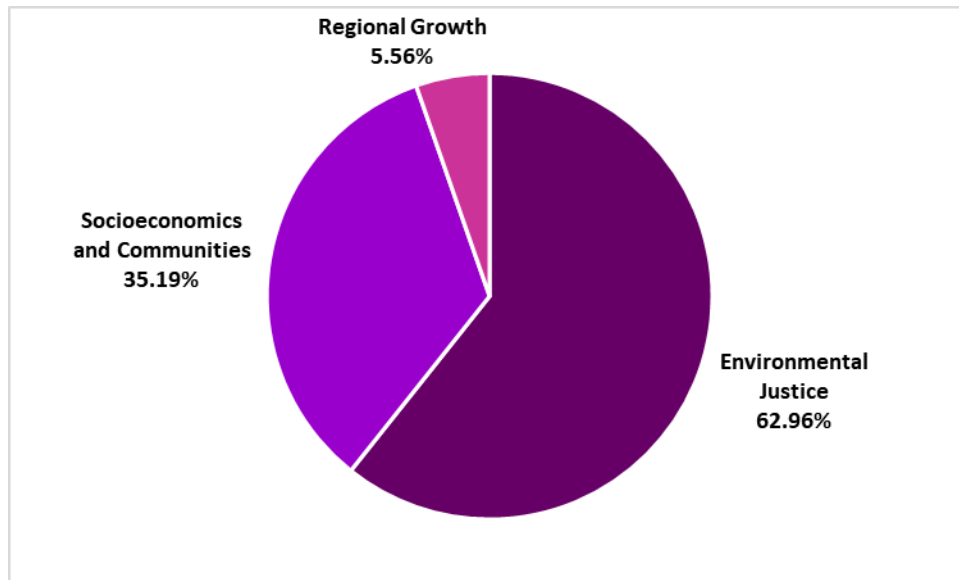


Figure 6-2 Summary of Scoping Comments: Community Concerns (54 Comments)

6.3.1 Environmental Justice

Many commenters noted that the existing communities near the BNSF Colton Component are disadvantaged, characterized by high levels of low-income and minority populations, and are already burdened by high levels of air pollution. Commenters were concerned that the BNSF Colton Component would add to this burden without providing sufficient benefits.

6.3.2 Regional Growth

Commenters requested information on whether and how a new high-volume freight facility in Colton would induce new regional and economic growth. Commenters were also concerned that the BNSF Colton Component would not bring economic benefits to the community. Information on impacts on existing and future development in the HSR Passenger Rail Corridor was also requested.

6.3.3 Socioeconomics and Communities

Several commenters expressed concern over the impact of the BNSF Lenwood and Colton Components on nearby schools and requested that the Draft EIR/EIS analyze the demographics of the communities around the BNSF Lenwood and Colton Components. Commenters also requested information on property acquisitions, residential and business displacements, and relocations.

6.4 Other Environmental Concerns

This section provides an overview of comments categorized under the parent topic of other environmental concerns. As shown on Figure 6-3, these comments are organized into subcategories, including Transportation (Section 6.4.1), Air Quality and Global Climate Change (Section 6.4.2), Health Risks (Section 6.4.3), Noise and Vibration (Section 6.4.4), Safety and Security (Section 6.4.5), Land Use (Section 6.4.6), Public Utilities and Energy (Section 6.4.7), Hydrology and Water Quality (Section 6.4.8), Aesthetics and Visual Quality (Section 6.4.9), Cumulative Impacts (Section 6.4.10), Biological Resources and Wetlands (Section 6.4.11), Cultural Resources (Section 6.4.12), Parks, Recreation, and Open Space (Section 6.4.13), Hazardous Materials and Wastes (Section 6.4.14), and Geology, Soils, Seismicity, and Paleontological Resources (Section 6.4.15).

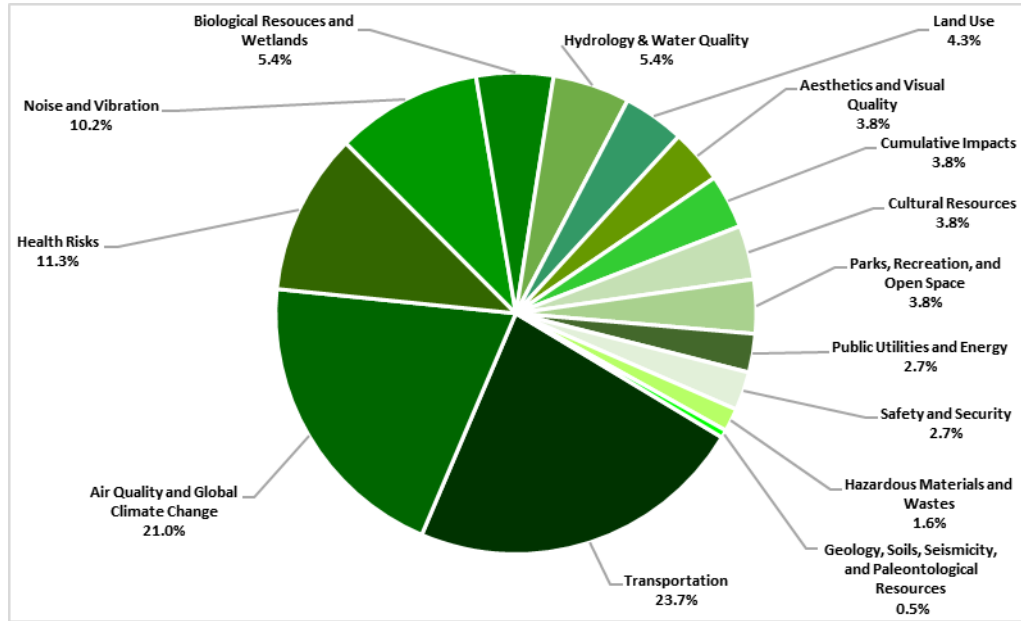


Figure 6-3 Summary of Scoping Comments: Other Environmental Concerns (186 Comments)

6.4.1 Transportation

Many commenters expressed concern over freight-related truck trips as a result of the BNSF Colton Component’s construction and requested freight train and truck traffic volumes and trip patterns be analyzed in the Draft EIR/EIS, along with their impacts on the community and existing roadway network. Commenters also requested information on roadway modifications and grade separations. Requests were also made for the designs of the BNSF Colton Component to consider nearby existing and planned bicycle infrastructure. Commenters in the HSR Passenger Rail Corridor requested descriptions of impacts on other agencies’ projects and the transportation and traffic effects of the project, including the potential impacts on passenger and freight traffic if train queueing would be required as a result of proposed rail operations.

6.4.2 Air Quality and Global Climate Change

Many commenters, including agencies with jurisdiction and special expertise, requested analysis of and had concerns about air quality impacts, particularly at the BNSF Colton Component. Commenters noted the existing high levels of air pollution and requested that construction-related air quality impacts be analyzed, as well as operations-related air quality impacts from locomotives, facility equipment, and truck trips. Commenters identified the presence of sensitive receptors around the BNSF Colton Component; expressed concern over impacts on those sensitive receptors, such as schools; and requested information on mitigation measures and ongoing monitoring of air quality after project construction. Similar requests were made for the BNSF Lenwood Component, but a greater volume of comments were received about air quality impacts, air pollution, and emissions generated by the BNSF Colton Component.

6.4.3 Health Risks

Multiple commenters, including agencies with jurisdiction and special expertise, requested the Draft EIR/EIS include a health risk assessment to identify dangers from project elements, particularly near the BNSF Lenwood and Colton Components. Commenters requested a health risk assessment to identify public health impacts from air pollutants, emissions, and hazardous materials, such as cancer and respiratory illnesses, from both project construction and operational activities.

6.4.4 Noise and Vibration

Commenters expressed concerns over the noise and vibration impacts of freight operations at the BNSF Lenwood and Colton Components. These concerns include noise and vibration from freight locomotives, facility equipment activity, related truck traffic, and the operating hours of the facility. The impacts of noise on nearby schools in Colton was also requested to be analyzed in the Draft EIR/EIS. Commenters in the HSR Passenger Rail Corridor also requested information on noise impacts from project construction and on noise and vibration impacts on biological resources such as animal species.

6.4.5 Safety and Security

Commenters requested an analysis of increased freight rail activity at at-grade crossings related to freight trains traveling to and from the BNSF Colton Component and of the potential risks to the BNSF Colton Component of nearby gas storage containers. Commenters requested clarity about the security equipment and anti-crime measures to be taken in the HSR Passenger Rail Corridor and at HSR stations, as well as an analysis of the impacts on policing services in the area.

6.4.6 Land Use

Commenters, including agencies or cities and counties with special expertise, requested an analysis of the effects on and relationship to existing land uses in the BNSF Lenwood and Colton Component areas. Commenters also requested information on the consistency of the BNSF Colton Component with local land use goals, policies, and regulations. Comments also pertained to the potential for the project to physically divide communities during construction and operation.

6.4.7 Public Utilities and Energy

Commenters such as utility providers requested clarity on impacts on existing utilities and potential coordination regarding such impacts. Commenters also requested information on the impacts on emergency services and requested information on the energy requirements to operate an electric HSR system. Comments also pertained to the project's plan for energy sustainability.

6.4.8 Hydrology and Water Quality

Several commenters, particularly agencies, were interested in the impacts of the project on existing waterlines, sewers, and flood control facilities. Comments requested clarification on the risk of floodplains, how runoff would be managed at the BNSF Colton Component site, and how drainage would differ from existing conditions in the BNSF Lenwood Component area. Agencies commented that certain permits would be required for discharge into existing waterways, and requested an analysis be done to ensure no flooding of the BNSF Colton Component would occur during heavy rainfall events.

6.4.9 Aesthetics and Visual Quality

In the HSR Passenger Rail Corridor, commenters expressed concern over the visual impact of adding rail barriers on historic bridges and how the project would affect community aesthetics, and requested that the project conform to local design standards. In the BNSF Lenwood and Colton Component areas, commenters requested clarification on the visual impacts of the facilities' lighting, especially at night. In the BNSF Colton Component area, commenters requested an analysis of the visual impact of the proposed grade separations and bridges, as well as the responsibility for removal of graffiti on facilities built in the BNSF Colton Component area.

6.4.10 Cumulative Impacts

Comments were received about the cumulative air quality impacts of other HSR project sections in Southern California, in addition to the Los Angeles to Anaheim Project Section, such as the Palmdale to Burbank and Burbank to Los Angeles Project Sections. In the HSR Passenger Rail Corridor, commenters requested information on the cumulative environmental impacts from other transportation and land use projects in conjunction with implementation of HSR. In the BNSF Colton

Component area, commenters expressed concerns over the cumulative air quality impacts of this project in addition to existing sources of pollution in the region.

6.4.11 Biological Resources and Wetlands

Commenters expressed concern over impacts on endangered species and other flora and fauna, particularly in the areas around the BNSF Lenwood and Colton Components. Commenters raised concerns over the impacts on biological resources at streambed or river crossings.

6.4.12 Cultural Resources

Several commenters requested that cultural and tribal resources be considered in the Draft EIR/EIS. In the HSR Passenger Rail Corridor, commenters inquired about the impacts on historic bridges in Los Angeles if rail barriers are added.

6.4.13 Parks, Recreation, and Open Space

Commenters, including agencies with jurisdiction and expertise, requested an analysis of impacts on existing or proposed recreational trails in the HSR Passenger Rail Corridor. In the BNSF Colton Component area, commenters requested that the Draft EIR/EIS analyze impacts on nearby parks or open spaces, and investigate community interest in developing park space on the CalPortland cement plant site.

6.4.14 Hazardous Materials and Wastes

Commenters raised concerns, especially in the BNSF Colton Component area, that the new freight rail yard would increase risk of exposure to hazardous materials, and that the area around the BNSF Colton Component already has a high level of industrial sites with similar risks. Commenters requested that the Draft EIR/EIS analyze the potential impacts from exposure as a result of construction or operations of the BNSF Colton Component intermodal rail yard.

6.4.15 Geology, Soils, Seismicity, and Paleontological Resources

Commenters raised concerns regarding geology, soils, and seismicity and requested analysis of risks from liquefaction, landslides, and faulting hazards, particularly in the areas around the BNSF Lenwood and Colton components.

6.5 Process, Engineering, and Permitting Concerns

This section provides an overview of comments categorized under the parent topic of process, engineering, and permitting concerns. As shown on Figure 6-4, these comments are organized into subcategories, including Environmental Process (Section 6.5.1), Right-of-Way and Property Acquisition (Section 6.5.2), and Permitting (Section 6.5.3).

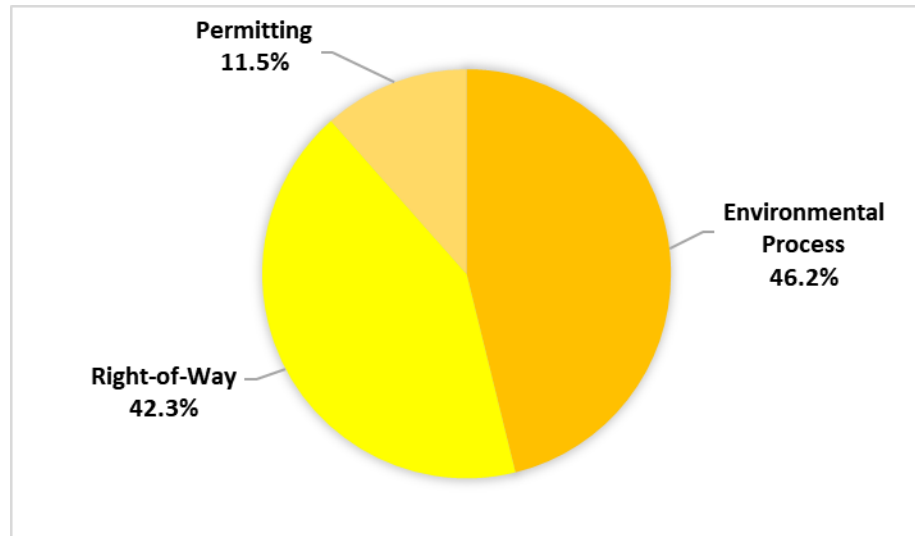


Figure 6-4 Summary of Scoping Comments: Process, Engineering, Permitting Concerns (26 Comments)

6.5.1 Environmental Process

Commenters expressed interest and concern over the environmental CEQA/NEPA process, including questions about who is the lead agency, and how public input would be incorporated into design and analysis based on the overall project timeline.

6.5.2 Right-of-Way and Property Acquisition

Several commenters, particularly local agencies, requested clarification on potential right-of-way encroachments or impacts, including impacts on existing agency facilities, roadways, highways, or passenger rail service in the existing LOSSAN Corridor. Commenters also requested that streets be built out to their ultimate width and to local standards related to street elements such as sidewalks, gutters, and bike lanes as part of project construction.

6.5.3 Permitting

Several commenters, particularly agencies, requested clarification on permitting or discussed the permitting process. These comments included questions about the roles of local agencies, the permits needed to build the project, and permits required for improvements on agency land or right-of-way.

7 NEXT STEPS

Scoping is an important process in the development of the Draft EIR/EIS in compliance with NEPA and CEQA requirements. The Authority will analyze comments submitted during the scoping process pertaining to the HSR Passenger Rail Corridor and the BNSF Lenwood and Colton Components and consider comments in the preparation of the Draft EIR/EIS.

The Authority will prepare the Draft EIR/EIS to analyze and disclose the potential environmental impacts of the proposed HSR Project Alternative. The Draft EIR/EIS will also identify means to avoid, minimize, and mitigate potential adverse impacts.

While the formal scoping period closed September 24, 2020, the Authority's public outreach will continue to engage communities, regulatory agencies, local jurisdictions, and interested stakeholders to provide progress updates and gather input prior to the release of the Draft EIR/EIS, which is anticipated in late 2021 to early 2022. In support of the release of the Draft EIR/EIS and comment period, the Authority will publicize the release of the document and public hearings will be conducted.

After the release of the Draft EIR/EIS, the Authority will review, analyze, and address comments received during the public comment process in the Final EIR/EIS.

APPENDIX B: LOS ANGELES TO ANAHEIM PROJECT SECTION BNSF INTERMODAL FACILITY AND STAGING TRACKS SITE SELECTION REPORT

California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

BNSF Intermodal Facility and Staging Tracks Site Selection Report

November 2023



TABLE OF CONTENTS

1	SUMMARY	1
2	BACKGROUND.....	3
2.1	The California High-Speed Rail System	3
2.2	The Los Angeles to Anaheim Project Section	3
2.3	Development of the 2018 High-Speed Rail Project Alternative	3
2.4	Nexus between the High-Speed Rail Corridor and New BNSF Railway Freight Facilities	5
2.5	Rail Traffic Controller Model Base Case	7
2.6	Rail Traffic Controller Model Test Case.....	7
2.7	Rail Traffic Controller Modeled Comparisons and Resulting Infrastructure Needs	7
2.8	Development of the Shared Passenger Track Alternative.....	9
3	DEVELOPMENT OF SITE SELECTION CRITERIA USED TO IDENTIFY SITES FOR A NEW BNSF INTERMODAL FACILITY AND STAGING TRACKS.....	11
3.1	Site Selection Process for the New BNSF Railway Intermodal Facility	11
3.2	Warehousing and Freight Shipment Market Assessment	13
3.3	Site Selection Process for New Staging Tracks	14
4	EVALUATION OF ALTERNATIVE SITES FOR A NEW BNSF RAILWAY INTERMODAL FACILITY AND STAGING TRACKS.....	17
4.1	Identification of Potential Intermodal Facility Sites	17
4.2	Potential Sites Identified	18
4.2.1	Potential Intermodal Facility Site #1.....	18
4.2.2	Potential Intermodal Facility Site #2.....	19
4.2.3	Potential Intermodal Facility Site #3.....	20
4.2.4	Potential Intermodal Facility Site #4.....	20
4.2.5	Potential Intermodal Facility Site #5.....	21
4.2.6	Potential Intermodal Facility Site #6.....	21
4.2.7	BNSF Railway-Identified Colton Intermodal Facility Site	22
4.3	Demographic Analysis.....	22
4.3.1	Demographics Methodology	23
4.3.2	Demographics Summary	23
4.4	Identification of Potential Staging Tracks Sites	24
4.5	Potential Sites Identified	25
4.5.1	Potential Staging Tracks Site #1.....	26
4.5.2	Potential Staging Tracks Site #2.....	27
4.5.3	Potential Staging Tracks Site #3.....	28
4.5.4	Potential Staging Tracks Site #4.....	28
4.5.5	Potential Staging Tracks Site #5.....	29
4.5.6	BNSF Railway-Identified Lenwood Staging Tracks Site	29
4.5.7	Sites Carried Forward to Environmental Analysis.....	30
5	SUMMARY FINDINGS.....	31

Figures

Figure 1 Planning and Screening Alternatives Timeline	4
Figure 2 Los Angeles to Anaheim Project Section Preferred Alternative: 2018 High-Speed Rail Project Alternative (support yard and siding/storage tracks further inland not pictured)	5
Figure 3 BNSF Railway Components	6
Figure 4 Hobart Yard	9
Figure 5 BNSF Railway-identified Colton Site	12
Figure 6 Shipping Patterns	13
Figure 7 Lenwood Site	15
Figure 8 Potential Intermodal Facility Sites Evaluated	18
Figure 9 Potential Staging Tracks Sites Evaluated	26

Tables

Table 1 Adjusted Low-Income Population	23
Table 2 Adjusted Minority Population	24
Table 3 Potential Intermodal Facility Site Suitability Screening.....	31
Table 4 Potential Staging Tracks Site Suitability Screening	33

Attachments

Attachment 1: BNSF Railway Capacity Mitigation Memo	
Attachment 2: BNSF Railway Memo to the California High-Speed Rail Authority	
Attachment 3: Potential Intermodal Facility Sites and BNSF Railway-identified Colton Site	
Attachment 4: Potential Staging Tracks and BNSF Railway-identified Lenwood Staging Tracks Site	

ACRONYMS AND ABBREVIATIONS

Amtrak	National Railroad Passenger Corporation
ArcGIS	Arc Geographic Information System
Authority	California High-Speed Rail Authority
BNSF	BNSF Railway
BNSF Components	Colton Intermodal Facility and Lenwood Staging Track Components
Colton Component	BNSF Colton Intermodal Facility Component
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FRA	Federal Railroad Administration
HSR	High-Speed Rail
I-	Interstate
IMF	intermodal facility
Lenwood Component	BNSF Lenwood Staging Track Component
LOSSAN Corridor	Los Angeles – San Diego – San Luis Obispo Rail Corridor
Metrolink	Southern California Regional Railroad Authority
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NOP	Notice of Preparation
project section	Los Angeles to Anaheim Project Section
RTC	Rail Traffic Controller
SR	State Route
State Rail Plan	<i>2018 California State Rail Plan</i>
Statewide Program EIR/EIS	<i>Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System</i>
UCR	University of California, Riverside

1 SUMMARY

This document provides information on the genesis of BNSF Railway's (BNSF) intermodal facility (IMF) and staging track requirements as of 2019–2020 for the Los Angeles to Anaheim Project Section (project section) of the California High-Speed Rail (HSR) System. This document also describes the California High-Speed Rail Authority's (Authority) independent review and screening of the potential siting alternatives for the IMF and staging tracks. The project section would extend approximately 30 miles, between just south of Los Angeles Union Station in Los Angeles and Anaheim Regional Transportation Intermodal Center in Anaheim ("the corridor"). The environmental review for the project section began in 2007 with the issuance of a Notice of Preparation (NOP) and Notice of Intent. Following the 2007 scoping period, the Authority and the Federal Railroad Administration (FRA) conducted further planning to develop and screen potential alignment alternatives between Los Angeles and Anaheim. In 2016, the Authority eliminated from further consideration a six-track corridor because of higher capital costs, potential impacts on sensitive resources, and meaningful widening of the existing right-of-way, which would have resulted in the loss of existing roads, buildings, and homes in this heavily urbanized corridor.

In 2018, the Authority identified a four-track configuration as the Preferred Alternative (2018 HSR Project Alternative), noting that this approach would necessitate offsetting lost freight capacity, as the alignment would repurpose existing tracks used for BNSF freight trains. In the November 2018 detailed staff report to the Authority Board, staff noted that an IMF and additional staging tracks farther inland would be needed to offset impacts and enhance overall operational efficiency within the corridor for both freight and passenger rail service. Impacts on the portion of the corridor between Redondo Junction and Fullerton Junction, owned by BNSF and currently a three-track non-electrified railway that supports both BNSF freight and diesel passenger (National Railroad Passenger Corporation [Amtrak], Los Angeles – San Diego – San Luis Obispo Rail Corridor [LOSSAN Corridor] and Southern California Regional Railroad Authority [Metrolink]) trains, would be of particular importance. BNSF freight and diesel passenger trains use and share all three tracks, with about 44 freight and 54 passenger trains per day as of 2016. The Authority proposed to add electrified HSR trains to the entire corridor from Los Angeles to Anaheim and is proposing to convert the railway from Redondo Junction to Fullerton Junction to four tracks, two electrified and two not electrified (2+2 track configuration). The permanent footprint of the four-track railway would displace certain existing BNSF storage and support track capacity within the Redondo Junction to Fullerton Junction portion of the corridor.

An analysis of corridor capacity needed to maintain on-time freight performance, allow routine maintenance, and not restrict future freight growth (assessed at the FRA standard rate of 2 percent per year), with HSR implementation at service levels called for in the Authority's 2018 Business Plan, was conducted by BNSF and independently reviewed and assessed by the Authority. The analysis consisted of modeling of future conditions under which the corridor would operate as a 2+2 track configuration with 2040 daily freight and passenger train volumes as called for in the *2018 California State Rail Plan* (State Rail Plan). The modeling identified specific operational infrastructure needed to offset loss of existing capacity. Specifically, the modeling indicated that the project section would need to include two new facilities to be built outside the main corridor to prevent unacceptable congestion and delays to freight traffic that would occur once HSR service is introduced to the corridor. The required facilities are an IMF capable of processing 900,000 units of containerized freight per year transported by an average of 10 intermodal freight trains per day by 2040, and a staging track facility capable of holding four 16,000-foot-long trains or eight 8,000-foot-long trains.

Interested party feedback on the proposed IMF received following the Authority's revised NOP (to include the IMF and staging track facilities) in 2020 raised substantial opposition to and concern for introducing a new IMF far outside the project corridor. In particular, interested parties in the Inland Empire expressed concerns about the IMF's impacts when the benefits of HSR and the associated improvements would not reach them. In addition, BNSF's support of the 2018 HSR Project Alternative has since waned and it may no longer agree to operate the IMF. For these reasons, the Authority developed an additional alternative, the Shared Passenger Track Alternative, which would eliminate the need to redirect trains and trucks to an IMF in San Bernardino County.

The Shared Passenger Track Alternative would follow the same alignment as the 2018 HSR Project Alternative but would allow BNSF freight trains to use both of the two passenger-dedicated tracks within the corridor, eliminating the need for a new IMF. However, a staging track facility would still be provided as mitigation for freight rail performance impacts resulting from HSR construction and operations. This staging track facility would have a revised capacity of two 16,000-foot-long trains or four 8,000-foot-long trains.

While this document presents siting criteria for both the IMF and staging tracks, the Authority will not be building an IMF as part of the Shared Passenger Track Alternative.

2 BACKGROUND

2.1 The California High-Speed Rail System

The Authority and FRA completed the *Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System (Statewide Program Environmental Impact Report [EIR]/Environmental Impact Statement [EIS])* in 2005 as the first phase of a tiered environmental review process for the proposed HSR system. The Statewide Program EIR/EIS established the purpose and need of the statewide HSR system and identified and evaluated alternative HSR corridor alignments and station locations as part of a statewide HSR system. The approved 2005 first-tier California HSR Program environmental document described the program alignment, which included a corridor between Los Angeles and Irvine. The Authority and FRA also selected station locations at Los Angeles Union Station, Norwalk/Santa Fe Springs, Anaheim, and Irvine as part of that environmental review.

Following the issuance of the Notice of Determination and Record of Decision for the Statewide Program EIR/EIS, the Authority and FRA published an NOP and Notice of Intent in 2007 for a project-level environmental review of the Los Angeles to Anaheim Project Section.

2.2 The Los Angeles to Anaheim Project Section

The project section would provide the public electric-powered HSR service with predictable and consistent travel times between major urban centers. The service would also provide connectivity to airports, mass transit, and the highway network in the Los Angeles-Orange Counties metropolitan region, as well as connection to the rest of the statewide HSR system.

The project section is an essential component of the statewide HSR system. It would provide access to a new transportation mode and contribute to increased mobility throughout California. This project section would connect to both the Burbank to Los Angeles and the Los Angeles to San Diego Project Sections, the latter being part of Phase 2 program development.

2.3 Development of the 2018 High-Speed Rail Project Alternative

The Authority conducted public scoping for this project section EIR/EIS in 2007. During the scoping process, several comments submitted by the public included suggestions for alternative alignments, including tunnels to avoid existing at-grade street crossings, consideration of station locations that are currently zoned for high-density development, an alternative HSR station at the Fullerton Transportation Center including skip-stop scheduling, placement of HSR tracks in surface-level box structures to reduce noise and visual impacts, and grade separation of the entire system. The Authority and FRA then conducted further planning to develop and screen potential alignment alternatives between Los Angeles and Anaheim as summarized on Figure 1.

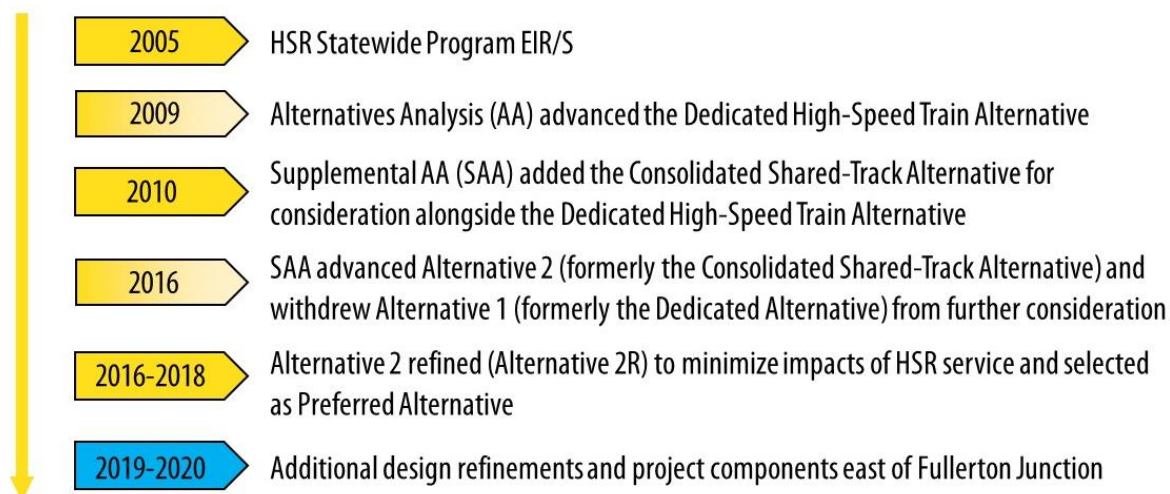


Figure 1 Planning and Screening Alternatives Timeline

Within the 2016 Supplemental Alternative Analysis, the Authority eliminated Alternative 1 (formerly called the Dedicated High-Speed Train Alternative) from further consideration and advanced Alternative 2 (formerly called the Consolidated Shared-Track Alternative) as the HSR Project Alternative. Alternative 1 was proposed as a 4+2 track corridor configuration and was found to have higher capital costs and potential impacts on sensitive resources, and would have required meaningful widening of the existing right-of-way into existing roads, buildings, and homes. Alternative 2, the HSR Project Alternative, was proposed as a 3+2 track configuration (three electrified passenger rail tracks and two freight tracks) and would add HSR service into the existing rail corridor with blended operations with existing Amtrak, Metrolink, and BNSF trains.

In the 2016 Refinement Report (November 2016), the Authority subsequently refined Alternative 2 between Redondo Junction and Fullerton Junction to a 2+2 track configuration (two electrified passenger rail tracks and two freight tracks). Generally, the design refinements made to the HSR Project Alternative following the issuance of the 2016 Supplemental Alternative Analysis further capitalized on the blended system concept and reduced right-of-way impacts by consolidating passenger service on HSR tracks, removing passenger service from freight tracks, and allowing shared use of tracks when necessary. This approach reduced environmental impacts in the main corridor.

Operational modeling, prepared by BNSF and reviewed by the Authority in 2018, showed that the proposed 2+2 track configuration necessitated offsetting freight capacity lost by reducing the existing three freight tracks to two tracks and accordingly required new facilities to be built outside the main corridor to maintain on-time freight performance and reliability. Specifically, these included an IMF and staging tracks. Section 2.4, Nexus between the High-Speed Rail Corridor and New BNSF Railway Freight Facilities, of this document summarizes the operational modeling and Sections 3, Development of Site Selection Criteria Used to Identify Sites for a New BNSF Intermodal Facility and Staging Tracks, 4, Evaluation of Alternative Sites for a New BNSF Railway Intermodal Facility and Staging Tracks, and 5, Summary Findings, discuss the storage/staging sites in more detail.

On November 15, 2018, the Authority Board of Directors identified the HSR Project Alternative as the State's Recommended Preferred Alternative for further evaluation in the project section EIR/EIS. The HSR Project Alternative is depicted on Figure 2. The staff report from November 2018 noted that a support yard and additional siding and storage tracks farther inland would be needed to offset impacts and enhance overall operational efficiency within the corridor for both freight and passenger rail service.



Figure 2 Los Angeles to Anaheim Project Section Preferred Alternative: 2018 High-Speed Rail Project Alternative (support yard and siding/storage tracks further inland not pictured)

In 2020, the Authority issued a revised NOP and Notice of Intent¹ to reopen the scoping period for the project section to obtain additional public and agency input on a proposed intermodal facility in Colton (the Colton Component) and staging tracks in Lenwood (the Lenwood Component) as necessary components of the project section’s Preferred Alternative needed to offset loss to existing freight track capacity. The Authority received 131 comment submittals, which contained 401 individual comments from agencies, organizations, and individuals. The majority of comments received pertained to concerns about the Colton Component’s impact on the surrounding community.

2.4 Nexus between the High-Speed Rail Corridor and New BNSF Railway Freight Facilities

The current three-track corridor between Redondo Junction and Fullerton Junction is owned and operated by BNSF with contracts for passenger train operators to provide service on these tracks. In response to the Authority’s proposal to introduce HSR service on tracks owned by BNSF (Figure 3) and to better understand the effect of the lost capacity that would result from reducing the existing three freight tracks to two freight tracks, BNSF conducted Rail Traffic Controller (RTC) modeling of train dispatch times and delay behavior with and without additional storage and processing facilities

¹ In July 2019, the FRA assigned its responsibilities for compliance with the National Environmental Policy Act (NEPA) and related laws to the Authority pursuant to U.S. Code Title 23 Section 327. Under the NEPA Assignment Memorandum of Understanding between the FRA and the State of California, effective July 23, 2019, the Authority is the federal lead agency for environmental reviews and approvals for all Authority Phase 1 and Phase 2 California HSR System projects. In this role, the Authority is the project sponsor and the lead federal agency for compliance with NEPA and other federal laws for the California HSR System, including the Los Angeles to Anaheim Project Section.

outside the corridor. The RTC modeling, including computer-based simulations, was prepared by BNSF and reviewed by the Authority in August 2018 during a multi-day in-person session with BNSF capacity planning and passenger operations staff (see Attachment 1, BNSF Railway Capacity Mitigation Memo). The modeling evaluated train operations under the proposed 2018 HSR Project Alternative (2+2) track alignment and identified that future on-time service level standards for freight trains within the corridor would be degraded appreciably below existing 2016 conditions (base-case conditions). This is described further in the memo from BNSF to the Authority dated March 5, 2020 (Attachment 2, BNSF Railway Memo to the California High-Speed Rail Authority).

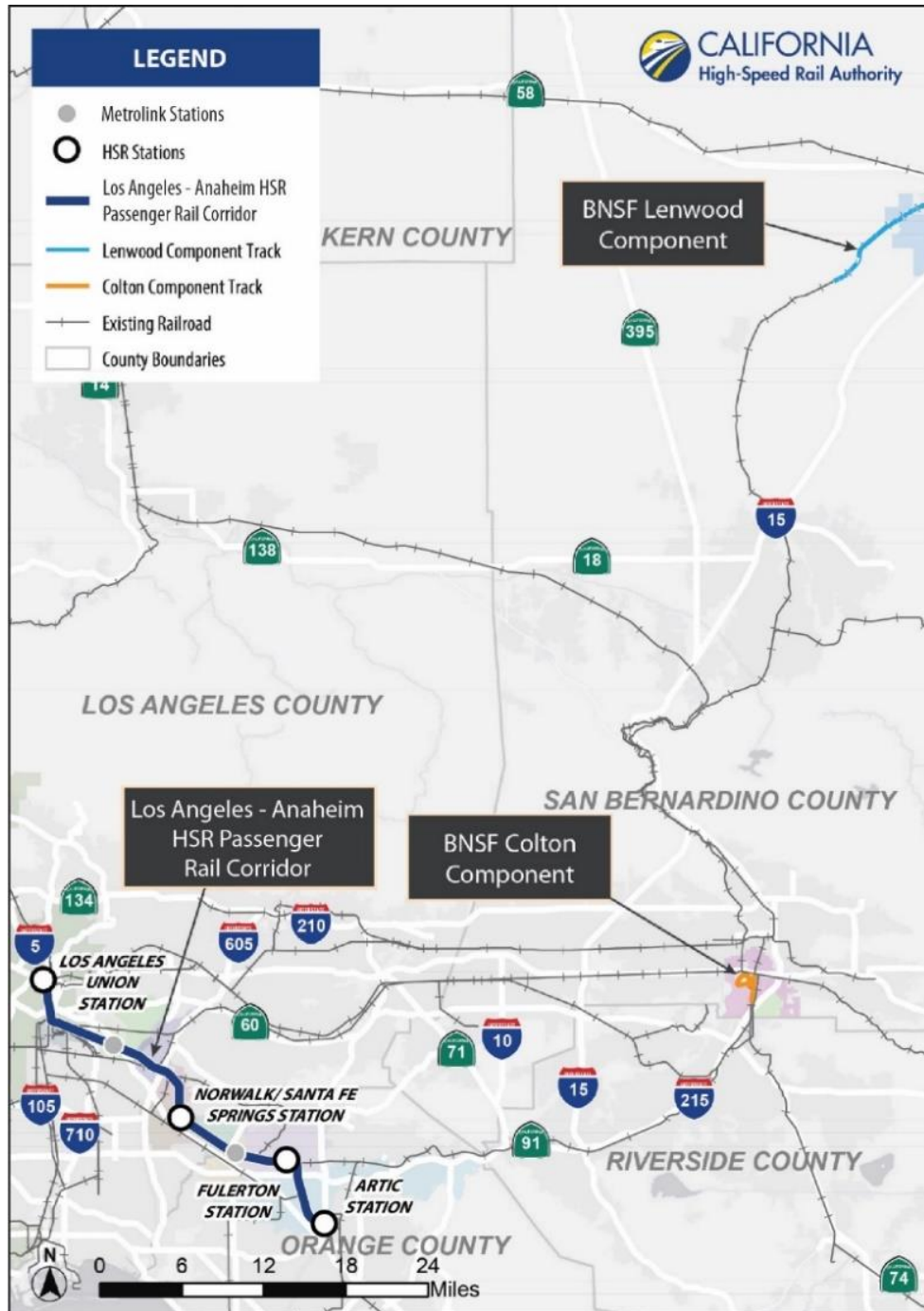


Figure 3 BNSF Railway Components

The RTC model evaluated the 2018 HSR Project Alternative track configuration in 2040 with passenger train volumes based on the State Rail Plan and with freight train volumes adjusted at a 2-percent annual growth rate (an FRA-approved standard). As mentioned above, the 2018 HSR Project Alternative configuration would have two dedicated electrified passenger rail tracks and two dedicated freight tracks. Passenger train use of the freight tracks, excluding HSR because the tracks would not be electrified, and freight train use of the passenger rail tracks would be limited to non-standard events such as emergencies, non-routine maintenance or repairs, and construction activities. The Authority’s independent review and assessment determined that the RTC model used was well built and that inputs made to the model were appropriate and consistent with the passenger train volumes from the State Rail Plan.

2.5 Rail Traffic Controller Model Base Case

The RTC model first develops a base case for BNSF’s freight operations to which future iterations can be compared. The model is populated with detailed information about network infrastructure such as milepost codes, elevations, curvature, speed, switches, turnouts, and track structures. One week’s worth of actual train statistics was then selected and analyzed to ensure no major service interruptions or other irregularities exist in those data. Those statistics were used to generate realistic day-to-day averages, which were then inputted to the model. The base case is then “dispatched” (i.e., simulated) by the RTC model. Once the model can successfully dispatch a solution to the base case, the train run times from the model are compared to the averages described above. When the model simulation results accurately reflect existing operations, the base case is considered ready for further model testing.

Once the model is ready for testing, it is run with randomized freight departure-time windows. Passenger train departure times remained constant based on passenger timetables. For each successful randomized model run, the outliers are investigated to determine the cause of delays. If the cause could not be directly attributed to actions or decisions that a dispatcher would make in a real-world scenario, the case was dismissed as not meeting BNSF operational standards. The process was repeated until a minimum of 15 successful randomized model runs met BNSF operational standards.

2.6 Rail Traffic Controller Model Test Case

Test cases introducing HSR service in a 2+2 configuration against which to measure the base-case averages described above were developed. The test cases included additional infrastructure elements to accommodate future growth. The list of potential additions to the network were identified through discussions with parties involved in the project, an understanding of the network, the existing operations, the existing constraints, and the opportunities and constraints for network expansion. Applying the same criteria as with the base case, each test case was dispatched until there were a minimum of 15 randomized iterations. Output data were compared for each of the test cases against the base case. To meet BNSF’s operational standards, passenger operations cannot degrade BNSF’s freight service or negatively affect BNSF’s freight customers or its ability to provide freight customers with service now and into the future. Therefore, the BNSF standard is that the average run-time hours in any test case must equal, or improve upon, the average run-time hours in the base case. The following scenarios indicate the test case does not meet the standard:

- RTC model consistently fails to dispatch successfully.
- RTC model dispatches successfully, but RTC output files show excessive train delay to any train group or train type.

The goal is to accumulate output data from 15 successfully dispatched RTC test cases that can be measured against the base-case output file.

2.7 Rail Traffic Controller Modeled Comparisons and Resulting Infrastructure Needs

The final step in the RTC modeling was to compare the base cases to the test cases to identify infrastructure improvements necessary to accommodate increased passenger service. The first

modeled comparison contrasts the base cases against No Project test cases for 2030 and 2040. These test case comparisons represent the difference between existing (2016) passenger train volumes and maximum passenger train volumes under existing conditions. Under the No Project test case scenarios, no infrastructure improvements were included in the model runs and HSR service was not introduced. Under these scenarios, the run times showed little to no degradation compared to the 2016 base-case scenario. Generally, a run-time degradation of less than 5 or 6 minutes (approximately 0.1 run-time hour) is surmountable and, therefore, does not require long-term or systemic adjustments to network infrastructure.

The second modeled comparison contrasts the base-case scenarios against the HSR test case scenarios for 2030 and 2040. This model included introduction of HSR service and no infrastructure improvements. Under these test case scenarios, the RTC modeling was unable to produce any successfully dispatched randomized iterations for the test case scenarios, indicating that it would not be feasible to introduce HSR service without infrastructure improvements. To maintain base-case conditions while accommodating projected growth in freight rail volume, the modeling indicated that an average of 6 freight trains per day would need to be removed from the corridor by 2030 and that number would grow to 10 freight trains per day by 2040. The minimum number of freight trains to be removed was arrived at incrementally in multiples of two. Based on test cases that included various infrastructure improvements, the model showed that in order to remove freight trains from the corridor, new storage/staging facilities outside the corridor would need to be built and operated.

Specifically, the modeling results established the need for a new IMF capable of processing an average of 10 freight trains per day. The IMF would need to be built outside and east of the corridor to serve as the terminus or point of origin for the average of 10 trains per day that otherwise would have traversed the corridor to transfer freight at the Hobart Yard IMF within the HSR corridor (Figure 4). This new facility would allow BNSF to maintain base-case conditions while accommodating projected growth in freight rail volume through the horizon year of 2040. Additionally, the modeling demonstrated that freight trains would need to be staged or held outside and east of the corridor to provide windows of time in corridor rail activity.

These time windows were needed to accommodate HSR project construction and to allow adequate service time for routine maintenance in the corridor during operations. To meet this need, additional staging tracks outside and east of the corridor capable of accommodating four 16,000-foot-long trains or eight 8,000-foot-long trains would be required. Accordingly, the modeling test cases included these additional infrastructure elements: the IMF outside and east of the corridor to accommodate future growth, and the staging tracks outside and east of the corridor to accommodate construction of the HSR alignment and routine maintenance during operations.

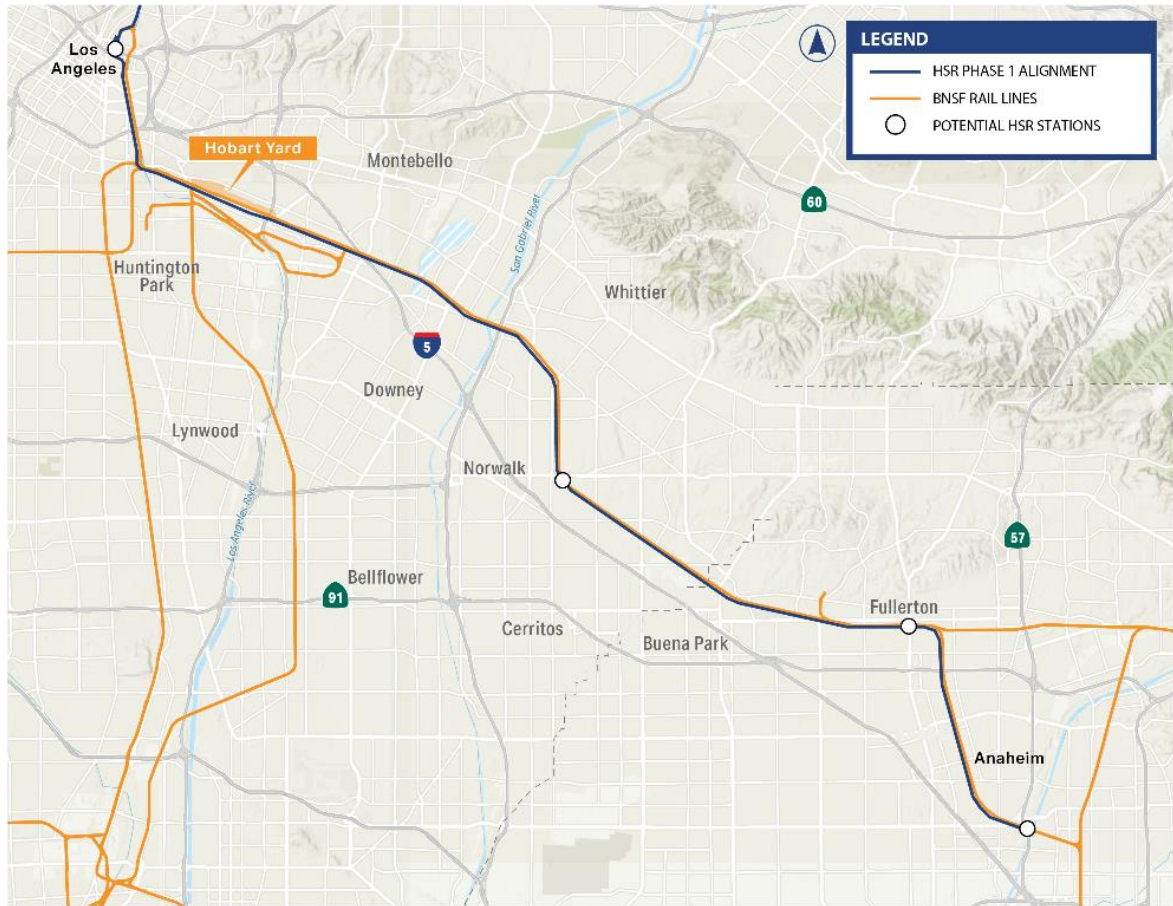


Figure 4 Hobart Yard

2.8 Development of the Shared Passenger Track Alternative

After hearing substantial opposition to the proposed IMF (Colton Component) following the 2020 revised NOP, the Authority explored alternatives that address the corridor’s operational needs but do not include the Colton Component. The previous operations analysis in 2018 had determined that the two dedicated tracks allocated solely to freight services in the HSR Project Alternative would still require removal of an average of 10 freight trains per day from the corridor. Therefore, an alternative without an additional freight rail IMF would require these freight trains to be accommodated on the two tracks previously dedicated to the passenger trains in the HSR Project Alternative. However, allowing freight trains to use all four tracks would reduce the number of passenger trains able to use the tracks. The analysis concluded that using the same alignment previously selected by the Authority, a reduction in the total number of passenger trains (HSR and others) to seven trains per hour in each direction, along with minor alterations to the proposed crossover layouts in Montebello and Fullerton to minimize freight and passenger train conflicts, could provide enough freight train slots per day—equivalent to one train per hour per direction—to compensate for the removal of the Colton Component. To retain the previously modeled service levels for Metrolink and the LOSSAN Corridor, it would be necessary to reduce the peak service level for HSR trains to two trains per hour per direction. This is the Shared Passenger Track Alternative.

The Shared Passenger Track Alternative would maintain the current and projected freight train volume within the corridor, including the 10 additional trains per day that would have been removed from the corridor if the Colton Component were implemented. Under the Shared Passenger Track Alternative, Metrolink and the LOSSAN Corridor Agency would not be precluded from achieving State Rail Plan levels.

The Shared Passenger Track Alternative would follow the same alignment as the HSR Project Alternative but would not require a new IMF. In the 2020 National Environmental Policy Act (NEPA) Notice of Intent and the California Environmental Quality Act NOP, the Authority described the BNSF Components as follows: “the Authority has identified the Colton and Lenwood Components, which are located outside the HSR corridor, as necessary components of the Los Angeles to Anaheim Project Section that are required to maintain freight and passenger train performance at existing levels during project construction and accommodate currently projected freight and passenger growth during project operation within the corridor.”

As the Shared Passenger Track Alternative would present similar, construction-related impacts on freight rail service, this alternative would still include freight train staging tracks necessary to alleviate mainline congestion within the project corridor during HSR project construction and operations. However, the Authority will analyze these staging tracks as mitigation for freight impacts, rather than as a project component, to better reflect the purpose and need of the facility: to mitigate impacts of HSR project construction and maintain rail operational reliability and resiliency within the project corridor.

The Authority will consider the same locations for staging tracks as those proposed for the 2018 HSR Project Alternative but would only need a facility capable of accommodating two 16,000-foot-long trains or four 8,000-foot-long trains. While this document presents the need and selection criteria for the BNSF IMF as a component of the 2018 HSR Project Alternative, no IMF is proposed under the Shared Passenger Track Alternative.

3 DEVELOPMENT OF SITE SELECTION CRITERIA USED TO IDENTIFY SITES FOR A NEW BNSF INTERMODAL FACILITY AND STAGING TRACKS

As identified in the RTC modeling, construction of a new IMF and staging tracks would be necessary to maintain base-case conditions, in light of the introduction of the 2018 HSR Project Alternative and projected growth in freight rail volume. To accommodate these new facilities, BNSF identified site selection criteria based on the capacities required for the new IMF and staging tracks. The site selection criteria address logistical, geographic, environmental, and capacity constraints to inform the identification and selection of potential sites for the new facilities. BNSF met with the Authority on July 18, 2022, to discuss the site selection criteria used to identify the location for the IMF and staging tracks components. Following the Authority’s development of the Shared Passenger Track Alternative and pivot away from an IMF, the Authority held an additional meeting with BNSF on June 16, 2023, to review staging track selection criteria and gain input on potential sites.

3.1 Site Selection Process for the New BNSF Railway Intermodal Facility

As identified in the RTC modeling conducted by BNSF, in order to prevent on-time service level standards for freight trains from degrading below existing 2016 conditions, a processing facility capable of conducting 900,000 container movements, or “lifts,” per year would be needed to remove an average of 10 trains per day from the corridor by 2040. BNSF developed site selection criteria for identifying a new IMF site as stated in the March 5, 2020, memorandum (Attachment 2). These include:

- A contiguous area of adequate size (acreage): Other BNSF IMFs that process a comparable volume of lifts are on sites ranging in size from 240 acres (e.g., San Bernardino, which handles approximately 700,000 lifts per year) to 610 acres (e.g., Logistics Park Chicago, which handles approximately 900,000 lifts per year).
- An area east of the corridor: Locations west of the corridor (i.e., north and south of the Redondo and Fullerton Junctions) would not accomplish the goal of removing trains from the corridor entirely or serving traffic that already originates and terminates east of the corridor.
- An area zoned for industrial use
- An area near a BNSF subdivision mainline
- An area with potential access to freight rail customers via existing roadway infrastructure capable of accommodating cargo deliveries to and from the IMF

During the site selection process, BNSF first examined whether the need for the new intermodal processing capacity could be provided at an existing BNSF facility in Southern California and determined it could not. The San Bernardino Intermodal Yard, the only existing BNSF IMF in Southern California that is outside and east of the corridor, currently handles approximately 700,000 lifts per year, which is near its current physical capacity. BNSF indicated that any additional capacity at the San Bernardino IMF is needed to handle expected growth in freight demand in the vicinity. Additionally, it is not feasible to expand the San Bernardino IMF because it is largely surrounded by developed land, making it impracticable to acquire additional acreage. It is therefore not possible for the San Bernardino IMF to process the additional 900,000 lifts per year required.

In reviewing potential sites for a new IMF facility, BNSF identified the Colton property (Figure 5) as a suitable site satisfying the criteria listed above. BNSF identified no similarly suitable sites as noted in its memo to the Authority (Attachment 2). BNSF has previously acquired rights to the Colton property as a strategic acquisition from the current owner (CalPortland Cement), whose aggregate mining and processing operation will be phased out in the near future under the terms of an approved site-reclamation plan. The Colton property satisfies the site requirements identified above, as it is:

- Approximately 642 acres
- East of the corridor

- Zoned for industrial uses
- Within 0.5 mile of the BNSF San Bernardino Subdivision mainline
- Near direct highway (Interstate [I-] 10) and secondary highway (I-215) access

The Authority independently evaluated the assumptions made by BNSF in the analysis documented in its memo to the Authority (Attachment 2). Specifically, the Authority conducted a screening process to identify potentially suitable sites for the IMF identified as necessary to alleviate the conditions that led to deterioration of service in the RTC model. As part of this review, the Authority identified the easternmost location along the BNSF corridor where an IMF could be located while still serving existing freight shippers. This easternmost point was Cajon Pass.

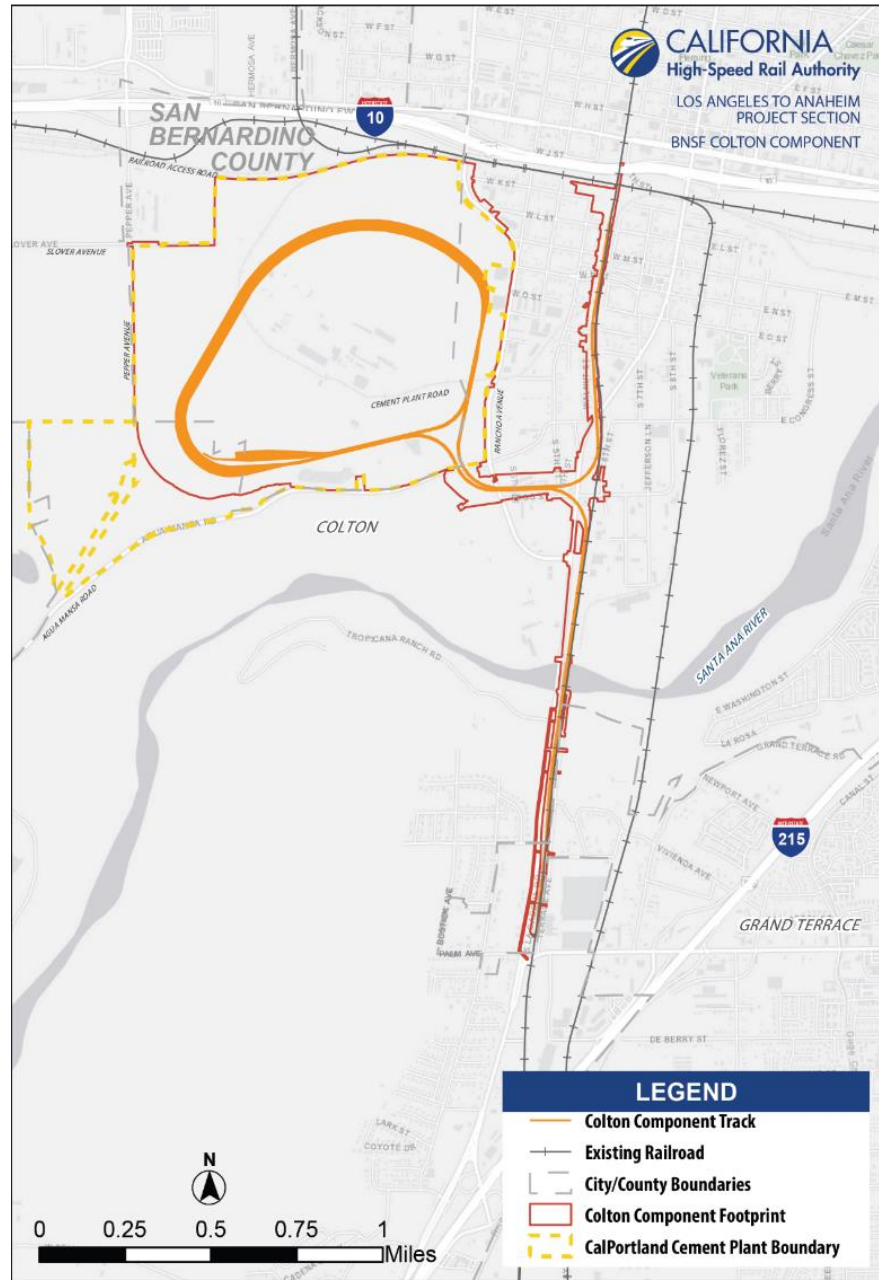


Figure 5 BNSF Railway-identified Colton Site

3.2 Warehousing and Freight Shipment Market Assessment

The Authority’s screening process to identify potentially new IMF site locations also considered the condition presented by Cajon Pass. Figure 6 presents the location of Cajon Pass. The yellow oval on the map indicates the general location of Cajon Pass at the BNSF Cajon Subdivision and I-15. Cajon Pass represents not only a topographic feature demarcating two physically different geographies, but also differing land development character and intensity—a feature more relevant for this analysis, as it relates to the location and proximity of industrial and warehousing land uses. The BNSF Cajon Subdivision tracks and I-15 traverse Cajon Pass. Along the existing BNSF Cajon Subdivision mainline, the land uses generally south of Cajon Pass include relatively large amounts of warehousing supply and potential BNSF shippers, while the areas north of Cajon Pass include a relatively small volume of the same. Figure 6 presents this general magnitude of differences in available shippers in each area via blue dots that represent warehouses. The graphic below originates from the Southern California Association of Governments’ 2012–2035 Regional Transportation Plan.

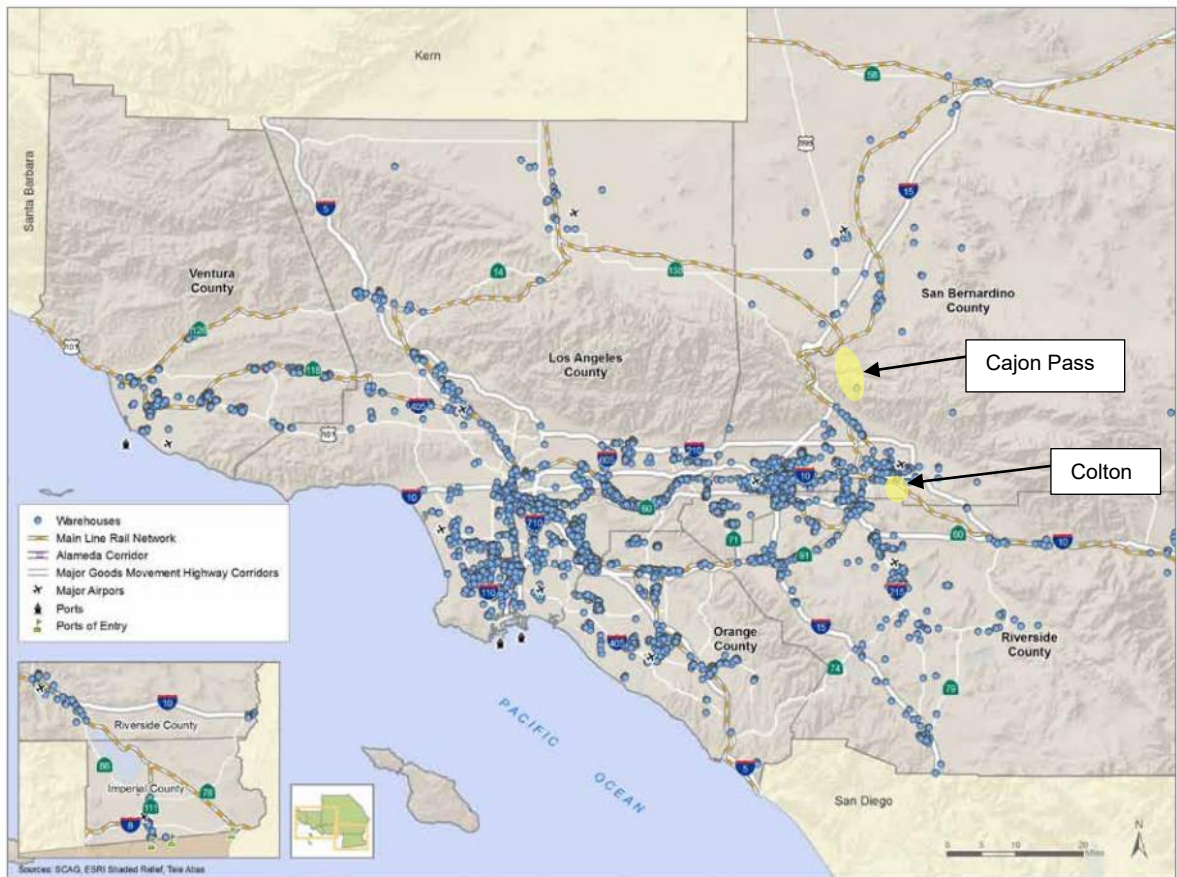


Figure 6 Shipping Patterns

As shown on Figure 6, there are substantially more warehouses (blue dots) south of Cajon Pass than to the north. The relative greater density and proliferation of warehouses is important because trucking services accessing a potential IMF will operate in a more efficient manner, having the origins and destinations of shippers being as close as possible to a new IMF.

Not only is an IMF south of Cajon Pass more attractive to a greater number of potential shippers, but it would also be more accessible via shorter trips by more trucks. This accessibility is a value to BNSF and the shippers from a business perspective, but also valuable to reducing regional air

quality impacts by enabling trucks to travel a shorter total distance to their various origins and destinations from the potential IMF's location.

If BNSF were to build an IMF north of Cajon Pass, there would likely be a travel pattern in and out of the IMF that was characterized by many more southbound truck trips to the San Bernardino area to access the large number of shippers and existing warehousing there. Therefore, an IMF location north of Cajon Pass would increase truck vehicle miles traveled, causing associated increases in air pollutant emissions, costs of shipping, and traffic congestion.

Considering all the above, the remainder of this analysis only considers potential new IMF locations south of Cajon Pass.

3.3 Site Selection Process for New Staging Tracks

As identified in the RTC modeling, construction within the rail corridor between Redondo Junction and Fullerton Junction would affect freight rail operations and displace existing storage capacity. To mitigate impacts of HSR project construction and maintain rail operational reliability and resiliency within the project corridor during HSR operations, the RTC modeling showed the need for like-for-like replacement of existing storage and support track capacity, as well as additional staging capacity outside of the shared railway corridor. Site selection criteria for the staging tracks were identified by BNSF based on capacity requirements, logistics, geography, and environmental conditions. Authority staff independently evaluated the criteria provided by BNSF.

As identified in the RTC modeling, BNSF would need to hold freight trains outside and east of the Redondo to Fullerton Junctions during construction of the 2018 HSR Project Alternative, and now the Shared Passenger Track Alternative, and on a long-term basis to create time windows for regular maintenance of the tracks during operations. As shown in the RTC time distance diagrams (stringlines) (Attachment 1), without the new staging tracks, delays to BNSF trains would be excessive and planned freight routes could not be sustained. BNSF developed the following site selection criteria for the new staging tracks for mitigation:

- The site should be outside and east of the corridor to allow freight trains to be held east of the shared tracks between the corridor and San Bernardino to avoid unacceptable congestion during passenger train commuter rush and because land to the north, west, and south of the corridor is highly urbanized and developed, and therefore unavailable for new staging tracks.
- The site should be west (downstream) of the junction of BNSF subdivision mainlines feeding into the Los Angeles Basin (i.e., Cajon, Mojave, and Needles Subdivision mainlines) to maintain efficient operations (e.g., combining cars, containers) from all points east and north (a staging facility east of the junction would result in inefficiencies in train traffic management)
- The site should contain a sufficiently large area of level ground to accommodate four 16,000-foot-long trains or eight 8,000-foot-long trains. Note that further coordination with BNSF with respect to the Shared Passenger Track Alternative has reduced required staging track size to one 32,000-foot-long track, two 16,000-foot-long tracks, or four 8,000-foot-long tracks.
- The site should be close to an existing BNSF employment center, such as a rail yard, to ensure an adequate labor pool and help manage costs.

During the initial (2020) site selection process, BNSF determined that the area between San Bernardino and the eastern approach to Cajon Pass was not suitable for the staging track component because of the steep, mountainous terrain in that area and a lack of available real estate. BNSF identified a suitable site for the staging tracks in Lenwood (Figure 7). Portions of the sites are owned by BNSF and the remaining portions are considered obtainable. The Lenwood site met all the above criteria and is a feasible staging track location for several reasons, including that it is:

- Outside and east of the shared tracks between the corridor and San Bernardino
- West (downstream) of the junction of Mojave and Needles Subdivision mainlines
- Large enough to accommodate four 16,000-foot-long or eight 8,000-foot-long tracks

- Adjacent to the existing Barstow rail yard, an existing BNSF employment center

However, since 2020, BNSF’s interest in this site has declined and the area may no longer be available for the development of staging tracks. As a result, the Authority has conducted an additional screening analysis with revised assumptions to identify potentially suitable sites for the staging tracks. The screening analysis only considered the area west (downstream) of the Mojave and Needles Subdivisions and east (upstream) of Cajon Pass, as this area best met the key operational considerations for the location of staging tracks, which were: an area large enough and flat enough to accommodate one 32,000-foot-long, two 16,000-foot-long, or four 8,000-foot-long tracks and west (downstream) of the BNSF subdivision mainlines in order to maintain efficient train traffic management.



Figure 7 Lenwood Site

4 EVALUATION OF ALTERNATIVE SITES FOR A NEW BNSF RAILWAY INTERMODAL FACILITY AND STAGING TRACKS

Using the site selection criteria established by BNSF, the Authority conducted an independent analysis to identify potential sites that could accommodate the IMF and staging tracks and provide alternatives to the BNSF-identified Colton IMF and Lenwood staging tracks sites. The analysis considered sites that seemed to have sufficient size to accommodate the new BNSF facilities and then screened the sites against the BNSF site selection criteria, as well as other potential environmental factors. During this screening analysis, the Authority used ESRI's Arc Geographic Information System (ArcGIS) mapping software to identify potential sites that could be suitable for an IMF or staging tracks.

The analysis relied upon the following data layers accessed within ArcGIS to determine how the features and information contained in each data layer affected the feasibility of individual site locations.

- Base layers
 - World Imagery: Satellite Aerial View
 - USA Topo Maps: Topographic View
- Critical Habitat: Endangered and Threatened Species Critical Habitat
- National Hydrography Dataset (NHD)
- County Parcel Datasets
- Orange County Zoning
- Riverside County Zoning
- San Bernardino County Zoning
- Park Lands
- National Flood Hazard Layer
- North American Rail Lines (lines owned by BNSF)
- U.S. Fish and Wildlife Service National Wetlands Inventory

4.1 Identification of Potential Intermodal Facility Sites

The identification of potential IMF sites included an area extending east from Fullerton Junction along the BNSF rail line right-of-way up to Cajon Pass near the I-15/I-215 junction. Fullerton Junction was used as the western boundary for this screening process because the RTC modeling conducted by BNSF found that an intermodal freight facility would need to be east of the corridor to alleviate congestion within the corridor. The approach to Cajon Pass was used as the eastern boundary for this screening process because the topography east of I-15 leading to the pass makes it infeasible to site an IMF facility beyond this point. As discussed above, siting an IMF north of Cajon Pass is impractical from a freight movement standpoint because a vast majority of freight originates from or is destined for a warehouse or other facility on the Inland Empire (south) side of the pass. For a complete discussion of the reasons locations beyond Cajon Pass were not analyzed, please see Section 3.2, Warehousing and Freight Shipment Market Assessment.

The Authority began the screening process by identifying the existing BNSF mainline extending from Fullerton Junction to the approach to Cajon Pass. Once it was identified, a 1.5-mile buffer was placed on either side of the BNSF mainline corridor as a boundary for the site selection screening process. An IMF sited off the mainline corridor would require spur lines to be built so that trains can reach the IMF. The farther from the mainline the IMF is, the longer these spur lines would need to be, reducing the efficiency of train operations and increasing impacts associated with spur line construction. The 1.5-mile buffer was considered to have reasonable proximity to the mainline while still being able to capture alternative locations without incurring substantial environmental impacts or operational inefficiencies. The 1.5-mile buffer along approximately 55 miles of mainline corridor between Fullerton Junction and the approach to Cajon Pass resulted in approximately 170 square miles of area screened for potential IMF locations. The Authority reviewed satellite aerial imagery to identify areas of land that were up to about 650 acres in size and appeared to contain undeveloped

land or developed land with industrial uses that could be converted into an IMF. Once potential sites were identified, various ArcGIS data layers were used to determine the suitability of the site for development of an IMF.

4.2 Potential Sites Identified

The Authority identified the following sites as potential IMF locations that could be alternatives to the BNSF-identified Colton IMF site and analyzed each site for suitability for development of an IMF. See Figure 8 for a map providing an overview of all site locations. The BNSF-identified Colton IMF site is discussed following the Authority-identified IMF sites with data on the Colton site, similar to the data included for the Authority identified sites, provided for comparison.



Figure 8 Potential Intermodal Facility Sites Evaluated

4.2.1 Potential Intermodal Facility Site #1

This potential IMF site is east of State Route (SR) 57 and north of SR 91 in Anaheim, Orange County. The site currently includes manufacturing, small businesses, and two human-made basins as land uses (Attachment 3, Potential Intermodal Facility Sites and BNSF Railway-Identified Colton Site, Figure 2A and Figure 2B).

Site Size: Approximately 390 acres

Proximity to the Corridor: 0.05 mile south of the BNSF mainline

Zoning: Designated as SP-2015-1 within the Anaheim Canyon Specific Plan,² which provides for development areas to create a regional employment center through a mix of industrial and related uses

Existing Roadway Infrastructure: Accessible via SR 91 northbound and southbound using Tustin Avenue to La Palma Avenue

Other Factors Affecting Suitability: The site is relatively flat except for the two human-made basins, which are relatively deep topographic depressions compared to the surrounding land uses. Surrounding land uses include primarily manufacturing and small businesses. The basins are part of the Orange County Emergency Management facilities and are used to retard flood flows within the urbanized area downstream of Carbon Canyon Dam. The site is within an area with reduced flood risk because of the dam levee, but also contains areas within the 100-year flood hazard. These areas are Anaheim Lake, Miller Basin, Miraloma Basin, Kraemer Basin, and the Carbon Canyon Diversion Channel, which serves to divert low flows into the lower Santa Ana River groundwater recharge facilities. Because of its location within a flood zone and primary function as a flood-control facility, the site was considered less than desirable as an IMF site. This location also presents challenges related to site configuration and operations because of its proximity to Fullerton Junction. The area has high passenger service volumes, which would require track leads long enough to enter and exit the site without affecting passenger service.

4.2.2 Potential Intermodal Facility Site #2

This potential IMF site is east of the 241 Toll Road and south of SR 91 in Anaheim, Orange County. The site encompasses vacant land owned by the Orange County Cemetery District (Attachment 3, Figure 3A and Figure 3B).

Site Size: Approximately 265 acres

Proximity to the Corridor: 0.52 mile south of the BNSF mainline

Zoning: Designated as SP-90-4 within the Mountain Park Specific Plan,³ which governs recreational, residential, and open space land uses

Existing Roadway Infrastructure: Accessible via SR 91 eastbound using E Santa Ana Canyon Road and westbound using Gypsum Canyon Road

Other Factors Affecting Suitability: The site is undeveloped but not flat; the site contains small topographic peaks that are likely part of the foothills associated with Chino Hills State Park, located along the site's eastern boundary. Several NHD flowlines, as identified by the U.S. Geological Survey, cross through the site and merge into a single feature that then crosses the freeway and Featherly Regional Park, joining other NHD flowlines that feed into the Santa Ana River north of the site. The Santa Ana River runs parallel to SR 91 in this area. Covering 2,650 square miles, the Santa Ana River drains the largest watershed in California's South Coast Region. The BNSF mainline is north of the site with the freeway, river, and a residential community between the rail tracks and site. To access the site from the mainline tracks, approximately 1.5 miles of spur track would need to be built to cross the residential area, river, park, and freeway. In this location, the mainline tracks are in the Santa Ana River Basin and are therefore lower than the site. The spur track would need to cross the river and SR 91 at a grade of less than 1 percent, presenting an additional challenge. Topography south of SR 91 is hilly and would require some grading to provide a level area for the IMF, presenting yet another challenge. Because additional spur track would have to be built to bridge the gap from the mainline to the site, potential complexity of crossing multiple linear facilities and land uses (including residential), and less-than-ideal topography, the site was considered less than desirable as an IMF site.

² <https://gis.anaheim.net/PropertyInfo/index.html?APN=51401235>. Accessed 6/1/2021.

³ https://codelibrary.amlegal.com/codes/anaheim/latest/anaheim_ca/0-0-0-72768#JD_18.112.010. Accessed 6/1/2021.

4.2.3 Potential Intermodal Facility Site #3

This potential IMF site is south of SR 91 and east of I-15 in Corona, Riverside County. The site encompasses vacant land that supports several active aggregate mining operations. The Lake Mathews Estelle Mountain Reserve borders the site to the south and east (Attachment 3, Figure 4A and Figure 4B).

Site Size: Approximately 406 acres

Proximity to the Corridor: Adjacent to a BNSF spur line and 1.5 miles south of the BNSF mainline

Zoning: Partially within SP-91-02 (El Cerrito Specific Plan)⁴ in Corona. The northern portion of the site is zoned as M3/MR (Heavy Manufacturing-Mineral Resource)⁵

Existing Roadway Infrastructure: The site is accessible via I-15 northbound and southbound using Magnolia Avenue to Sherborn Street, which is a partially paved, unmarked two-lane road.

Other Factors Affecting Suitability: The site currently supports an aggregate mining operation. Adjacent land uses include other mining operations and open space. Surrounding land uses include industrial, residential, and open space. The site topography varies because of active mining activities, but primarily consists of steep slopes ranging in elevation from 800 to 1,400 feet above mean sea level. Temescal Wash passes through a portion of the site's western boundary with areas of wetlands identified north of, south of, and within the site's boundary. Several NHD flowlines (as identified by the U.S. Geological Survey) cross through the site. The site has been actively mined for several years and continues to support several aggregate operations. These operations represent existing BNSF customers that could be affected or displaced by an IMF in this location. The site also presents some access challenges, as it is currently only served by a single tail track. To serve the site from more than one direction, the existing tail tracks would likely need to be upgraded. Because of the distance from the mainline (over 0.5 mile), steep topography, wetlands, and active mining operations, the site was considered less than desirable as an IMF site.

4.2.4 Potential Intermodal Facility Site #4

This potential IMF site is east of SR 91 and west of I-215 in Riverside, Riverside County. The site is part of the University of California, Riverside (UCR) campus and encompasses active agricultural operations (Attachment 3, Figure 5A and Figure 5B).

Site Size: Approximately 528 acres

Proximity to the Corridor: Approximately 1 mile south of the BNSF mainline

Zoning: Zoned as a public facility (PF), with residential zoned property to the south and west, and commercial zoned property to the north⁶

Existing Roadway Infrastructure: Accessible via I-215 northbound and southbound using Martin Luther King Boulevard

Other Factors Affecting Suitability: The site is part of the UCR campus, with agricultural operations being the primary use, although there are also UCR parking and apartments on site. Martin Luther King Boulevard bisects the site, and the eastern and southern sections of the site are crossed by Gage Canal and an open drainage feature. The site is surrounded by residential neighborhoods to the west and south, UCR to the east, and mostly commercial uses to the north. The site is within an area of minimal flood hazard, but also contains areas within the 100-year flood hazard: Gage Canal and the open drainage feature. To access the site from the mainline tracks, about 1.5 miles of spur track would need to be built and would have to cross residential areas to the west or UCR campus to the east. Because the site is part of the UCR campus, centrally located within residential neighborhoods, and disconnected from the mainline tracks (requiring construction of additional spur tracks), the site was considered less than desirable as an IMF.

⁴ <https://www.coronaca.gov/home/showpublisheddocument/1946/637357536223500000>. Accessed 6/1/2021.

⁵ <https://www.coronaca.gov/home/showpublisheddocument/218/636072222119230000>. Accessed 6/1/2021.

⁶ <https://riversideca.gov/cedd/sites/riversideca.gov.ceedd/files/pdf/planning/Zoning-Map.pdf>.

4.2.5 Potential Intermodal Facility Site #5

This potential IMF site is south of I-10 and west of I-215 near Grand Terrace and the Agua Mansa Industrial Corridor in San Bernardino County. The site encompasses part of the La Loma Hills and is characterized by undeveloped open space (Attachment 3, Figure 6A and Figure 6B).

Site Size: Approximately 596 acres

Proximity to the Corridor: 0.24 mile west of the BNSF mainline

Zoning: The western side of the site is zoned for light manufacturing, while the eastern side of the site is zoned as part of the Roquet Ranch Specific Plan. The site is also near residential zoned properties to the east.⁷

Existing Roadway Infrastructure: Accessible via I-215 northbound and southbound using S Iowa Avenue to S La Cadena Drive

Other Factors Affecting Suitability: The site is bordered by the Santa Ana River and Santa Ana River Trail to the north and west, residential neighborhoods to the east, and a mix of businesses and AB Brown Sports Complex to the south. The site is not flat because it is part of the La Loma Hills. Several NHD flowlines appear to originate within the hills on site, but do not appear to connect to the Santa Ana River. The site is within critical habitat for threatened species and the adjacent Santa Ana River supports critical habitat for endangered species. Some grading would be needed to provide a level area for the IMF. To access an IMF site in this location, dual lead tracks would have to be built over I-215, which is a 10-lane freeway in this location. Because of the site's location within and adjacent to critical habitat, the hilly topography, and challenging access, the site was considered less than desirable as an IMF.

4.2.6 Potential Intermodal Facility Site #6

This potential IMF site is near the approach to Cajon Pass, between the town of Muscoy and California State University San Bernardino, San Bernardino County on a section of land bound by I-215 to the north and east and Cajon Boulevard (Historic Route 66) to the south and west. The site is presently occupied by several warehouses (Attachment 3, Figure 7A and Figure 7B).

Site Size: Approximately 564 acres

Proximity to the Corridor: Immediately adjacent to the BNSF mainline

Zoning: The site is zoned for heavy industrial (IH) use in the north, and light industrial (IL) to the south. The site also has a Flood Control Capture and Storage (Proper Functioning Condition) channel that bisects the site from the east through the western side of the site.⁸

Existing Roadway Infrastructure: Accessible via I-215 northbound and southbound using University Parkway to Hallmark Parkway

Other Factors Affecting Suitability: The site is surrounded by residential neighborhoods, Cajon Wash, and the Shandin Hills. The site is bisected by Cable Creek, an earthen channel, and Devils Creek Diversion Channel, which is a concrete-lined channel originating from Devils Canyon. The two channels bisect the site, converging just west of the site where they then flow to Cajon Wash. The site is within an area with reduced flood risk because of a dam levee, but also contains areas within the 100-year flood hazard: Cable Creek and Devils Creek Diversion Channel. Devils Canyon, north of California State University San Bernardino, and Cajon Wash support endangered species. The site supports some commercial uses near University Parkway, but primarily hosts warehouses. The site was considered less than desirable as an IMF because of a combination of the following factors: the site's proximity to residential land uses, a university campus, and areas with sensitive habitat; potential difficulty of relocating warehouse space; and the complexity of the site design with two converging channels that essentially divide the site in half.

⁷ https://www.ci.colton.ca.us/DocumentCenter/View/6690/Zoning_current-to-O-09-19.

⁸ <http://www.ci.san-bernardino.ca.us/civicax/filebank/blobdload.aspx?blobid=15754>.

4.2.7 BNSF Railway-Identified Colton Intermodal Facility Site

The BNSF-identified Colton IMF site (Colton Component) is in West Colton between the towns of Bloomington and Grand Terrace, San Bernardino County. It is bordered by the San Bernardino Freeway (I-10) to the north, S Rancho Avenue to the east, Agua Mansa Road to the south, and S Pepper Avenue to the west (Attachment 3, Figure 8A and Figure 8B). The current aggregate mining and processing operation will be phased out in the near-future under the terms of an approved site-reclamation plan.

Site Size: Approximately 642 acres

Proximity to the Corridor: According to the Transportation Technical Report for the Colton Component, the proposed IMF at Colton is approximately 0.27 mile west of the existing BNSF mainline tracks along portions of S La Cadena Drive and Sixth Street.

Zoning: According to the City of Colton Zoning Map,⁹ the Colton Component is in a non-designated area. It is bordered to the east by M-1 (Light Industrial), to the south by M-2 (Heavy Industrial), and to the west by both M-2 (Heavy Industrial) and OS-RS (Open Space Resources). Immediately to the north of the site is I-10, a major east-west highway.

Existing Roadway Infrastructure: Accessible from I-215 southbound using the S Mount Vernon Avenue exit, or by I-10 westbound using the Ninth Street exit toward downtown

Other Factors Affecting Suitability: The Santa Ana River is the closest waterbody and is directly south of the facility. According to Federal Emergency Management Agency floodplain mapping and readily available geographic information system data, most of the site is within an Area of Undetermined Flood Hazard, with a portion depicted as a Minimal Flood Hazard area. Potential threatened and endangered species habitat is not overlapping with the facility, but exists directly south following along the Santa Ana River channel. No other physical environmental factors were identified that would affect the suitability of the Colton Component. The size of the site (500+ acres), industrial zoning, proximity to BNSF mainline (0.27 mile), and direct highway access (main access to I-10, secondary access to I-215) make this location well suited for an IMF. In addition, the current site operations will be phased out in the near-future and the site is within 0.5 mile of the BNSF San Bernardino Subdivision mainline.

4.3 Demographic Analysis

U.S. Department of Transportation Title VI regulations require specific consideration of environmental justice in an agency's analysis of siting facilities. Specifically, 49 Code of Federal Regulations Part 21.5(b)(3) states that "in determining the site or location of facilities, a recipient may not make selections" with a disparate impact on minority populations. Appendix C to Part 21 of the same regulations provides specific examples of decision-making subject to these requirements, including with respect to the "location of projects requiring land acquisition and the displacement of persons from their residences and businesses." As a federally funded entity subject to Title VI regulations, the Authority, as part of its independent review of the potential siting considerations for the IMF, specifically considered potential impacts on minority populations. The Authority's overall approach to evaluating these impacts considered race and income. Although low income is not a specific category in the federal regulations, the Authority's overall approach to environmental justice has been to address low-income and minority (non-white) populations.

This section summarizes the demographic character of the sites reviewed as part of the site selection evaluation, as well as the BNSF-identified Colton IMF site. The demographic data presented focus on the race and income characteristics of the populations surrounding the potential facility locations. The purpose of the evaluation was to provide a high-level characterization of the sites being considered and was not intended to represent a full environmental justice analysis. As part of the evaluation, the Authority compiled general demographic data for the potential facility sites including the BNSF-identified Colton IMF site. The demographics data considered low-income and

⁹ https://www.ci.colton.ca.us/DocumentCenter/View/6690/Zoning_current-to-O-09-19. Accessed 6/1/2021.

minority (non-white) populations from community block groups that overlap with the identified sites. This section presents that demographic data and the process used to obtain the data.

4.3.1 Demographics Methodology

The following methodology was used to obtain demographic data for each of the identified sites. The data were collected using the U.S. Environmental Protection Agency’s EJScreen tool, which is a screening and mapping tool that provides a nationally consistent approach to characterizing environmental justice populations. It combines demographic and environmental data that can be shown spatially on maps or produced as tables for reports. This dataset analyzes communities by census block groups.

In order to more effectively summarize low-income and minority populations for this exercise, the following steps were taken to produce a weighted demographic variable for each of the identified sites:

1. Place a half-mile buffer around each of the identified sites, including the BNSF-identified Colton IMF site, using ArcGIS.
2. Conduct a Clip¹⁰ analysis in ArcGIS where the block group/EJScreen data are clipped to the site’s half-mile buffer.
3. In ArcGIS, calculate the area for the clipped block groups and the half-mile buffer (in square miles).
4. Export the clipped block group demographic data and measurements into a Microsoft Excel spreadsheet.
5. In Microsoft Excel, use the measurements calculated in Step 3 to divide the clipped block group area by the total buffer area to produce a percentage to be used as a “multiplier.”
6. Multiply the percent low-income for each block group by the multiplier. Repeat for percent non-white.
7. Sum the products calculated in Step 6 to create an adjusted demographic statistic for each site’s low-income and minority populations.

The adjusted statistics reflect each block group’s representation within each half-mile buffer. The outcome of this exercise is summarized in Section 4.3.2, Demographics Summary, Table 1 and Table 2.

4.3.2 Demographics Summary

Based on the data output from the demographics exercise, the weighted demographic variables indicate that potential IMF Site #4 has the highest percentage of low-income populations in the surrounding communities, as shown in Table 1. Potential IMF Site #3 has the highest percentage of minority populations in the surrounding communities, as indicated in Table 2. The weighted demographics tables (Table 1 and Table 2) also include demographic data for the BNSF-identified Colton IMF site for comparison purposes.

Table 1 Adjusted Low-Income Population

Potential IMF Site	Low-Income Population (adjusted average)
Site 1	30%
Site 2	22%
Site 3	12%
Site 4	53%

¹⁰ *Clip* is a geoprocessing tool in ArcGIS that takes two overlapping datasets and extracts the overlapping areas into a new layer, similar to a cookie cutter.

Potential IMF Site	Low-Income Population (adjusted average)
Site 5	44%
Site 6	33%
BNSF-identified Colton site	41%

BNSF = BNSF Railway; IMF = intermodal facility

Table 2 Adjusted Minority Population

Potential IMF Site	Minority Population (adjusted average)
Site 1	74%
Site 2	43%
Site 3	87%
Site 4	77%
Site 5	83%
Site 6	84%
BNSF-identified Colton site	84%

BNSF = BNSF Railway; IMF = intermodal facility

4.4 Identification of Potential Staging Tracks Sites

The screening analysis conducted for the staging tracks also included the use of ESRI’s ArcGIS mapping software. The area included in the screening analysis was west of the Mojave and Needles Subdivisions and east of Cajon Pass. Cajon Pass was used as the western boundary for this screening process because the area between Fullerton and the eastern approach to Cajon Pass was not suitable for staging tracks because of the lack of available real estate and the steep mountainous terrain through the pass. The split between the Mojave and Needles BNSF Subdivisions (near the junction of I-15/I-40) was used as the eastern extent of the area evaluated for the location of staging tracks because the staging tracks need to be west (downstream) of the BNSF subdivision mainline junction in order to maintain efficient operations. Staging tracks east of the junction would result in inefficiencies in train traffic management.

The Authority began the screening process by identifying the BNSF mainline extending from Cajon Pass to the approach to the Mojave and Needles Subdivisions. Once it was identified, an area 100 feet wide and about 20,000 feet long was placed on either side of the BNSF mainline corridor as an area for the site selection screening process. The area used for the screening process is smaller than the BNSF-identified Lenwood site because it does not encompass parcels that may need to be acquired in part or whole or for operational considerations or components that may need to be included in site development to support staging tracks at these locations. The Lenwood site included additional parcels that could support other rail yard facilities. The analysis was a high-level review of potential sites that could accommodate additional staging tracks near the mainline corridor. The screening footprint was placed directly off the mainline corridor, as sites farther away would create inefficiencies in operations and additional concerns about the surrounding environment and community, as well as topographic challenges with finding a site large and flat enough to accommodate staging freight trains. The 100-foot buffer along approximately 65 miles of mainline corridor between Cajon Pass and the Mojave/Needles Subdivisions resulted in approximately 2.4 square miles of area screened for potential staging tracks sites. The Authority reviewed satellite aerial imagery to identify areas of land that were 100 feet wide and approximately 15,000 to 20,000 feet long and appeared to contain flat, undeveloped land.

Once potential sites were identified, various ArcGIS data layers were reviewed to determine the suitability of the site for development of staging tracks. The analysis relied upon the same data

layers used in the screening analysis for the IMF to determine how the features and information contained in each data layer affected the feasibility of individual site locations.

In addition to the selection criteria identified in Section 3.3, Site Selection Process for New Staging Tracks, BNSF has asked the Authority to consider the following site requirements:

- 20-foot track centers
- An average site grade of less than 1 percent
- Proximity to or ease of use of existing road infrastructure to access site

For the 2018 HSR Project Alternative, staging tracks must be able to accommodate either:

- Eight 8,000-foot tracks (9,000 feet each with crossovers), or
- Four 16,000-foot tracks (approximately 18,000 feet with crossovers)

For the Shared Passenger Track Alternative, staging tracks must be able to accommodate either:

- Four 8,000-foot tracks (9,000 feet each with crossovers),
- Two 16,000-foot tracks (approximately 18,000 feet with crossovers), or
- One long track of 32,000 feet parallel to the main

4.5 Potential Sites Identified

The Authority identified the following sites as potential staging track alternatives to the BNSF-identified Lenwood staging tracks site (Lenwood Component). These sites were analyzed for suitability for development of staging tracks.

Figure 9 provides an overview map with a list of the site locations. The BNSF-identified Lenwood staging tracks site is discussed following the Authority-identified staging tracks sites with data on the Lenwood site, similar to the data included for the Authority-identified sites, provided for comparison.

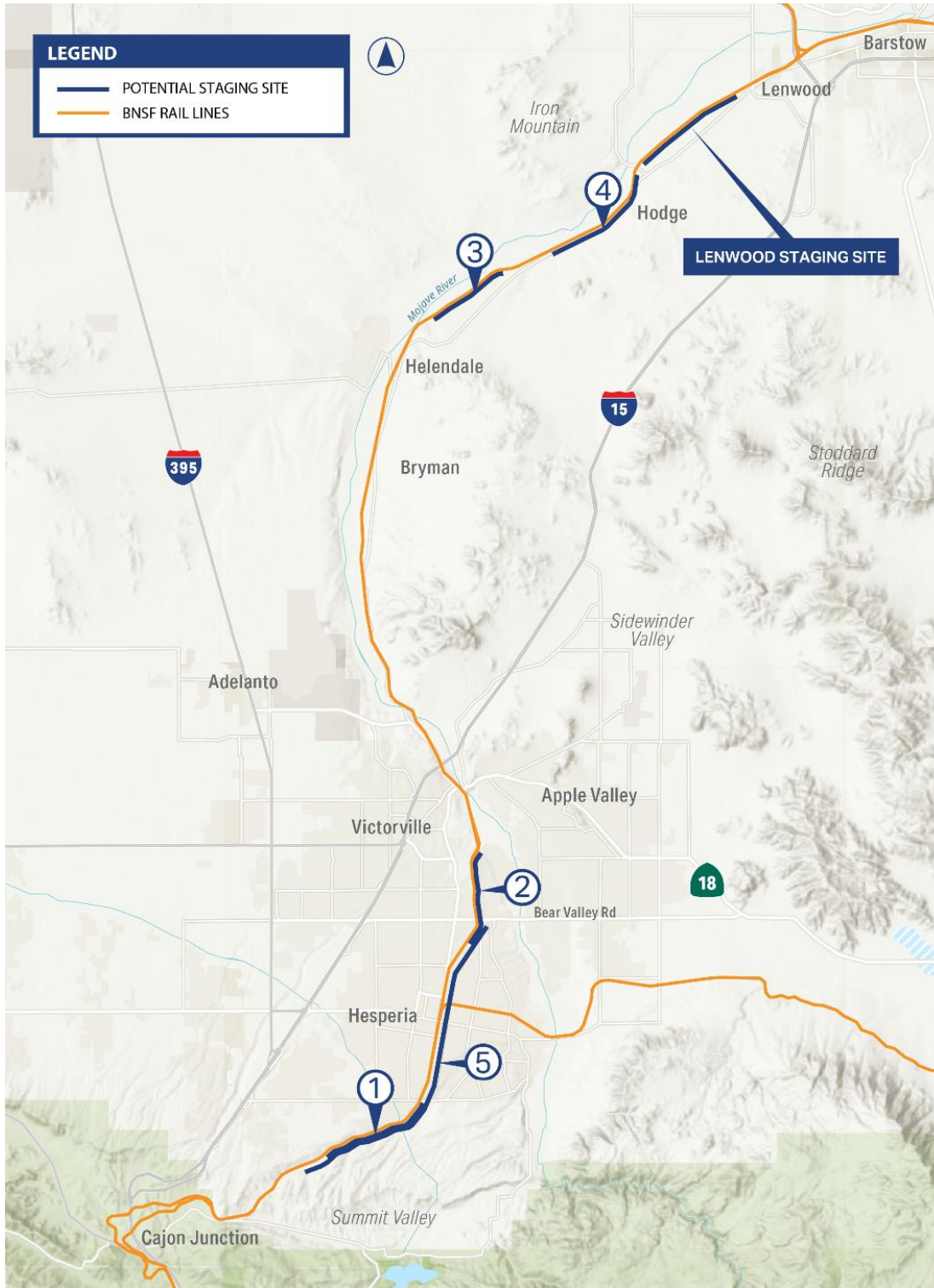


Figure 9 Potential Staging Tracks Sites Evaluated

4.5.1 Potential Staging Tracks Site #1

This potential site is south of the BNSF mainline along Summit Valley Road about 10.5 miles south of Victorville. It begins at the intersection of Summit Valley Road and McConnery Road and ends

just prior to the intersection of Summit Valley Road and Ranchero Road (Attachment 4, Potential Staging Tracks and BNSF Railway-identified Lenwood Staging Tracks Site, Figure 2A and Figure 2B).

Site Size: Approximately 20,126 feet long and 100 feet wide, totaling 46 acres

Proximity to the Corridor: South of, and immediately adjacent to, the BNSF mainline

Zoning: The site is generally zoned as RR (Rural Residential), with other areas zoned as MR-EA (Restricted Manufacturing), I1 (Limited Manufacturing), M1 (Light Manufacturing), and R3 (Multifamily Residential).

Existing Roadway Infrastructure: The site generally parallels Summit Valley Road, which is an east-west two-lane expressway. However, the site is currently only accessible from a service road off Jenny Street that serves the California Aqueduct, which the site crosses at this location parallel to the BNSF mainline.

Other Factors Affecting Suitability: The site appears to be relatively flat, although there are rolling hills in the vicinity. There are overhead utilities throughout the site corridor. The easternmost section of the site is parallel to Hesperia Airpark, which is a one-runway airfield 3 miles south of the town of Hesperia. The site is within an area of undetermined flood hazard and there are several NHD flowlines that parallel, but do not cross, the site. The site is relatively remote with limited freeway access and is 32.4 miles from BNSF's San Bernardino IMF and 43.7 miles from the Barstow IMF, distances that are considered less than desirable from a business perspective. While the site generally meets the siting criteria and does not appear to have insurmountable environmental constraints, BNSF noted that the IMF could be very expensive to build, as tracks would require retaining walls and a large amount of fill. Additionally, it has not been determined whether the adjacent aqueduct tunnel could support additional tracks.

4.5.2 Potential Staging Tracks Site #2

This potential site is east of the BNSF mainline between Mojave Narrows Regional Park and just south of Bear Valley Road in Victorville. Adjacent land uses include primarily residential and industrial (warehousing and distributors) (Attachment 4, Figure 3A and Figure 3B).

Site Size: Approximately 17,070 feet long and 39 acres

Proximity to the Corridor: East of and immediately adjacent to the BNSF mainline

Zoning: The site is generally zoned C-2 (General Commercial), M-1 (Light Industrial), M-2 (Heavy Industrial), and IPD (Industrial Park).

Existing Roadway Infrastructure: The site generally parallels Ridgecrest Road between Bear Valley Road and Yates Road/Yucca Loma Road but is not accessible from Ridgecrest Road. Bear Valley Road crosses over the southern section of the site; however, there is no direct access to the site from Bear Valley Road.

Other Factors Affecting Suitability: The site is in a minimal flood hazard area; however, just north of the site, Mojave Narrows Regional Park is within a 100-year floodplain. Mojave Narrows Regional Park also supports endangered and State-protected species. Several NHD flowlines cross or parallel the site. The site is bordered by adjacent residential development and, at its southern extent, it crosses through existing commercial and light industrial uses. The site also has limited freeway access and is 39 miles from the San Bernardino IMF and 38.4 miles from the Barstow IMF, distances that are considered less than desirable from a business perspective. However, the site overlaps the northern extent of the proposed High Desert Operational Efficiency Project (Potential Staging Tracks Site #5), which is being proposed by BNSF as a separate staging tracks project. Overall, the site generally meets the siting criteria and does not appear to have insurmountable environmental constraints. BNSF has confirmed that this site meets its purpose and need and has expressed interest in developing this site as a staging track mitigation site.

4.5.3 Potential Staging Tracks Site #3

This potential site is south of the BNSF mainline and about 16 miles southwest of Barstow and 2 miles northeast of Helendale. The site begins near the Point of Rock geological formation to the south and ends near Holcomb Ranch Road to the north. The National Trails Highway (Historic Route 66) parallels the site to the east (Attachment 4, Figure 4A and Figure 4B).

Site Size: Approximately 15,091 feet long and 100 feet wide, totaling 35 acres

Proximity to the Corridor: South of, and immediately adjacent to, the BNSF mainline

Zoning: The site is generally zoned as RL (Rural Living) and AG (Agriculture), as well as FW (Floodway) just west of the site.

Existing Roadway Infrastructure: Lords Road is north of the BNSF mainline and parallels the entire site. Indian Trail crosses the site and Lords Road close to the site's eastern boundary. National Trails Highway (Route 66) is about 0.5 to 0.75 mile to the east of the BNSF mainline. Route 66 is a north-south two-lane undivided highway.

Other Factors Affecting Suitability: The site is in an area of minimal and undetermined flood hazard; however, just north of the site is an area within the 100-year flood zone. Several NHD flowlines parallel the site, but do not cross it. Federally designated critical habitat is just southwest of the site. The site is in a relatively remote area, with Helendale being the closest community (0.81 mile south). The site has limited freeway access and is 58.6 miles from the San Bernardino IMF and 17.9 miles from the Barstow IMF. The closer proximity to the Barstow IMF provides some advantage from a labor pool and cost management standpoint. Overall, the site would be large enough to contain the 8,000-foot tracks but would not facilitate construction of the 16,000-foot tracks. Additionally, the site is on a ridge along the Mojave River, which could create constructability and stability issues. BNSF has expressed concern over potential site instability and proximity to the Mojave River, which would create engineering challenges associated with developing this site.

4.5.4 Potential Staging Tracks Site #4

This potential site is west of the BNSF mainline and south of Johnstons Corner in San Bernardino County. The site parallels Main Street/National Trails Highway (Historic Route 66) to the south and begins south of Hinkley Road and ends north of Frontier Road (Attachment 4, Figure 5A and Figure 5B).

Site Size: Approximately 20,160 feet long and 100 feet wide, totaling 46 acres

Proximity to the Corridor: West of, and immediately adjacent to, the BNSF mainline

Zoning: The site is generally zoned as RL (Rural Living) and AG (Agriculture), as well as FW (Floodway) just west of the site.

Existing Roadway Infrastructure: The site parallels Main Street/National Trails Highway and is crossed by Hinkley Road to the north and Holcomb Ranch Road to the south.

Other Factors Affecting Suitability: The site is in an area of undetermined flood hazard. Several NHD flowlines parallel or run perpendicular to the site, but do not cross it. Federally designated critical habitat exists in several areas north and south of the site. The site is in a relatively remote area of San Bernardino County, with the closest communities being Johnstons Corner and Hodge. The site overlaps the southern extent of the Lenwood site and is closer in proximity (10 miles) to the Barstow rail yard than the other potential staging tracks sites, but not as close to the Barstow IMF. Generally, the site is similar to the Lenwood site selected by BNSF in terms of location, geography, and impacts. Both sites are close or adjacent to federally listed species habitat and protected areas; however, no portion of the site is within a 100-year flood zone. The site generally meets the siting criteria and does not appear to have insurmountable environmental constraints. Similar to Potential Staging Tracks Site #3, BNSF noted that proximity to the Mojave River, and protected species habitat, may create additional hurdles to development in this area.

4.5.5 Potential Staging Tracks Site #5

This potential site is within the BNSF mainline right-of-way in Hesperia and unincorporated areas of San Bernardino County. The site extends approximately 11.2 miles from railroad Milepost 41.8 (near Bear Valley Road) to Milepost 53.0 (adjacent to Summit Valley Road) within a double-track segment of the BNSF Cajon Subdivision (Attachment 4, Figure 6A and Figure 6B).

Site Size: Approximately 59,136 feet long and 80 feet wide, totaling 108 acres

Proximity to the Corridor: Within the BNSF mainline right-of-way

Zoning: The site is generally zoned as OH/IN (Oak Hills/Institutional), RS (Single Residential), RS-1 (Single Residential – 1 acre minimum), and City (Hesperia and Victorville).

Existing Roadway Infrastructure: The site generally parallels Summit Valley Road/Santa Fe Avenue E between Trout Road and Bear Valley Road. Bear Valley Road crosses over the northern end of the site; however, there is no direct access to the site from Bear Valley Road.

Other Factors Affecting Suitability: The site's southernmost extent is within an area of undetermined flood hazard. Several NHD flowlines parallel or run perpendicular to the site, but do not cross it except the California Aqueduct, which crosses underneath the site just south of Rancho Road. The site is within an undetermined flood hazard zone. The site stays within the existing BNSF right-of-way, potentially reducing impacts on waters of the United States and other environmental resources. A 100-year flood zone and regulatory floodway parallels a portion of the site between Rock Springs Road and Rancho Road. The floodway passes through the Hesperia Golf and Country Club before connecting to the Mojave River east of the site. Several federally and locally protected areas are close to the site. This site is being proposed as a separate staging tracks project by BNSF, identified as the High Desert Operational Efficiency Project.

The High Desert Operational Efficiency Project includes an 11-mile extension of the existing BNSF main track to create a new segment of three main tracks and two 22,500-foot-long staging tracks. The project would allow for staging of four 8,000-foot-long freight trains or two or three longer freight trains. The project is intended to increase operational flexibility and reduce both freight and vehicle delays by staging trains outside of bottleneck locations on shared-use segments within the Los Angeles Basin.

BNSF has confirmed that this site meets its purpose and need and has expressed interest in developing this site as a staging track mitigation site for the purposes of this project.

4.5.6 BNSF Railway-Identified Lenwood Staging Tracks Site

The BNSF-identified Lenwood staging tracks site (Lenwood Component) is north of Johnstons Corner and south of Lenwood near Barstow. The site parallels Main Street/National Trails Highway (Route 66) and is within a primarily rural area of San Bernardino except where it approaches the community of Lenwood, which has more residential and commercial development. The site is close to an existing BNSF employment center (Barstow Rail Yard) and is accessible from I-15 (Attachment 4, Figure 7A and Figure 7B).

Site Size: Approximately 27,000 feet long and 1,368 feet wide (varies), totaling 848 acres

Proximity to the Corridor: South of, and immediately adjacent to, the BNSF mainline

Zoning: This site is zoned as Residential Estate (RE) until closer to the community of Lenwood near Barstow, where the zoning changes to General Industrial (GI) and Diverse Use (DU).

Existing Roadway Infrastructure: The site is accessible via Main Street/National Trails Highway or Lenwood Road from either I-15 or SR 58. I-15 connects Las Vegas and the Los Angeles Basin.

Other Factors Affecting Suitability: The Lenwood site is near Barstow and the BNSF Barstow rail yard. The site is crossed by several NHD flowlines and is primarily within an area of undefined flood hazard, although a small section is within a 100-year flood zone. Several areas north and south of the site contain federally and State-listed species and protected areas. The site is primarily in a rural part of San Bernardino County; however, closer to the Lenwood community, the area becomes more California High-Speed Rail Authority

developed, supporting residential and commercial development. This area also contains a known environmental justice community. Portions of the site are already owned by BNSF, with acquisition of the remaining portions of the site considered obtainable. The site is close to the existing Barstow rail yard (3.5 miles), which would permit connectivity to the yard's mechanical car, locomotive shop, and locomotive fueling platform. This site contains the largest acreage, as BNSF has requested acquisition of several adjacent parcels for support facilities. While this site meets all the site selection criteria and was previously considered one of the preferred options, BNSF recently noted that it has other uses for the property acquired in this area and would therefore like the Authority to consider other options.

4.5.7 Sites Carried Forward to Environmental Analysis

Following BNSF and Authority review of the potential site configurations for the potential staging track sites, both Potential Staging Tracks Site #2 (Victorville) and Potential Staging Tracks Site #5 (Hesperia) were determined to best meet the project's purpose and need while reducing environmental impacts and maximizing constructability.

These sites will be further analyzed as mitigation for construction and operational impacts on freight rail within the transportation section and appendix of the Draft EIR/EIS. This constraints-level analysis will evaluate each site within the context of the NEPA/California Environmental Quality Act resource areas. A demographic/environmental justice analysis of the potential staging track sites does not appear in this document, as it will be contained within the Draft EIR/EIS.

5 SUMMARY FINDINGS

The Authority’s screening analysis looked at approximately 170 square miles of area for potential IMF locations and approximately 2.4 square miles of area for potential staging track locations. The Authority identified six potential IMF sites and five potential staging tracks sites that could be alternatives to the BNSF-identified Colton IMF and Lenwood staging track sites. A summary of the findings is provided in Table 3 and Table 4.

The six potential IMF sites were screened for suitability as an alternative location for the BNSF-identified Colton IMF site using the criteria identified by BNSF. In addition to the screening criteria, the analysis considered other environmental and land use factors related to the sites’ suitability as an IMF location. All potential sites seem to meet the basic requirements for an IMF facility such as size, proximity to the mainline, and freeway accessibility. However, there were other environmental and land use factors, such as challenging topography, sensitive environmental conditions, or incompatible existing onsite or surrounding land uses, that appear to make them less than ideal for use as an IMF. None of the six potential IMF sites identified by the Authority were determined better suited for an IMF than the BNSF-identified Colton IMF site because they did not present conditions that were superior to those found at the Colton site, and in some cases presented additional issues.

Table 3 Potential Intermodal Facility Site Suitability Screening

Potential IMF Site	Size (acres)	Zoning	Proximity to Mainline (miles)	Nearest Highway	Other Factors
#1	390	SP-2015-1 (Anaheim Canyon Specific Plan)	0.05	SR 91	<ul style="list-style-type: none"> ▪ Portions in flood zone ▪ Part of flood control facility ▪ Proximity to Fullerton Junction
#2	265	SP-90-4 (Mountain Park Specific Plan)	0.52	SR 91	<ul style="list-style-type: none"> ▪ Hilly terrain ▪ NHD flowlines cross site and feed into Santa Ana River ▪ Requires construction of spur tracks across river and highway
#3	406	SP-91-02 (El Centro Specific Plan), M3/MR (heavy manufacturing–mineral resource)	1.5	I-15	<ul style="list-style-type: none"> ▪ Active mining site ▪ Steep terrain ▪ Wetlands adjacent to and within site ▪ NHD flowlines cross site
#4	528	PF (public facility)	1	I-215	<ul style="list-style-type: none"> ▪ Part of UCR campus ▪ Water channels cross site ▪ Areas within flood zone ▪ Requires construction of spur tracks across residential or university campus
#5	596	Light manufacturing and SP (Roquet Ranch Specific Plan)	0.24	I-215	<ul style="list-style-type: none"> ▪ Hilly terrain ▪ NHD flowlines cross site ▪ Within critical habitat ▪ Requires access across I-215

Potential IMF Site	Size (acres)	Zoning	Proximity to Mainline (miles)	Nearest Highway	Other Factors
#6	564	IH (heavy industrial and IL (light industrial))	Adjacent	I-215	<ul style="list-style-type: none"> ▪ Water channels bisect site ▪ Areas within flood zone ▪ Proximity to residential land uses and UCR ▪ Requires relocation of warehousing
BNSF-identified Colton IMF site	642	Non-designated area	0.27	I-10 and I-215	<ul style="list-style-type: none"> ▪ Located in areas of undetermined flood hazard and minimal flood hazard ▪ Adjacent to critical habitat

BNSF = BNSF Railway; I- = Interstate; IMF = intermodal facility; NHD = National Hydrography Dataset; SR = State Route; UCR = University of California, Riverside

Based on the suitability screening of the alternative sites compared to the BNSF-identified Colton site, the Authority concluded that the Colton site would provide the optimal location for the proposed IMF and that the alternative potential IMF sites were not as suitable as the Colton site. While this document identifies the rationale for the Authority’s selection of the BNSF-identified Colton IMF site, the Shared Passenger Track Alternative no longer proposed an IMF.

Similar to the screening process conducted for the potential IMF sites, the five potential staging tracks sites were screened for suitability as alternative locations for the BNSF-identified Lenwood staging tracks site using the criteria prescribed by BNSF. In addition to the screening criteria, the analysis considered other environmental and land use factors related to the sites’ suitability as a staging tracks site. All potential sites are outside and east of Cajon Pass and west (downstream) of the BNSF Mojave and Needles Subdivisions junction and appear to contain a sufficiently large area of level ground. The five sites, therefore, meet the basic requirements for siting staging tracks and had several similarities to each other.

Potential Staging Tracks Sites #1, #2, and #5 were similar to each other in terms of location and geography; however, the grade of Potential Staging Tracks Site #1 and the large amount of fill would make it unreasonable to build. Potential Staging Tracks Sites #3 and #4 were also similar in their geography and in their undesirable proximity to the Mojave River. The BNSF-identified Lenwood staging tracks site had undetermined flood hazards and was close to sensitive habitat. As the BNSF-identified Lenwood staging tracks site no longer meets BNSF’s purpose and need, the Authority, in coordination with BNSF, has selected Sites #2 (Victorville) and #5 (Hesperia) to be included in the environmental document as freight rail mitigation and subject to further environmental analysis.

Table 4 Potential Staging Tracks Site Suitability Screening

Potential Staging Tracks Site	Size (length/ acres)	Zoning	Nearest Road, Highway, or Interstate	Proximity to BNSF Employment Center (miles)	Other Factors
#1	20,126 feet/46	RR (rural residential) MR-EA (restricted manufacturing) I1 (limited manufacturing) M1 (light manufacturing) R3 (multifamily residential)	Ranchero Rd and Santa Fe Ave E	San Bernardino IMF: 32.4 Barstow IMF: 43.7	<ul style="list-style-type: none"> ▪ Currently only accessible via service road ▪ Undetermined flood hazard zone ▪ Overhead utilities ▪ Limited freeway access ▪ Large grade requiring fill ▪ Fairly distant from BNSF employment centers
#2	17,070 feet/39	C-2 (general commercial) M-1 (light industrial) M-2 (heavy industrial) IPD (industrial park)	Ridgecrest Rd and Bear Valley Rd	San Bernardino IMF: 39 Barstow IMF: 38.4	<ul style="list-style-type: none"> ▪ Redrawn for accessibility ▪ Minimal flood hazard zone ▪ NHD flow lines cross site ▪ Crosses existing land uses ▪ Limited freeway access ▪ Bordered by residential development ▪ Fairly distant from BNSF employment centers
#3	15,091 feet/35	RL (rural living) AG (agriculture)	National Trails Hwy	San Bernardino IMF: 58.6 Barstow IMF: 17.9	<ul style="list-style-type: none"> ▪ Minimal and undetermined flood hazard zone ▪ Limited freeway access ▪ Close to Mojave River and associated sensitive habitat
#4	20,160 feet/46	RL (rural living) AG (agriculture)	National Trails Hwy	San Bernardino IMF: 65.8 Barstow IMF: 10	<ul style="list-style-type: none"> ▪ Undetermined flood hazard zone ▪ Limited freeway access ▪ Close to Mojave River and associated sensitive habitat
#5	11.2 miles/108	OH/IN (Oak Hills/ Institutional) RS (single residential) RS-1 (single residential 1 acre minimum) City (Hesperia, Victorville)	Summit Valley Rd/Santa Fe Avenue E	San Bernardino IMF: 32.4 Barstow IMF: 38.4	<ul style="list-style-type: none"> ▪ Partially within undetermined flood hazard zone ▪ California Aqueduct crosses site ▪ Proximate to sensitive habitat ▪ Already proposed as staging tracks project by BNSF

Potential Staging Tracks Site	Size (length/ acres)	Zoning	Nearest Road, Highway, or Interstate	Proximity to BNSF Employment Center (miles)	Other Factors
BNSF-identified Lenwood staging tracks site	27,000 feet/848	RE (residential real estate) GI (general industrial) DU (diverse use)	I-15 and SR 58	San Bernardino IMF: 68.1 Barstow IMF: 3.5	<ul style="list-style-type: none"> ▪ Primarily within undefined flood hazard zone with small section within 100-year flood zone ▪ NHD flowlines cross site ▪ Proximate to sensitive habitat ▪ Land may no longer be available for staging tracks

BNSF = BNSF Railway; I- = Interstate; IMF = intermodal facility; NHD = National Hydrography Dataset; SR = State Route