

California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

Preliminary Impacts Assessment Report

May 2024



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.

California High-Speed Rail Project



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PRELIMINARY IMPACTS ASSESSMENT REPORT

May 2024

Prepared By:



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ACRONYMS AND ABBREVIATIONS

Amtrak	National Railroad Passenger Corporation
ARTIC	Anaheim Regional Transportation Intermodal Center
Authority	California High-Speed Rail Authority
BNSF	BNSF Railway
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EJ	environmental justice
EMI/EMF	electromagnetic field/electromagnetic interference
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTC	Fullerton Transportation Center
GHG	greenhouse gas
HSR	High-Speed Rail
HST	High-Speed Train
I-	Interstate
IMF	Intermodal Facility
LAUS	Los Angeles Union Station
LMF	light maintenance facility
LOSSAN Corridor	Los Angeles – San Diego – San Luis Obispo Rail Corridor
Metro	Los Angeles County Metropolitan Transportation Authority
mph	miles per hour
NOI	Notice of Intent
NOP	Notice of Preparation
OCTA	Orange County Transportation Authority
PA	Preferred Alternative
project section	Los Angeles to Anaheim Project Section
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>

1 INTRODUCTION

1.1 Report Purpose

This report has been prepared to identify and refine project alternatives for further study within the Draft Environmental Impact Report/Draft Environmental Statement (EIR/EIS) and provide justification for the staff's recommendation that the Board consider adopting a new Preferred Alternative (PA) for the Los Angeles to Anaheim Project Section. While the Shared Passenger Track Alternative was described within the 2023 Supplemental Alternatives Analyses (SAA), some design components, such as the intermediate station options, light maintenance facility (LMF), and grade crossing approach within Anaheim, required further evaluation. This report examines these components, within the context of the larger Shared Passenger Track Alternative, to support the adoption of a PA that will be identified within the Los Angeles to Anaheim Draft EIR/EIS. The EIR/EIS is being prepared pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

This staff report refers to the staff-recommended PA because it has not yet received California High-Speed Rail Authority (Authority) Board of Directors' approval. Following the adoption of the PA, the Draft EIR/EIS will identify the High-Speed Rail (HSR) Project Alternative as the State's PA. **Neither the staff report nor the Board concurrence on the recommendation constitutes a final decision by the Authority on adoption of the Shared Passenger Track Alternative A as a project.** Following the Draft EIR/EIS public comment period, the Authority will prepare a Final EIR/EIS after consideration of public comments and then decide whether to certify the Final EIR/EIS, establish necessary CEQA findings, propose that the Board authorize the CEO to sign a Record of Decision on the Final EIR/EIS, and take action to approve an alternative as the proposed project for the project section.

1.2 Preferred Alternative Approach

The Authority has developed a process to facilitate a more effective public comment period by identifying the PA in the Draft EIR/EIS, similar to the approach taken for other project sections within the California HSR System. This process will be followed in the project section. This adjustment aligns more closely with federal laws regarding the approval of transportation projects and with CEQA,¹ where the Draft EIR/EIS identifies and defines the proposed project (which is conceptually equivalent to a PA).

¹ Public Resources Code (21000-21189)

2 ALTERNATIVES EVALUATED AND PUBLIC INVOLVEMENT

2.1 Alternatives Development

After the Final Program EIR/EIS for the Proposed California High-Speed Train System (Statewide Program EIR/EIS) was adopted, the Authority, in cooperation with the FRA, began the environmental review process for the project section of the HSR System (Authority and FRA 2005). The environmental review process included a Notice of Intent (NOI) and Notice of Preparation (NOP), published in 2007, an agency and public scoping process in 2007, and revised scoping in 2020. The environmental review process resulted in several alternatives analysis reports being developed in consultation with public, federal, state, and local agencies, along with community stakeholders.

2.1.1 Statewide Program EIR/EIS (2005)

The Statewide Program EIR/EIS identified the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor (LOSSAN Corridor) as the preferred alignment for the project section, with passenger stations at Irvine, Anaheim, Norwalk/Santa Fe Springs, and Los Angeles Union Station (LAUS). While the Statewide Program EIR/EIS identified the preferred corridor as extending from Los Angeles to Irvine, the project EIR/EIS would concentrate on the section between Los Angeles and Anaheim, which is anticipated to be implemented initially. Alternatives analyzed in the Alternatives Analysis and SAAs are summarized below.

2.1.2 Los Angeles to Anaheim Alternatives Analysis Report (April 2009)

The 2009 Alternatives Analysis built upon the 2005 Statewide Program EIR/EIS, which identified alignment alternatives and station options between Los Angeles and Anaheim. The Alternatives Analysis examined the 2005 Program Level Shared-Track Alternative, Expanded Shared-Track Alternative, and Dedicated High-Speed Train (HST) Alternative, with considerations for stations and track configurations. The report excluded the Anaheim to Irvine subsection from detailed analysis. In 2007, during project scoping, the City of Fullerton requested that the Authority add a station at the Fullerton Transportation Center (FTC) and consider “skip-stop” scheduling, which would allow some trains to stop at Fullerton Station and others to stop at Norwalk/Santa Fe Springs Station (City of Fullerton 2007). The city’s request was based on potential ridership and connectivity to commuter rail stations, planned transit-oriented development, and availability of space around the station site to accommodate high-speed rail. The Authority acknowledged the request for the Fullerton Station by including it as an optional station along with the Norwalk/Santa Fe Springs Station within the 2009 Alternatives Analysis. In 2008, Proposition 1A was approved, which authorized the Authority to issue bonds to build a statewide high-speed train system. Proposition 1A prioritized providing funding toward building a new high-speed train between San Francisco to Los Angeles and Anaheim. After construction of the San Francisco to Los Angeles and Anaheim segments are funded, any surplus bond funds may be allocated toward the planning and construction of additional segments. Proposition 1A does not make any time commitments (and therefore does not require high-speed service) between Los Angeles and Anaheim.

Among these alternatives, the Dedicated HST Alternative was identified as the most suitable for meeting Phase 1 Service Plan requirements, accommodating future freight and passenger traffic. Detailed assessments were conducted for subsections and stations, with emphasis on capacity and performance. The Expanded Shared-Track and Program Level Shared-Track Alternatives were dismissed because of uncertainties regarding operational compatibility with other trains.

2.1.2.1 Program-Level Shared-Track Alternative

The Shared-Track Alternative selected during the Program-Level Environmental Analysis for the Los Angeles to Anaheim section was considered in the preliminary analysis of alternatives with modifications to its configuration. The Shared-Track Alternative assumed an at-grade alignment, with two tracks for freight trains and two tracks for shared passenger use.

2.1.2.2 Expanded Shared-Track Alternative

The Expanded Shared-Track Alternative would feature three tracks for freight trains, instead of two, for the subsection between Fullerton and Hobart Yard. The Expanded Shared-Track Alternative would require additional aerial structures compared to the Program-Level Shared-Track Alternative. The configuration of the Expanded Shared-Track Alternative would be the same as the year Program-Level Shared Track Alternative for the sections from Anaheim to Fullerton and Hobart Yard to LAUS.

2.1.2.3 Dedicated High-Speed Train Alternative

The Dedicated HST Alternative would run on two dedicated tracks and allow for at least six main tracks in the Fullerton to Hobart section of the corridor plus four main tracks from Fullerton to Anaheim. The Dedicated HST Alternative assumed a mostly at-grade alignment except in constrained areas where an aerial alignment option was considered to minimize right-of-way takes. From Fullerton to Hobart Yard, short tunnels and trenches were considered in light of special geographic or right-of-way constraints.

2.1.3 Los Angeles to Anaheim Supplemental Alternative Analysis Report (July 2010)

The 2010 SAA Report analyzed a Consolidated Shared-Track Alternative and a refined Dedicated HST Alternative, along with various alignment, station, and maintenance facility options. The report also included updates to account for refinements in design criteria. Both the Consolidated Shared-Track Alternative and the refined Dedicated HST Alternative were recommended to be advanced.

2.1.3.1 Consolidated Shared Track Alternative

The main design objective of the Consolidated Shared-Track Alternative was to accommodate all LOSSAN Corridor operators on a footprint smaller than the Dedicated HST Alternative and in a way that maximized the utility of the tracks for all corridor operators. The Consolidated Shared-Track Alternative featured two dedicated HST tracks from LAUS to Hobart, two passenger tracks plus three freight/passenger tracks from Hobart to Fullerton and reduced to two passenger tracks from Fullerton to Anaheim with night freight service. The Consolidated Shared-Track Alternative would follow an aerial structure on the south side of the LOSSAN Corridor right-of-way between Hobart Yard and Norwalk, and an at-grade cross section similar to the Dedicated HST Alternative from Norwalk to Fullerton. In the Montebello area, an at-grade or aerial configuration was considered. The 2010 SAA recommended that the Dedicated HST Alternative and Consolidated Shared-Track Alternative be carried forward.

2.1.4 Los Angeles to Anaheim Supplemental Alternative Analysis Report (April 2016)

The 2016 SAA Report presented the changes that had been made in response to comments and to new technical developments, including the phased implementation of the HSR system, and the implementation of a blended system that meets the goal of providing a one-seat ride from San Francisco to Los Angeles and Anaheim mentioned in the Revised 2012 Business Plan, the 2014 Business Plan, and the Draft 2016 Business Plan (Authority 2012, 2014, 2016). The 2010 Dedicated HSR Alternative was renamed Alternative 1 and the 2010 Consolidated Shared-Track Alternative was renamed Alternative 2.

2.1.4.1 Alternative 1

Alternative 1 would begin at LAUS and travel on an aerial structure between Commercial Street and Ducommun Street before descending to grade just before the First Street bridge. It would cross over First Street and continue north of the Fourth Street bridge where the alignment is at-grade. The alignment then continues south, adjacent to the Los Angeles River, to just south of Olympic Boulevard. South of Olympic Boulevard, the alignment would cross the Los Angeles River on an aerial structure and continue for approximately 6 miles. Alternative 1 would utilize at-

grade configurations through Montebello and just east of Interstate (I-) 605 in Santa Fe Springs, and from La Mirada to Fullerton, except for a short cut-and-cover tunnel near the Fullerton Airport. Along the right-of-way in Vernon and Commerce, the alignment would remain at grade, except when the alignment would ascend on an aerial structure to minimize any impacts on existing railroad activities. From Fullerton south toward Anaheim, Alternative 1 would remain at grade.

2.1.4.2 Alternative 2

Alternative 2 would begin at LAUS on an aerial structure between Commercial Street and Ducommun Street before descending to grade just before the First Street bridge. Alternative 2 would then run adjacent to and west of the existing Metrolink/National Railroad Passenger Corporation (Amtrak) tracks, immediately east of the Los Angeles County Metropolitan Transportation Authority (Metro) B (Red) line. It would follow the LOSSAN Corridor for several miles along the west bank of the Los Angeles River, before it turns to the east to cross the Los Angeles River and continue south. The alignment would continue to Vernon south toward Fullerton and utilize an at-grade configuration through Montebello and Pico Rivera, and from La Mirada to Anaheim. New bridges would be built over two existing water crossings: La Mirada Creek and Brea Creek. From Fullerton south toward Anaheim, Alternative 2 would remain at grade.

Because of higher capital costs, right-of-way impacts, and potential impacts on sensitive resources, the FRA and the Authority eliminated Alternative 1 from further consideration and Alternative 2 was identified to be evaluated in the EIR/EIS. The 2016 SAA recommended that Alternative 1 be withdrawn and Alternative 2 carried forward.

2.1.5 2016 Refinement Report

The 2016 Refinement Report evaluated refinements to the project section Alternative 2 that was advanced from the 2016 SAA Report. It recommended advancing the refined project alternative, Alternative 2R, for further evaluation in the project section EIR/EIS. The refinements 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 freight trains to use HSR tracks when necessary. These refinements provided two electrified tracks for HSR service and reduced the total number of mainline tracks needed to introduce HSR service within the LOSSAN Corridor.

2.1.5.1 Alternative 2R

Alternative 2R proposed enhancements for high-speed rail service in the LOSSAN Corridor from LAUS to Anaheim Regional Transportation Intermodal Center (ARTIC), including new and upgraded tracks, maintenance facilities, power systems, grade separations, stations, and more. It maintained four HSR stations: LAUS, Norwalk/Santa Fe Springs, Fullerton, and ARTIC. The track design combined at-grade, elevated, and below-grade sections based on corridor and design constraints. Unlike Alternative 2, Alternative 2R would concentrate passenger rail operations on HSR tracks, allowing separate tracks for freight rail, reducing the need for new tracks. Under Alternative 2R, however freight and HSR could share tracks, if necessary. Alternative 2R included up to two new tracks and realigned existing tracks, which resulted in four to five total tracks for most of the railroad corridor. Similar to Alternative 2, ancillary facilities (traction power substations, radio towers, etc.) would be installed adjacent to the right-of-way and would have required additional right-of-way. Alternative 2R was advanced forward for further analysis.

2.1.6 2018 High-Speed Rail Project Alternative

In 2017 and 2018, BNSF Railway (BNSF) provided operational modeling that showed the need for additional capacity during the construction and operations for this project section. This necessitated the addition of the BNSF staging tracks in Lenwood (Lenwood Component) and the Colton Intermodal Facility (IMF; Colton Component) within San Bernardino County. Authority modelers then independently verified the modeling results that established the need for both the BNSF Colton IMF and the staging tracks in Lenwood. As a result, these BNSF facilities were

identified as necessary project components, and referred to as the Colton and Lenwood Components. The Lenwood Component would have been necessary to stage freight trains outside the corridor so that rail activity can continue during HSR construction. Once HSR is operational, the Lenwood Component would have been necessary 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 was required because HSR operations would reduce capacity in the corridor. As such, an average of 10 freight trains per day from the Redondo Junction to Fullerton Junction would need to be accommodated outside the project corridor at the freight transfer facility in Colton. An additional benefit of the Colton Component was that the traffic to be served there was already originating and terminating in the Inland Empire, reducing truck movements between Hobart Yard and the Inland Empire. This would help maintain existing system on-time performance and reliability levels for freight rail service between Redondo Junction and Fullerton Junction. With the addition of the BNSF staging tracks needed outside of the project corridor, the alternative name was changed to the 2018 HSR Project Alternative (formerly called Alternative 2R) and additional scoping to obtain public and other stakeholder feedback and information for the environmental review process became necessary.

On November 15, 2018, the Authority Board of Directors identified the 2018 HSR Project Alternative as the PA for the Los Angeles to Anaheim Project Section (Authority 2018). The 2018 HSR Project Alternative would begin at LAUS and end at ARTIC with an intermediate station in Norwalk/Santa Fe Springs or Fullerton, or intermediate station at both locations. The 2018 HSR Project Alternative would include a combination of at-grade and aerial alignments. Though never fully defined, the alternative would also include an LMF, proposed along the west bank of the Los Angeles River, for servicing HSR trains. The LMF would include a crew building, truck loading docks, space for waste removal, and employee parking. The train speed would vary along the corridor, depending on design and land use constraints, from 45 miles per hour (mph) to 90 mph. Figure 2-1 illustrates the evolution of the 2018 HSR Project Alternative throughout the alternatives analysis process.

2.1.7 Los Angeles to Anaheim Supplemental Alternative Analysis Report (November 2023)

Stakeholder feedback on the BNSF Colton Component received following the Authority's revised scoping in 2020, discussed in more detail in Section 2.2, Public and Stakeholder Engagement, raised substantial opposition to and concern for introducing a new IMF far outside the project corridor. Interested parties in the Inland Empire expressed concerns about the Colton Component's environmental 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 waned, and BNSF no longer agreed to operate the Colton Component. For these reasons, the Authority considered additional alternatives that could eliminate the need to intercept trains and redirect trucks to a new IMF in San Bernardino County.

The 2023 SAA Report introduced three new build alternatives to address the project's purpose and need and response to concerns expressed on the 2018 HSR Project Alternative: The Shared Passenger Track Alternative, 3A – Freeway Tunnel Alternative, and 3B – UPRR Alignment Alternative. The SAA determined that the 2018 HSR Project Alternative would no longer be evaluated within the environmental analysis and identified the Shared Passenger Track Alternative to be evaluated further in the EIR/EIS.

2.1.7.1 3A – Freeway Tunnel Alternative

The 3A – Freeway Tunnel Alternative would follow the same alignment along the Los Angeles River as the 2018 HSR Project Alternative but would diverge just north of Washington Boulevard and mainly follow I-5 southeast to the project terminus at ARTIC in a tunnel alignment. 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 was 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. The corridor would be 30 miles in length, with 1.8 miles in right-of-way 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.

2.1.7.2 3B – Union Pacific Railroad Alignment Alternative

The 3B – UPRR Alignment Alternative would follow the same alignment along the Los Angeles River as the 3A – Freeway Tunnel Alternative but would diverge just north of 37th Street and follow the existing UPRR corridor. The alignment would continue south to Downey Road and run along Salt Lake Avenue. Continuing south over I-710 and run adjacent to Firestone Boulevard. The alignment would then follow I-5 southeast to the project terminus 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. The corridor would be 30 miles in length, with 1.8 miles in right-of-way owned by BNSF and 18 miles in right-of-way 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.

2.1.7.3 Shared Passenger Track Alternative

The Shared Passenger Track Alternative would follow the same alignment as the 2018 HSR Project Alternative but would not include the Colton or Lenwood Components. Unlike 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 and operations. Operationally, the Shared Passenger Track Alternative would reduce the peak service level for HSR trains to two trains per hour per direction. The Authority would build one additional mainline track within the corridor, and up to ten BNSF freight trains a day would be able to utilize the two passenger rail tracks (i.e., tracks are no longer dedicated for passenger rail service only). Two of the four mainline tracks would be electrified.

The Shared Passenger Track Alternative also proposes a LMF located at either 15th Street or 26th Street, consideration of none or one intermediate station in either Norwalk/Santa Fe Springs or Fullerton, and a new approach to grade crossings within Anaheim. An overview of the Shared Passenger Track Alternative is shown on Figure 2-2.

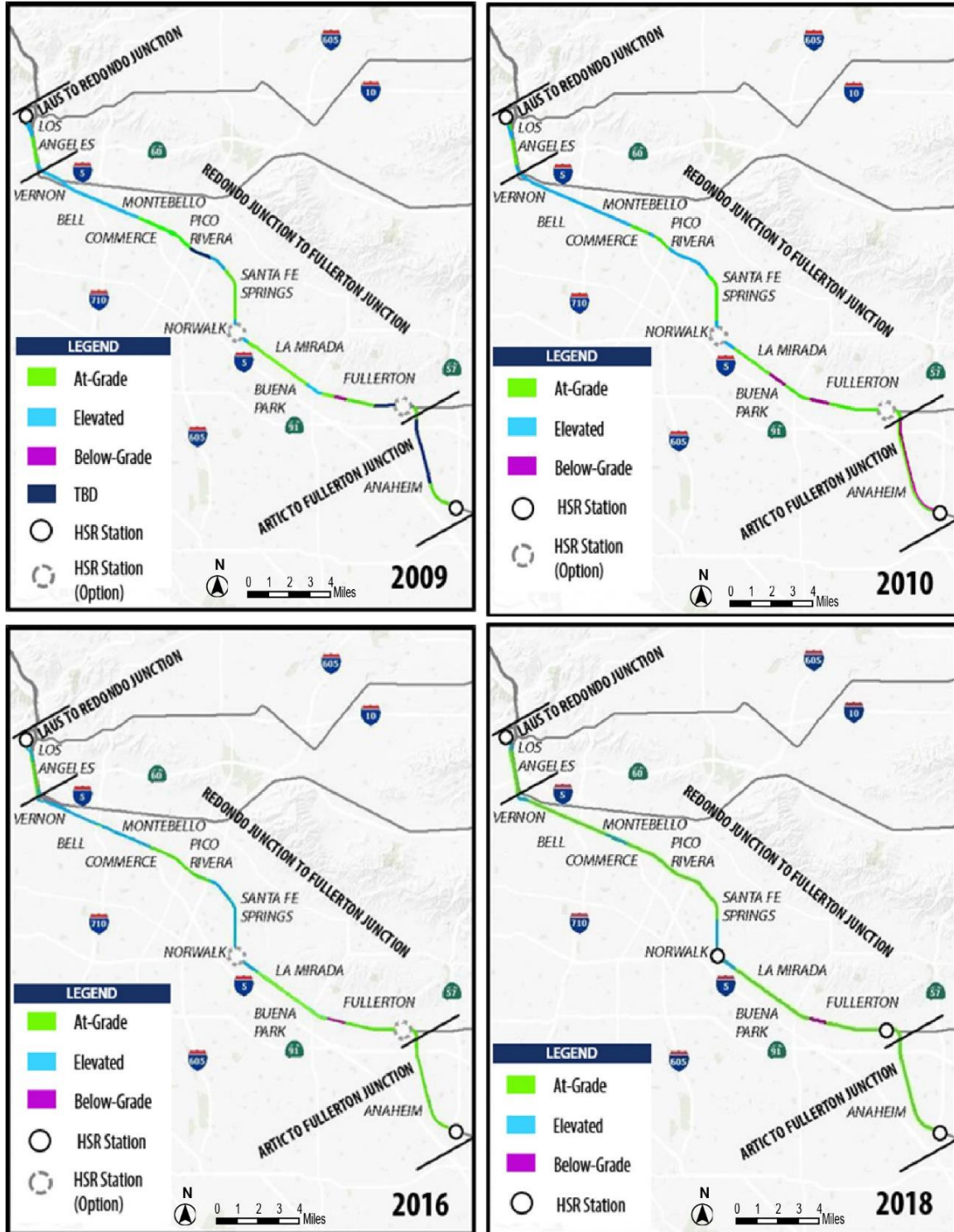


Figure 2-1 Graphical Representation of the Los Angeles to Anaheim Project Section Alternatives



Figure 2-2 Shared Passenger Track Alternative

2.2 Public and Stakeholder Engagement

2.2.1 Background

The Authority initiated revised scoping in 2020 to introduce the consideration of the Lenwood and Colton Components as part of the project section. This was to supplement the Authority’s initial scoping effort for the project section conducted in 2007, and subsequent outreach efforts for prior Alternatives Analysis, Supplemental Alternatives Analysis, Revised Supplemental Alternatives Analysis and Staff Recommended Preferred Alternatives Analysis which were developed between 2007 and 2019 and supported by comprehensive public outreach programs. The 2007 and 2020 scoping reports are available upon request. The Authority encourages written requests submitted via the Public Records Portal at [Public Records Act PortalNextRequest - Modern FOIA & Public Records Request Software](#).

Because of the 2019 novel coronavirus (COVID-19) pandemic, the 2020 revised scoping outreach program offered virtual opportunities to engage in compliance with health and safety precautions. The Authority conducted the project section scoping meetings virtually using the Zoom platform with language interpretation services and call-in options.

Following revised scoping in 2020, the Authority continued to meet with stakeholders to discuss the project, and receive feedback, while further studying and refining the BNSF components and the PA. During this effort, stakeholders and community members raised substantial opposition to and concern about introducing a new IMF far outside the project corridor. In particular, Inland Empire stakeholders expressed concerns post-scoping about the Colton Component’s impacts when the benefits of HSR and the associated improvements would not reach them.

Both agency and community stakeholders cited increased truck traffic and impacts on air quality, as well as concern that the facilities would lead to disproportionately high and adverse effects on disadvantaged communities surrounding the proposed IMF or adjacent to neighboring roads and highways (Authority 2023a).

Due in part to consensus among stakeholders, the Authority began exploring other options to mitigate the impacts of the HSR project to BNSF and other rail operators and thereby avoid necessitating a new IMF in the Inland Empire.

2.3 Summary of Outreach Supporting Revised Scoping and Follow-Up Coordination

Table 2-1, Table 2-2, and Table 2-3 provide a summary of the key stakeholder meetings conducted in preparation for the 2020 scoping meeting series and follow-up engagement efforts.

Table 2-1 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	Los Angeles to Anaheim Legislative Group Briefing #1
10.	6/11/20	Los Angeles to Anaheim Legislative Group Briefing #2
11.	1/14/21	San Bernardino County Supervisor Curt Hagman and Staff Briefing
12.	1/15/21	San Bernardino County Supervisor Joe Baca, Jr. and Staff Briefing
13.	2/16/21	San Bernardino County Supervisor Dawn Rowe: Staff Briefing
14.	2/26/21	Assemblymember Eloise Reyes (District 47): Staff Briefing
15.	3/09/21	Los Angeles County Supervisor Janice Hahn (District 4): Staff Briefing
16.	3/26/21	Assemblymember Tom Daly (District 69): Staff Briefing
17.	4/28/21	Assemblymember Lisa Calderon (District 56): Staff Briefing
18.	5/11/21	San Bernardino County Supervisor Paul Cook

Table 2-2 City and Agency Coordination

#	Date	Meeting
1.	1/9/19	City of Pico Rivera: Staff Briefing
2.	2/6/19	City of Commerce: Staff Briefing
3.	2/6/19	City of Vernon: Staff Briefing

#	Date	Meeting
4.	2/12/19	City of Anaheim: Staff Coordination Meeting (Grade Separations)
5.	2/13/19	City of Montebello: Staff Briefing
6.	3/6/19	City of La Mirada: Staff Briefing
7.	3/12/19	City of Norwalk: Staff Briefing
8.	4/26/19	City of Santa Fe Springs: Coordination Meeting
9.	8/23/19	California Department of Transportation District 12: Briefing
10.	10/1/19	City of Fullerton: Staff Briefing
11.	11/1/19	SBCTA: Executive Director Briefing
12.	11/13/19	City of Norwalk: Staff Briefing
13.	11/21/19	SBCTA: Executive Director Briefing
14.	12/4/19	City of Anaheim: Staff Briefing
15.	12/9/19	County of San Bernardino Office of Chief: Executive Officer Briefing
16.	12/9/19	City of Barstow: Staff Briefing
17.	12/10/19	City of Colton: Staff Briefing
18.	12/11/19	City of Pico Rivera: Staff Briefing
19.	12/19/19	City of Grand Terrace: Staff Briefing
20.	1/15/20	Orange County Transportation Authority: Staff Briefing
21.	1/29/20	City of Anaheim: Staff Briefing
22.	2/10/20	City of Anaheim: Staff Briefing Anaheim Regional Transportation Intermodal Center walk-through
23.	2/24/20	City of Colton: Staff Briefing
24.	3/10/20	City of Colton Railroad Subcommittee: Briefing
25.	3/10/20	San Bernardino County Public Works: Briefing
26.	4/29/20	Riverside County Transportation Commission: Executive Director Briefing
27.	5/6/20	SBCTA Board of Directors: Presentation
28.	5/19/20	SBCTA Workshop #1 Kickoff Meeting
29.	6/16/20	Colton Railroad Subcommittee: Staff Briefing
30.	6/17/20	Gateway Cities High-Speed Rail Technical Advisory Committee Briefing
31.	6/23/20	SBCTA Workshop #2 Transportation Analysis Methodology
32.	6/30/20	City of Jurupa Valley: Staff Briefing
33.	7/7/20	City of Anaheim: Staff Briefing
34.	7/7/20	City of Buena Park: Staff Briefing
35.	7/7/20	City of Fullerton: Staff Briefing
36.	7/9/20	City of Colton: Staff Briefing
37.	7/14/20	County of San Bernardino: Staff Briefing

#	Date	Meeting
38.	7/23/20	City of Buena Park: Staff Briefing
39.	9/2/20	City of Colton: Staff Briefing
40.	9/17/20	City of Rialto: Staff Briefing
41.	10/5/20	City of Barstow: Staff Briefing
42.	10/27/20	SBCTA Workshop #3 Air Quality Methodology
43.	11/16/20	County of San Bernardino: Staff Briefing
44.	11/19/20	City of Rialto: Staff Briefing
45.	11/24/20	City of Colton: Staff Briefing
46.	1/11/21	Gateway Cities Council of Governments: Staff Briefing
47.	1/12/21	City of Colton Bill Smith, City Manager (review air quality and transportation)
48.	2/4/21	San Bernardino County Transportation Authority/City of Colton staff
49.	2/8/21	SBCTA, City of Colton and CA Assembly Member Reyes Workshop #4 Noise, Vibration and Aesthetics Methodology
50.	2/10/21	City of Anaheim: City Manager Briefing
51.	2/19/21	City of Riverside: Briefing
52.	2/19/21	San Bernardino County Equity Element
53.	3/16/21	California Air Resources Board: Briefing
54.	6/15/21	City of Barstow: Mayor & Staff Briefing
55.	6/22/21	California Transportation Commission: Briefing
56.	7/28/21	City of Grand Terrace: Staff Briefing
57.	5/2/22	California Department of Transportation: Briefing
58.	6/28/22	City of Barstow: Staff Briefing
59.	7/19/22	City of Vernon: Briefing
60.	7/22/22	South Coast Air Quality Management District: Briefing
61.	9/9/22	Metro & City of Santa Fe Springs: Briefing
62.	12/20/22	Orange County Transportation Authority: Briefing

SBCTA = San Bernardino County Transportation Authority

Table 2-3 Key Stakeholders

#	Date	Meeting
1.	1/22/19	Commerce Industrial Council Chamber of Commerce: Presentation
2.	2/21/19	San Gabriel Valley Council of Governments Transportation Committee: Briefing
3.	11/20/20	Inland Empire Economic Development Partnership: Briefing
4.	11/24/20	Orange County Business Council: Briefing
5.	12/4/20	San Bernardino-Riverside Building Trades Council: Briefing
6.	7/16/20	Los Angeles to Anaheim Stakeholder Working Group

#	Date	Meeting
7.	1/29/21	OC V!BE/Honda Center: Briefing
8.	2/04/21	Los Angeles/Orange County Building and Trades Council
9.	3/09/21	Orange County Business Council Infrastructure Committee
10.	3/17/21	Orange County Hispanic Chamber of Commerce
11.	3/17/21	Riverside Chamber Monday Morning Group: Briefing
12.	3/24/21	Anaheim Transportation Network: Presentation
13.	4/9/21	Inland Empire Community Foundation: Briefing (environmental justice)
14.	7/13/22	Orange County Business Council
15.	7/30/21	Arrowhead Regional Medical Center: Briefing
16.	9/5/21	Inland Empire Regional Chamber of Commerce
17.	10/8/21	MoveLA: Briefing
18.	12/21/22	OC V!BE: Briefing

2.4 Summary of Outreach on the 2023 Supplemental Alternatives Analysis

Upon the release of the SAA in November 2023, the Authority initiated a public outreach program to share information and receive feedback utilizing a variety of tactics. The public outreach program focused on sharing the details about the Shared Passenger Track Alternative and the proposed changes from the 2018 HSR Project Alternative. Information was shared throughout the project area, with emphasis in communities where there are proposed project changes, including: the proposed LMF located at either 15th Street or 26th Street (cities of Los Angeles and Vernon), consideration of No Intermediate Station (cities of Norwalk, Santa Fe Springs, and Fullerton), Norwalk/Santa Fe Springs Intermediate Station Option (cities of Norwalk and Santa Fe Springs) or Fullerton Intermediate Station Option (city of Fullerton), and a new approach to grade crossings in Anaheim (city of Anaheim).

Additionally, the Authority reached out to the cities, counties, transportation planning agencies, elected offices and leaders/organizations, representing a variety of sectors within the project area. As conducted for prior project milestones, the Authority hosted the project section Legislative/Elected (Staff) Group Briefing and the Stakeholders Working Group, with supplemental one-on-one coordination meetings provided upon request (Authority 2023c). Table 2-4, Table 2-5, and Table 2-6 provide summaries of agencies and key stakeholder engagements for the project section.

Table 2-4 Elected Official Briefings and Legislative Group Briefings

#	Date	Meeting
1.	10/25/23	Group Legislative Briefing: Main Corridor Cities, east of Fullerton and Staging Track region
2.	12/15/23	Office of Kevin de Leon, Los Angeles Council District 14: Staff Briefing

Table 2-5 City and Agency Engagements

#	Date	Meeting
1.	4/24/23	City of Fullerton: Coordination Meeting
2.	10/31/23	Los Angeles Metro Rail: Staff Briefing
3.	11/1/23	Coordinating Agencies: Staff Briefing
4.	11/15/23	San Bernardino County Transportation Authority: Staff Briefing
5.	11/15/23	South Coast Air Quality Management District: Staff Briefing
6.	11/15/23	Riverside County Transportation Commission: Staff Briefing
7.	11/21/23	Metrolink: Staff Briefing
8.	12/4/23	City of Anaheim: Staff Briefing
9.	12/14/23	Orange County Transportation Authority: Staff Briefing
10.	12/21/23	Southern California Association of Governments Coordination Meeting
11.	1/16/24	City of Fullerton: Staff Briefing
12.	2/14/24	Metro: Staff Coordination Meeting
13.	2/16/24	Orange County Transportation Authority: Coordination Meeting
14.	2/22/24	City of Pico Rivera: Staff Briefing
15.	5/8/24	City of Hesperia: Staff Briefing

Metro = Los Angeles County Metropolitan Transportation Authority

Table 2-6 Stakeholder Working Group Engagement

#	Date	Meeting
1.	11/8/23	Stakeholder Working Group Meeting

To share information with the public and receive feedback the Authority offered a variety of opportunities. These engagement opportunities included:

- Virtual Open House
- Virtual Information Sessions (two) focused on the proposed LMF at 15th Street and 26th Street
- Joint Virtual Information Session with Caltrans focused on the proposed staging tracks mitigation in Hesperia/Victorville
- In-person Information Sessions in Norwalk/Santa Fe Springs and Fullerton focused on the intermediate stations, and in Anaheim focused on grade crossings
- Activity center outreach in the form of information booths/tables in environmental justice (EJ) communities
- Office Hours and Phone Hotline
- E-Communications: email blasts and social media posts
- Post Mail Notices (English, Spanish, Korean, Tagalog) to residents and businesses along the proposed project footprint, consistent with previous PA and Scoping efforts
- Additional Door-to-Door Notices in EJ Communities (English, Spanish, Korean, Tagalog)

- Newspaper Advertisements (English, Spanish, Armenian, Chinese, Korean, Tagalog, Vietnamese)

During public meetings (Open House Meeting and Information Sessions) simultaneous interpretation in Spanish, Korean and Tagalog was made available where needed. For events in the Hesperia/Victorville region, simultaneous interpretation in Spanish was made available. American Sign Language was also provided at in-person public meetings and closed captioning featured during virtual public meetings. Additionally, interpretation and translation services were also available upon request in Vietnamese, Chinese/Mandarin and Armenian.

Throughout the series of public engagement activities, project staff addressed questions related to stations and connectivity, noise and vibration, property impacts, traffic and circulation, safety, and opportunities for the public to comment on the Project. Table 2-7 and Table 2-8 provide a summary of the public engagement activities conducted within the Los Angeles to Anaheim High-Speed Rail Project Section.

Table 2-7 Public Engagement

#	Date	Meeting
1.	11/29/23	Supplemental Alternatives Analysis Virtual Open House
2.	12/05/23	Southern California Light Maintenance Facility – 26th Street Option Virtual Information Session
3.	12/06/23	Southern California Light Maintenance Facility – 15th Street Option Virtual Information Session
4.	12/07/23	Anaheim Grade Crossings Information Session
5.	12/11/23	Norwalk/Santa Fe Springs Intermediate Station Option and Santa Fe Springs Grade Crossings Information Session
6.	12/14/23	Fullerton Intermediate Station Option and Orangethorpe Crossing Information Session
7.	4/3/24	High Desert Staging Tracks Mitigation Virtual Information Session

Table 2-8 Environmental Justice Engagement

#	Date	Meeting
1.	11/18/23	City of Commerce Turkey Trot Activity Center: Information Booth
2.	11/22/23	Fullerton Farmer’s Market: Information Booth
3.	11/25/23	Whittier Neighborhood Information Table: Pop Up
4.	12/02/23	Santa Fe Springs Tree Lighting: Information Booth
5.	12/03/23	Anaheim Tree Lighting: Information Booth
6.	12/08/23	Las Posadas in Santa Fe Springs: Information Booth
7.	3/21/24	Victorville Farmers Market

2.5 Summary of Stakeholder Feedback

Stakeholder input is an important part of the Authority’s process in identifying the reasonable range of alternatives for further evaluation in the NEPA and CEQA environmental processes. As part of this process, the Authority continues to coordinate with a variety of stakeholders, local

governments, and organizations to obtain input on the 2023 SAA and the Shared Passenger Track Alternative. Stakeholder feedback was gathered through various methods during public meetings, including verbal contributions during question-and-answer sessions, interactive discussions at information stations, and written input via comment cards and online forms.

With regard to a preference between the two proposed Southern California LMF sites (15th and 26th Street), stakeholders that represented different areas along the corridor did not express a considerable preference toward a specific location. Regarding a potential intermediate station, residents attending the information sessions for both Norwalk/Santa Fe Springs and Fullerton expressed interest in having a station in their communities. Community opinion was mixed on the adequacy of current passenger train service between Los Angeles and Anaheim. While some stakeholders agreed that introducing HSR in the area will help improve connection, especially on the weekends, others stated there were currently other services such as Metrolink and Amtrak trains that stopped at these stations. Feedback was provided supporting additional connectivity and identifying interagency collaboration as key to improving mobility along the corridor. Most stakeholders also seemed to understand the efficiencies gained by adding none or only one, and not both intermediate stations. Feedback related to the proposed approach to Anaheim grade crossings was met with support as stakeholders and members of the public expressed relief over the reduced impacts on properties and the surrounding community associated with leaving crossings at grade.

A general sentiment from those engaged was that HSR is an important investment in empowering Californians to be car-free, especially for people with disabilities, the elderly, the youth, and people who cannot afford or do not want to drive vehicles. Residents and business owners in both meetings shared their enthusiasm for the economic and connectivity benefits that the HSR program could bring to their communities. While there is an interest in bringing HSR into the region, stakeholders are concerned about the potential impacts (property acquisition, noise, vibration, air quality, and traffic), that construction could cause and are interested in learning about the mitigation measures that will be studied during the environmental process. Additionally, competitive pricing is an important factor for the community to consider utilizing the train instead of other modes of transportation.

Categories of interest included, air quality, future funding, property acquisitions and impacts, and safety. Other key themes and comments received via the series of engagement activities include the following:

2.5.1 Southern California Light Maintenance Facility

- Interest in the LMF options and their impact on surrounding operations when crossing BNSF tracks and potential impacts on the Arts District (Metro)

2.5.2 High-Speed Rail Intermediate Station: Fullerton Meeting

- Interest in HSR Fullerton Station
- Pedestrian bridge accommodations requested
- Additional parking requested

2.5.3 High-Speed Rail Intermediate Station: Norwalk/Santa Fe Springs and Grade Separations Meeting

- Interest in HSR Norwalk/Santa Fe Springs Intermediate Station Option
- Better transit connectivity requested between the Los Angeles Metro Norwalk C Line Station and Norwalk/Santa Fe Springs Station
- Quiet zone² requested (Pioneer Boulevard and Rivera Road)

² A quiet zone is a section of a rail line at least one-half mile in length that contains one or more consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded when trains are approaching crossings (FRA 2013).

- Sound walls requested to control the impact of additional noise

2.5.4 Anaheim Grade Crossing

- Preference for eliminating street closures to better protect pedestrian traffic
- Grade separation at Orangethorpe Avenue requested
- Safety improvements requested at Ball Road
- Concerns about traffic impacts and mitigation measures during construction
- A closure/pedestrian grade separation at Sycamore Street encouraged to slow down traffic

2.5.5 Staging Tracks

- While the staging tracks are planning to use the existing railroad right-of-way, stakeholders expressed concerns about increased noise levels that may affect the surrounding neighborhoods.

2.6 Next Steps

The Authority will continue public outreach through the release of the draft environmental documents, expected in the fall of 2024. Additional engagement will include a series of stakeholder briefings, offered presentations and office hours, community activity events as well as virtual and in-person public meetings and hearings.

3 EVALUATION CRITERIA AND METHODOLOGY

The purpose of this section is to describe the evaluation criteria used to support the staff recommended PA. This effort follows a defined alternatives 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 5.11, adopted in June 2022 (Authority 2022).

3.1 High-Speed Rail Performance Criteria and Design Objectives

In addition to assessing the purpose and need, project alternatives are evaluated using system performance criteria that address design differences and qualities, while aligning with the goals of the 2023 Project Update Report. Design objectives and criteria are described in Table 3-1.

Table 3-1 Design Objectives and Criteria

Objective	Criteria
Maximize ridership/revenue potential	Travel time Population and employment catchment
Maximize connectivity and accessibility	Intermodal connections
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)

Source: Authority 2011

3.2 Evaluation Measures

This report evaluates the project components and design options to be carried forward in the Los Angeles to Anaheim Project Section Draft EIR/EIS by comparing them across multiple criteria, as described below. The Authority has balanced important factors that differentiate across each component and design option. In addition to the HSR objectives and criteria above, this report measures, evaluates and compares the project alternatives in terms of anticipated environmental impacts and potential feasibility constraints as described in Table 3-2. Estimates are provided where measurements can be quantified, however, qualitative assessments are provided where effects cannot be quantified.

Table 3-2 High-Speed Rail Alternatives Analysis Evaluation Measures

Measurement	Method
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 right-of-way	Extent of feasible access to alignment for construction
Minimize disruption to existing railroads	Right-of-way constraints and impacts on existing railroads
Minimize disruption to and relocation of utilities	Number and type of utilities crossed, (gravity/pressure, private or public owned)

Measurement	Method
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 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
Maximize compatibility with existing and planned development	Land use compatibility Visual environment compatibility
Minimize effects on station planning, land use, and development	Evaluate existing development patterns and local land use policies and station design to determine consistency with any relevant plans
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
Property with access affected	Number of properties where access is affected and to what extent
Safety and security	Identify safety and security considerations for employees, passengers, and the public from HSR-related activities and for emergency responders to respond to incidents
Socioeconomics and communities	Evaluates potential impacts and benefits on existing communities adjacent to the project, socioeconomic conditions, and important community facilities
Environmental justice (a socioeconomic effect)	Identify disproportionately high and adverse environmental and health impacts on minority and low-income populations
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
Minimize impacts on cultural resources	Archaeological resources Historic resources Tribal resources potentially affected
Parks, recreation, and open space	Estimate number of existing or proposed parks that could be directly and indirectly affected. This would also include existing or proposed trails that would be crossed
Agricultural farmland and forest land	Estimate acres of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance within preliminary limits of disturbance
Air quality and GHG emissions	Identify air quality and climate resources and GHG emissions within the region and any impacts on sensitive receptors
Hydrology and water quality	Identify potentially affected water resources including surface waters, associated floodplains, and groundwater
EMI/EMF	Identify if EMF disrupts operation of an electronic device when it is in the vicinity of an EMI in the radio frequency spectrum of another device

Measurement	Method
Public utilities and energy	Identify utility conflicts to avoid utility relocations. Identify energy usage anticipated during construction and operation
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
Change in visual quality/scenic resources/aesthetics	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
Traffic/transportation	Identify mobility options and constraints and identify and assess the traffic conditions and changes that may occur during construction and operation
Section 4(f)/6(f) resources	Identify potentially affected publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites
Natural Environment	
Maximize avoidance of areas with geological and soils constraints	Potential direct impacts on sensitive geologic and soils areas
Maximize avoidance of areas with potential hazardous material	Potential direct impacts on areas containing hazardous materials or wastes

EMF = electromagnetic field; EMI = electromagnetic interference; GHG = greenhouse gas; TOD = transit-oriented development

When considering the relative level of impacts and ranking of design options, a qualitative assessment of environmental impacts may consider the size of the sites being compared. For example, a site or an option that requires a larger footprint than another site may require additional ground disturbance for construction, which could also result in greater direct impacts on stormwater flow, cultural resources impacts affecting potential resources, or larger costs for construction. Relative size of the options, operational or construction requirements, long-term and short-term level of impacts, and existing site conditions and constraints are some of the differential factors influencing the identification of a PA regarding environmental impacts. For example, as construction and its associated impacts are generally temporary, longer-term effects may be weighed as more impactful for some topics because of the longer, more permanent nature of the impact.

4 EVALUATION OF ALTERNATIVES

The 2023 SAA for the project section evaluated five alternatives, including a No Project Alternative, and recommended a new alternative, the Shared Passenger Track Alternative, to be carried forward for further refinement and evaluation within a Tier 2, project-level EIR/EIS. While the SAA demonstrated that the Shared Passenger Track Alternative performed better than the other alternatives based on the evaluation criteria, minimizing environmental impacts, and maximizing ridership, some design options, and components were not fully developed within the document. This report further evaluates and refines the Shared Passenger Track Alternative with consideration of the grade crossing approach within Anaheim, LMF site options, and the inclusion of potential intermediate stations within the project section.

There are currently 14 at-grade crossings along the project corridor between Los Angeles and Anaheim, with 10 within Anaheim. This report reviews federal and local requirements for implementation of road and railway grade separations and compares the potential environmental impacts of proposed grade crossing approaches in Section 4.2.3, Environmental Impacts.

A Level III LMF is needed within the LAUS vicinity (to be called the Southern California LMF). This led to the identification of two potential LMF sites for further study: an LMF at 15th Street, along the west bank of the Los Angeles River, and an LMF at 26th Street, adjacent to BNSF Hobart Yard. The environmental effects of each LMF option are analyzed in Section 4.3.4, Environmental Impacts.

Previous project alternatives proposed two HSR stations, LAUS and ARTIC, and at least one intermediate station at Norwalk/Santa Fe Springs or Fullerton. The Burbank to Los Angeles Project Section, which included LAUS, was environmentally cleared in 2022, and therefore LAUS will not be environmentally analyzed in the Los Angeles to Anaheim Project Section. In 2014, OCTA and Anaheim finished constructing ARTIC. The Authority proposes modifications to the existing ARTIC station with two new HSR tracks, a single 1,410-foot center platform for HSR south of and parallel to the existing Metrolink/Amtrak tracks and platforms, and a new parking structure. It was never determined whether both or only one intermediate station would be built, and it was assumed that trains would stop at either station but not both. Additionally, based on findings from the environmental analysis, interested party input, cost, ridership projections, and feasibility of construction, one or neither intermediate station (i.e., Fullerton or Norwalk/Santa Fe Springs) could be recommended for construction under the Shared Passenger Track Alternative. The environmental effects of having a station at only Norwalk/Santa Fe Springs, only Fullerton, or no intermediate station is analyzed in Section 4.4.4, Environmental Impacts.

4.1 Differential Factors Influencing Identification of a Preferred Alternative

4.2 Anaheim Grade Crossings

4.2.1 Background

4.2.1.1 *Statutory and Regulatory Framework*

The United States has multiple levels of regulatory oversight with regards to grade crossings and the construction and operation of its rail-based systems. However, there are no legal requirements to separate grade crossings at the federal, state, or local level for rail speeds of 125 mph or lower. Operations within the Los Angeles corridor will maintain speeds at or below 90 mph and align with those of other operators. The Authority’s updated approach to grade crossings reflects the following agency/regulatory considerations.

Federal Railroad Administration

The FRA only mandates grade separations when passenger speeds exceed 125 mph. For trains moving at speeds of 111 to 125 mph, the FRA permits at-grade crossings where an “impenetrable barrier” is installed to block highway traffic when a train approaches. For trains moving at 110 mph or less, at-grade crossings are permitted.

The FRA issued the following guidance for train moving at speeds 110 mph or less: states and railroads should cooperate to determine the needed warning devices, including passive crossbucks, flashing lights, two quadrant gates (close only “entering” lanes of road), long gate arms, median barriers, and various combinations. Lights and/or gates are activated by circuits wired to the track (track circuits). The FRA advocates the use of a “Sealed Corridor” approach so that every crossing is evaluated and treated appropriately.³

The maximum allowable speed for HSR trains between Fullerton Station and ARTIC Station is 90 mph (based on design and safety features). All passenger train speeds along the project corridor, including HSR, will be less than 90 mph and would therefore not invoke any grade separation requirements.

California Public Utilities Commission

At the state level, the California Public Utilities Commission evaluates all grade crossings on an individual basis through a diagnostic process that involves all stakeholders.

Although there is no statutory requirement, the California Public Utilities Commission typically recommends a grade separation when any project adds new railroad track to an existing crossing and is unlikely to approve an at-grade crossing with more than three tracks. Based on the Authority’s experience with a wide variety of crossings throughout California, the Authority generally designs a grade separation for any crossing with four or more rail tracks, though this may vary depending on train speeds, roadway volumes, accident history, and other factors. All grade crossings between Los Angeles and Fullerton will be modified to include at least four tracks, and therefore will be grade separated. Many of the previously proposed grade separations within the City of Anaheim will only include two tracks and are therefore being reconsidered within this document.

4.2.1.2 Overview of 2018 High-Speed Rail Project Alternative Anaheim Grade Crossings

As a relic of the original Statewide Program EIR/EIS, the 2018 HSR Project Alternative proposed to study a mostly grade-separated alignment. Within Anaheim, this included nine grade separations (Santa Ana Street to remain at-grade) with two street closures. The proposed roadway crossings and configurations for the 2018 HSR Project Alternative within Anaheim are shown in Table 4-1. A draft Preliminary Engineering for Project Definition detailing these proposed crossings was submitted to all corridor cities, including Anaheim, in 2020. Given the close distance between grade crossings, dense development, and concerns about community disruption and safety, the City of Anaheim asked the Authority to consider alternate approaches at some crossings. The City of Anaheim explicitly expressed concerns related to:

- Historic neighborhoods and resources: proposed crossings at La Palma, Broadway, and Vermont Avenue would affect historic resources and neighborhood preservation efforts.
- Impacts on established communities: the South Street closure and Vermont Avenue grade separation would affect the Avon-Dakota Neighborhood. This neighborhood is one of 12 “challenged” neighborhoods within the city and has been a target of the city’s efforts to create more affordable housing.
- Displacements and property impacts: the city was generally concerned with the large footprint of grade separations and the residential and business displacements that would result from construction and operation of the structures.

³ See FRA Highway-Rail Grade Crossing Resource Guide, [PowerPoint Presentation \(dot.gov\)](#)

Table 4-1 2018 Proposed Anaheim Roadway Crossing Configurations

Roadway	Current Crossing Configuration	Proposed Crossing Configuration with the 2018 HSR Project Alternative
Orangethorpe Avenue	At grade	Undercrossing
La Palma Avenue	At grade	Undercrossing
Sycamore Street	At grade	Closed
Broadway	At grade	Undercrossing
South Street	At grade	Closed
Santa Ana Street	At grade	At grade
Vermont Avenue	At grade	Undercrossing
Ball Road	At grade	Undercrossing
E Cerritos Avenue	At grade	Undercrossing
State College Boulevard	At grade	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 high-speed rail and will occur with or without the implementation of the HSR Project Alternative. HSR = high-speed rail; overcrossing = road over train tracks; undercrossing = road under train tracks

4.2.1.3 Overview of Shared Passenger Track Alternative Anaheim Grade Crossings

During the design of the Shared Passenger Track Alternative, the Authority considered the City of Anaheim’s concerns and reevaluated its approach to grade crossings within the city. The Authority’s revised approach also reflects the following considerations:

- All passenger trains within the corridor, including HSR, would not exceed speeds of 90 mph and therefore crossings would not be required to be grade separated per FRA regulations;
- The Shared Passenger Track Alternative would have reduced operations (two trains per direction, per hour at peak) compared with the 2018 HSR Project Alternative;
- HSR would not build additional mainline track within the Fullerton-Anaheim corridor;
- OCTA owns the existing Fullerton-Anaheim corridor and would continue to own it once HSR service begins;
- OCTA recently upgraded existing at-grade crossings to meet FRA “quiet zone” standards, which includes safety improvements such as quad gates, median barriers, and pedestrian safety features;
- Residents and stakeholders expressed concerns during outreach activities over street closures and potential displacements associated with grade separations;
- Construction of all the 2018 HSR Alternative proposed Anaheim grade separations would add an additional \$375,600,000⁴ to the HSR project cost; and
- The Authority’s desire to maintain a consistent approach to grade crossings within shared/blended corridors with other HSR project sections.

As shown in Table 4-2, the Shared Passenger Alternative proposes that eight at-grade crossings within Anaheim remain at grade and that no streets shall be closed. No major modifications are expected at the crossings proposed to remain at grade, as they have already been updated with

⁴ This number would continue to increase about 5 percent annually until construction can begin in future years.

additional safety features and currently operate as quiet zones. Since the quiet zones have been in effect, the area has seen a reduction in highway-rail incidents from four in 2019 to one in 2021.

Table 4-2 Proposed Design Assumptions (2023 Shared Passenger Track Alternative) for Anaheim Grade Crossings

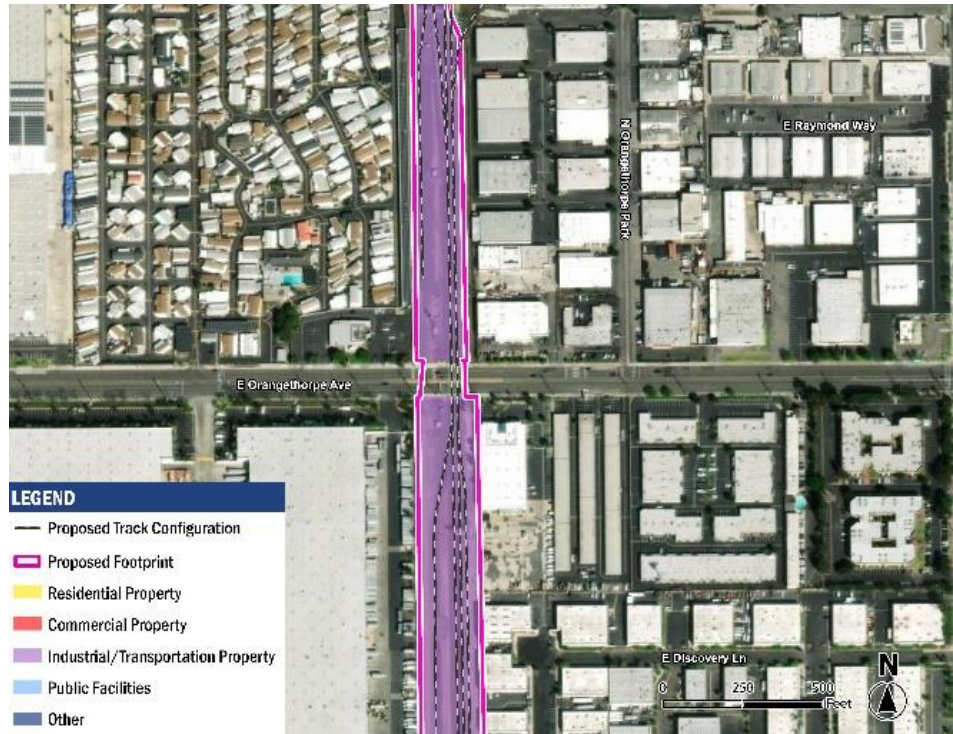
Roadway	Current Crossing Configuration	Proposed Crossing Configuration with the 2018 HSR Project Alternative	Proposed Crossing Configuration with the Shared Passenger Track Alternative
Orangethorpe Avenue	At grade	Undercrossing	At grade
La Palma Avenue	At grade	Undercrossing	At grade
Sycamore Street	At grade	Closed	At grade
Broadway	At grade	Undercrossing	At grade
South Street	At grade	Closed	At grade
Santa Ana Street	At grade	At grade	At grade
Vermont Avenue	At grade	Undercrossing	At grade
Ball Road	At grade	Undercrossing	At grade
E Cerritos Avenue	At grade	Undercrossing	Undercrossing
State College Boulevard	At grade	Undercrossing	Undercrossing

Source: Authority 2023
HSR = high-speed rail

The at-grade crossings at Cerritos Avenue and State College Boulevard would include the addition of two tracks at each crossing to support the proposed layover tracks in this area. This would increase the number of tracks crossing the roadways at these crossings to five and four, respectively. These crossings would be grade separated, in compliance with California Public Utilities Commission guidance and to avoid HSR trains being parked within the crossings for long periods.

Figure 4-1 through Figure 4-7 show a comparison of the 2018 HSR Project Alternative proposed grade separations and road closures at locations that are now proposed to remain at grade under the Shared Passenger Track Alternative. Section 4.2.2, Evaluation of Anaheim Grade Crossing Options, compares the impacts of the 2018 HSR Project Alternative's Mostly Grade-Separated Anaheim Option versus the Shared Passenger Track Alternative's Mostly At-Grade Anaheim Option.

Shared Passenger Track Alternative At-Grade Crossing



2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-1 Orangethorpe Avenue Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing



2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-2 La Palma Avenue Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing

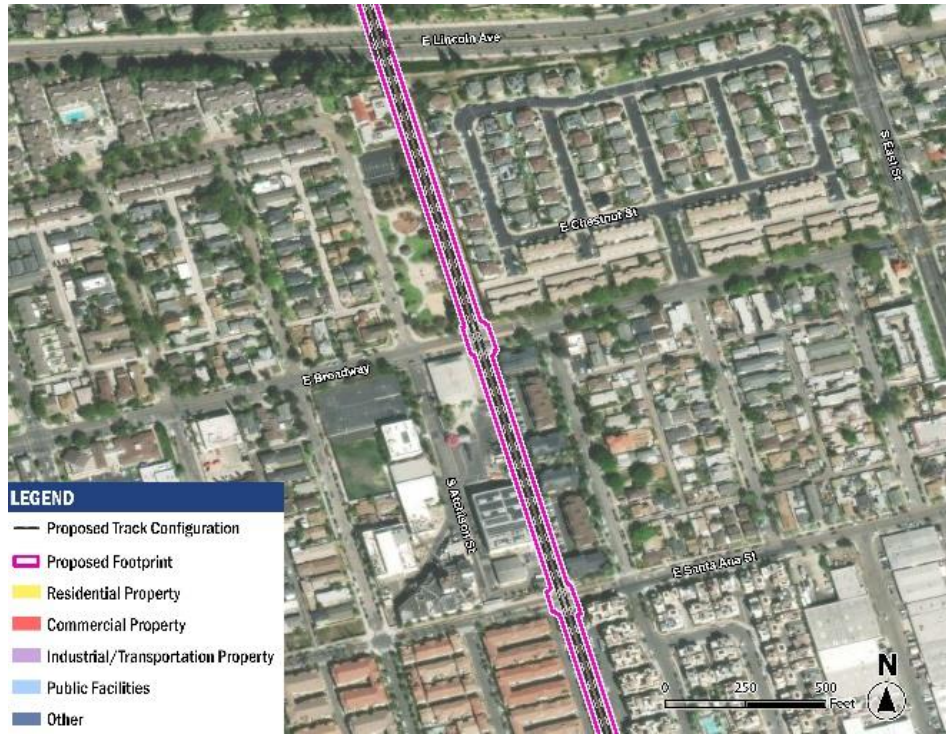


2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-3 Sycamore Street Crossing Closure/Pedestrian Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing

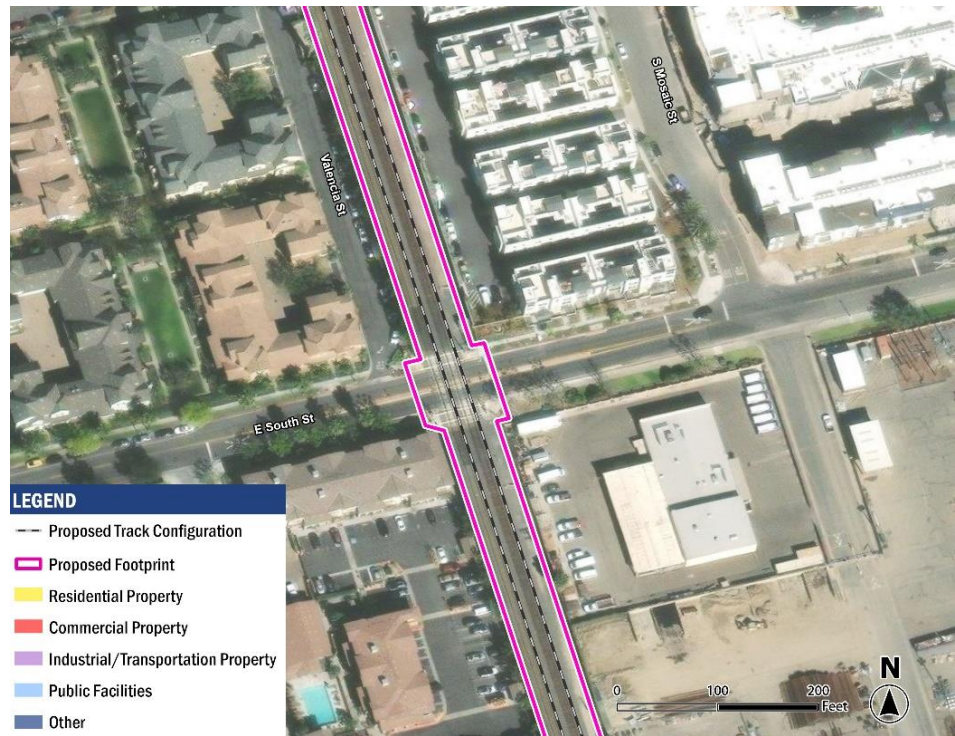


2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-4 Broadway Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing



2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-5 South Street Crossing Closure / Pedestrian Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing

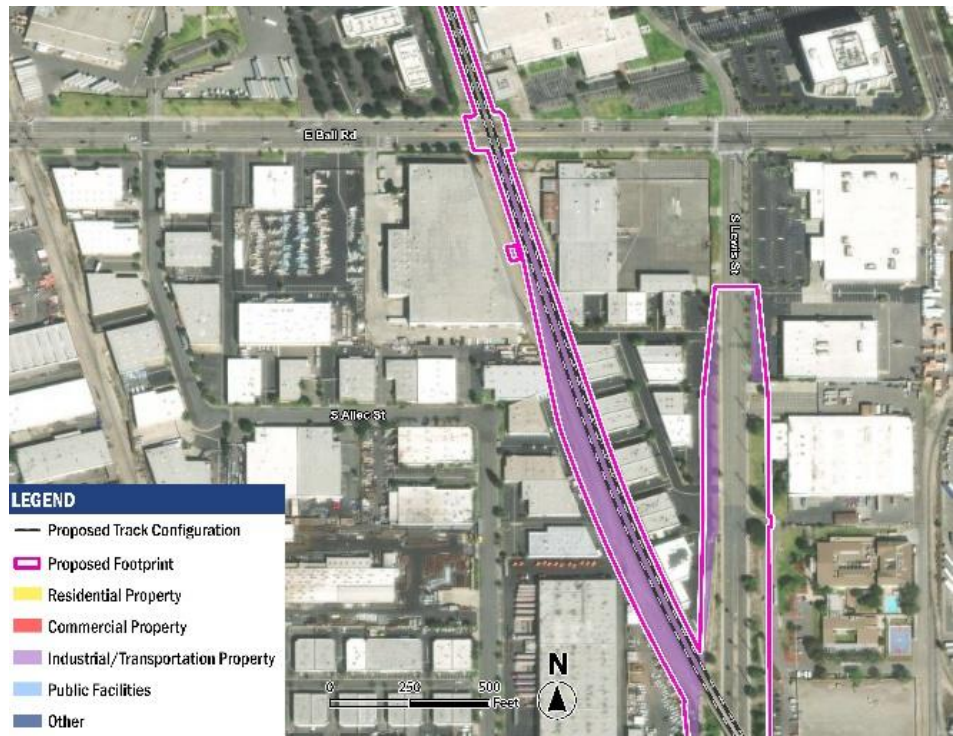


2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-6 Vermont Avenue Grade Crossing Configuration Options

Shared Passenger Track Alternative At-Grade Crossing



2018 HSR Project Alternative Grade-Separated Crossing



Figure 4-7 Ball Road Crossing Configuration Crossings Options

4.2.2 Evaluation of Anaheim Grade Crossing Options

Table 4-3 provides a qualitative assessment of the Mostly Grade-Separated Anaheim Option (follows the grade crossing approach used for the 2018 HSR Project Alternative) and Mostly At-Grade Anaheim Option (follows the new grade crossing approach in Anaheim proposed for use by the Shared Passenger Track Alternative) by evaluation criteria. This analysis is based on preliminary engineering completed to date and environmental analyses conducted on available information. The factors considered when evaluating each category are those outlined in Section 3, Evaluation Criteria and Methodology, in Table 3-1 and Table 3-2.

Table 4-3 Comparison of Anaheim Grade Crossing Options

Consideration	Mostly Grade-Separated Anaheim Option	Mostly At-Grade Anaheim Option
Maximize ridership/revenue potential	No key differentiating effects among the two options.	
Maximize connectivity and accessibility	No key differentiating effects among the two options.	
Minimize capital and operating costs	Least favorable	Most favorable
Development potential for TOD within walking distance of station	No key differentiating effects among the two options.	
Maximize compatibility with existing and planned development	Least favorable	Most favorable
Maximize constructability	Least favorable	Most favorable
Minimize disruption to existing railroads	Least favorable	Most favorable
Minimize disruption to and relocation of utilities	Least favorable	Most favorable
Displacements (a socioeconomic effect)	Least favorable	Most favorable
Property with access affected	Least favorable	Most favorable
Minimize effects on traffic/ transportation	Most favorable	Least favorable
Minimize effects on air quality/GHG	Most favorable	Least favorable
Minimize effects of noise/vibration	Least favorable	Most favorable
Minimize effects of EMI/EMF	No key differentiating effects among the two options.	
Minimize effects on public utilities and energy	Least favorable	Most favorable
Minimize effects on biological and aquatic resources	No key differentiating effects among the two options.	
Minimize effects on hydrology and water quality	Least favorable	Most favorable
Maximize avoidance of areas with geological and soils constraints	Least favorable	Most favorable
Maximize avoidance of areas with potential hazardous material	Least favorable	Most favorable
Minimize effects on safety and security	Most favorable	Least favorable
Minimize effects on socioeconomics and communities	Least favorable	Most favorable
Minimize effects on station planning, land use, and development	Least favorable	Most favorable
Minimize effects on agriculture farmland and forest land	No key differentiating effects among the two options.	
Minimize effects on parks, recreation, and open space	Least favorable	Most favorable

Consideration	Mostly Grade-Separated Anaheim Option	Mostly At-Grade Anaheim Option
Minimize effects on aesthetics and visual quality	Least favorable	Most favorable
Minimize impacts on cultural resources	Least favorable	Most favorable
Minimize effects on Section 4(f)/6(f) resources	Least favorable	Most favorable
Minimize effects on environmental justice (a socioeconomic effect)	Least favorable	Most favorable

Source: Authority 2023

EMI/EMF = electromagnetic interference/electromagnetic field; GHG = greenhouse gas; TOD = transit-oriented development

4.2.3 Environmental Impacts

The Authority analyzed the qualitative impacts of leaving the crossings in Anaheim at grade as part of its Shared Passenger Track Alternative. The following key differentiating effects were considered in identifying the preferred option:

- Traffic/Transportation
- Air Quality/Greenhouse Gas (GHG)
- Noise and Vibration
- Public Utilities and Energy
- Hydrology/Water Resources
- Geological and Soils Constraints
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics and Communities
- Station Planning, Land Use, and Development
- Parks, Recreation, and Open Space
- Aesthetics and Visual Resources
- Cultural Resources
- Section 4(f)/6(f) Resources
- Environmental Justice

Several environmental impacts are assumed to be lessened with a smaller project footprint and fewer required construction-related activities associated with the Mostly Grade-Separated Anaheim Option, as stated in Section 3.2, Evaluation Measures, and noted below. These options require additional ground disturbance for construction for a larger site option, which could result in greater direct impacts on stormwater flow, geological and soils constraints, cultural, or Section 4(f) resources impacts affecting potential resources, or larger costs for construction. Additional discussion for key topics is provided below.

4.2.3.1 Traffic/Transportation

Construction of grade separations would result in traffic impacts on roadway segments and intersections. Spoils hauling would entail trucks off-hauling the spoils generated by construction, especially for larger areas of disturbance, to disposal sites, which would result in additional truck trips. During construction of the Mostly Grade-Separated Anaheim Option, access to the surrounding area may be restricted because of construction activities and from temporary and permanent closures. Construction of grade separations would also shift area traffic and increase delay at some locations, and traffic impacts would occur at the unsignalized intersections because of closures and detours affecting local streets. Construction impacts associated with the Mostly At-Grade Anaheim Option would be greatly reduced because of minimal trackwork and improvements within the crossings.

Operationally, increased vehicle queuing for at-grade crossings associated with the Mostly At-Grade Anaheim Option would cause traffic delays and push traffic onto other local streets.

Intersections that are already congested would continue to worsen over time if more vehicles use local roadways. Traffic would be detoured to other crossing locations, adding vehicle volumes and delays to intersections near those locations and reducing local connectivity. The Mostly Grade-Separated Anaheim Option would reduce traffic delays at intersections with rail crossings and have greater long-term traffic benefits. The Mostly Grade-Separated Anaheim Option would result in fewer impacts.

4.2.3.2 Air Quality/Greenhouse Gases

For crossings that remain at grade, air quality would worsen as a result of cars idling while waiting in the traffic queue for trains to pass through the intersections. Congested intersections would continue to experience more pollution over time if more vehicles use local roadways and more trains operate within the system. For crossings that will be grade separated, construction-period pollutant emissions from construction activities, spoils hauling, and construction-period traffic delays, would result in construction activities exceeding general thresholds for pollutant emissions. The Mostly Grade-Separated Anaheim Option would build more grade separations and therefore result in greater temporary generation of emissions of criteria pollutants and toxic air contaminants through use of heavy-duty construction equipment, construction worker vehicles, truck hauling, demolition, and generation of electricity. However, the long-term reduction in air pollutant emissions resulting from the Mostly Grade-Separated Anaheim Option would result in greater benefits overall.

4.2.3.3 Noise and Vibration

The Mostly Grade-Separated Anaheim Option would require a larger project footprint than the Mostly At-Grade Anaheim Option. A larger project footprint would require additional construction activities and result in greater noise and vibration impacts on surrounding land uses, including sensitive receivers such as residential or recreational land uses. The Mostly At-Grade Anaheim Option would require less construction and therefore have reduced noise and vibration impacts during construction.

Operationally, at-grade crossings within Anaheim are already classified as FRA quiet zones and would continue to have reduced noise and vibration impacts. However, grade-separated crossings also typically result in less noise during operation. The Mostly At-Grade Anaheim Option would result in fewer noise and vibration impacts on surrounding sensitive receivers and fewer impacts because of the reduced project footprint.

4.2.3.4 Public Utilities and Energy

The Mostly Grade-Separated Anaheim Option would have a larger project footprint than the Mostly At-Grade Anaheim Option. A larger project footprint would require additional construction activities and result in more conflicts with existing public utilities and energy lines. This would result in an increased need for coordination with external companies for relocation of the affected lines. The Mostly At-Grade Anaheim Option, which utilizes existing at-grade crossings, would have fewer impacts on existing public utilities and energy, reducing the need to coordinate with utility and energy companies for relocation of services.

4.2.3.5 Hydrology/Water Resources and Geological and Soils Constraints

Several environmental impacts would be lessened with a smaller project footprint and fewer required construction-related activities. With the Mostly At-Grade Anaheim Option, which has an overall smaller project footprint than the Mostly Grade-Separated Anaheim Option, fewer construction impacts would likely result for hydrology and water quality and geological and soils constraints, if resources are present within the project footprint, than with construction of large project features. Operational impacts are anticipated to be similar for both options. The Mostly At-Grade Anaheim Option would likely have fewer impacts because of the smaller project footprint and fewer construction impacts.

4.2.3.6 Hazardous Materials and Wastes

Potential Environmental Concern sites, or sites where a possibility of existing, past, or potential hazardous materials release into soil, groundwater, or surface water, of high concern exists, would be present within each of the design options. Accidental release of hazardous materials and wastes could present health and safety risks to the public, workers, and the environment during project operations. The Mostly Grade-Separated Anaheim Option would require the project footprint to expand more into surrounding land uses, which include industrial land uses that could contain unknown hazardous materials. By utilizing existing at-grade crossings, the Mostly At-Grade Anaheim Option would affect fewer sites potentially designated as hazardous sites. Additionally, several grade crossings are adjacent to schools. Without the closures at Sycamore Street and South Street and the grade separation at Vermont Avenue included in the Mostly Grade-Separated Anaheim Option, there would be fewer or no impacts on Zion Lutheran School, Thomas Jefferson Elementary, and Olive Street Elementary, respectively. Operational impacts are anticipated to be similar for both options. Overall, the Mostly At-Grade Anaheim Option would have fewer impacts because the smaller project footprint would affect fewer properties and adjacent schools.

4.2.3.7 Safety and Security

The Mostly At-Grade Anaheim Option would maintain existing safety measures and access at existing crossings, which qualify as FRA quiet zones. As stated previously, since the quiet zones have been in effect, the area has seen a reduction in highway-rail incidents from four in 2019 to one in 2021. Additionally, grade crossings improve safety and eliminate the need for crossing gate down times. Grade separating a crossing would further minimize rail safety concerns. Construction of the Mostly Grade-Separated Anaheim Option would disrupt the existing roadway network and have adverse local impacts affecting emergency access during construction. However, at-grade crossings associated with the Mostly At-Grade Anaheim Option could result in emergency vehicle delays during operations while trains are crossing through an intersection and vehicle access is blocked. There are no wildfire hazard zones or similar concerns in this area of the project. The Mostly Grade-Separated Anaheim Option would have fewer impacts because of fewer emergency vehicle delays during operation and other reductions in rail safety concerns.

4.2.3.8 Socioeconomics and Communities

The grade separations and road closures associated with the Mostly Grade-Separated Anaheim Option would result in substantial temporary effects on existing communities and neighborhoods. For example, construction of the proposed Orangethorpe Avenue grade separation would limit access to the Rancho La Paz mobile home park, as Orangethorpe Avenue provides the primary means of ingress to the development. During construction of the undercrossing, access to the mobile home park would need to be diverted to a rear entry along Valencia Drive by way of Lawrence Avenue, resulting in a temporary inconvenience for residents of the mobile home park; however, access would not be permanently altered. With Orangethorpe Avenue remaining at grade in the Mostly At-Grade Anaheim Option, there would be little or no impact on mobile home park access.

The project would result in residential and business displacements as a result of the right-of-way acquisition requirements. The Mostly Grade-Separated Anaheim Option would require a larger project footprint that would require full and partial acquisitions of a variety of land uses. The acquisition of these land uses would affect the socioeconomics of the project area and displace people of the community. The Mostly At-Grade Anaheim Option would have fewer displacements because it would include fewer grade separations and no crossing closures. The Mostly Grade-Separated Anaheim Option would require a larger project footprint that would require full and partial acquisitions of a variety of land uses. The acquisition of these land uses would affect the socioeconomics of the project area and displace people of the community.

The additional grade separations included in the Mostly Grade-Separated Anaheim Option would increase the project budget by approximately \$376 million (as of 2023; refer to Section 4.5, Capital Cost) and would increase operational and maintenance costs during operations. Although

there would be a benefit involving additional investment in Anaheim supporting the economy and adding local jobs, construction of the individual grade crossings would take approximately 36 months to complete. Construction would be staggered so that nearby grade separations would not be in construction at the same time. Construction impacts involving noise, air pollutants, access disruption, among others, would negatively affect adjacent residences and businesses, and may also have temporary adverse effects on community cohesion, disrupt existing communities, and displace residential uses. Overall, the Mostly Grade-Separated Anaheim Option would cause significant impacts on the community and the existing socioeconomics of the project area compared to the Mostly At-Grade Anaheim Option.

4.2.3.9 Station Planning, Land Use and Development

As neither the Mostly At-Grade Anaheim Option nor the Mostly Grade-Separated Anaheim Option include or affect existing or proposed rail stations, stations are not discussed here and instead this discussion will focus on land use and development only. The grade-separated crossings included in the Mostly Grade-Separated Anaheim Option have a larger footprint which could affect land use at the crossing areas and result in acquisitions of existing uses, including residential, commercial, industrial, and municipal. The Mostly Grade-Separated Anaheim Option would result in up to 204 affected parcels, while the Mostly At-Grade Anaheim Option would result in up to 99 affected parcels. The majority of property acquisitions for the Mostly At-Grade Anaheim Option would be partial acquisitions, whereas the Mostly Grade-Separated Anaheim Option would require more full property acquisitions. Of parcels to be acquired for the Mostly At-Grade Anaheim Option, industrial use (43 percent) is the dominant land use followed by residential (33 percent) and commercial (12 percent).

The Mostly Grade-Separated Anaheim Option would also close South Street and Sycamore Street to vehicular traffic and require partial parcel acquisitions. Construction of grade separations would result in permanent easements, property takes, and residential, commercial, and industrial displacements, as well as roadway and track modifications, and building or other structure demolition to clear the limits of disturbance for project construction. Two single-family residences (La Palma Avenue grade separation) and 28 multifamily residential units (Broadway and Vermont Avenue grade separations) in Anaheim would be displaced. Permanent impacts on land use patterns and incompatibility could result if roadway closures and modifications lead to temporary closure or relocation of businesses and access disruptions to residents, businesses, customers, delivery vehicles, and buses. Traffic would be detoured to other crossing locations, adding vehicle volumes and delays to intersections near those locations and reducing local connectivity. Overall, the Mostly At-Grade Anaheim Option would have fewer impacts on land use, properties, and connectivity within in Anaheim.

4.2.3.10 Aesthetics and Visual Quality

Grade separating existing crossings would result in greater visual changes, such as impacts on viewers, visual character, and visual quality from construction activities (including the release of dust) and built features, and disruption from nighttime lighting. The Mostly At-Grade Anaheim Option would build fewer ariel structures and therefore have fewer visual impacts in comparison to the Mostly Grade-Separated Anaheim Option.

4.2.3.11 Cultural Resources

The Mostly Grade-Separated Anaheim Option includes the East Broadway Street grade separation associated with the Kroeger-Melrose Historic District, La Palma Avenue grade separation associated with the Historic Palm District, and Sycamore Street and South Street as closures associated with the Anaheim Colony Historic District. Construction of these grade separations and closures would encroach onto historic properties. While it is not expected that these grade separations would require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property, State Historic Preservation Officer review and concurrence would be required. The Mostly At-Grade Anaheim Option would reduce the number of grade-separated crossings and the overall project footprint in these areas and

would therefore have fewer historic resource impacts than the Mostly Grade-Separated Anaheim Option.

4.2.3.12 Section 4(f)/Parks, Recreation, and Open Space

In addition to the cultural resources (historic districts) discussed above, the Mostly Grade-Separated Anaheim Option would result in Section 4(f) impacts on two resources. The East Broadway grade separation would require temporary construction easements on 0.10 acre out of 2.63 acres (or approximately 4 percent) in the southern portion on Citrus Park, a Section 4(f) resource with a temporary occupancy exception. The temporary construction easement on a portion of the park would constitute a temporary occupancy. A relatively small portion (0.10 acre/4 percent) of the park would be required to relocate and build the underground drainage facilities. This area is occupied by an open grass area adjacent to the volleyball courts but is not developed with other recreational amenities. The remaining portion of the park outside of the construction area would remain open for public use during construction.

Olive Street Elementary School is an approximately 7.3-acre school in Anaheim north of the Vermont Avenue grade separation and is a Section 4(f) resource with a *de minimis* impact. Construction of the grade separation would require a temporary construction easement on 0.18 acre (or approximately 2 percent) of land on the school property and would require similar mitigation to reduce construction impacts. The Mostly At-Grade Anaheim Option, which maintains East Broadway Street and Vermont Avenue at grade, would have fewer Section 4(f) impacts adjacent to or directly affecting Citrus Park and Olive Street Elementary School.

4.2.3.13 Environmental Justice

Construction and operation of grade separation could result in the following temporary and permanent adverse or beneficial effects on EJ populations:

- Hazardous materials and wastes: potentially adverse effects, with greater impacts associated with the Mostly Grade-Separated Anaheim Option.
- Air quality: potentially adverse effects during construction and operation, with greater impacts associated with the Mostly Grade-Separated Anaheim Option during construction. However, there would be fewer impacts during operation of the Mostly Grade-Separated Anaheim Option as fewer vehicles would idle.
- Noise and vibration: potentially adverse effects, with greater impacts associated with the Mostly Grade-Separated Anaheim Option during construction.
- Archaeological and historic resources: potentially adverse effects from direct impacts on known historic districts and properties associated with the Mostly Grade-Separated Anaheim Option. The Mostly Grade-Separated Anaheim Option's larger footprint may also have greater impacts on archaeological sites.
- Community cohesion: potentially adverse effects from physical barriers (street closures) associated with the Mostly Grade-Separated Anaheim Option but beneficial effects from improved transportation facilities.
- Economic vitality: potentially adverse effects on residents and businesses from acquisitions or other property impacts, with greater impacts associated with the Mostly Grade-Separated Anaheim Option.
- Acquisitions: impacts from acquisitions or other property impacts with greater impacts for the Mostly Grade-Separated Anaheim Option.
- Employment: potentially beneficial effects related to construction and maintenance jobs, with greater benefits associated with the Mostly Grade-Separated Anaheim Option.
- Transportation: potentially beneficial effect with better circulation and improved access and safety associated with the Mostly Grade-Separated Anaheim Option. However, the Mostly

Grade-Separated Anaheim Option would also have more potential adverse effects associated with construction.

4.2.4 Staff Recommendation

The Authority's staff recommends that the Board eliminate the Mostly Grade-Separated Anaheim Option from further analysis and only evaluate the Mostly At-Grade Anaheim Option within the EIR/S for the following reasons:

- The FRA mandates upgrading at-grade crossings to grade separations when speeds exceed 125 mph. HSR and other passenger carriers will not exceed the current maximum speed of 90 mph within Anaheim. As such, the Authority's proposed approach to grade crossings is consistent with FRA regulations and the methodology used in other HSR project sections.
- As indicated by the city and by local stakeholders, grade separations require larger footprints, resulting in greater property and other environmental impacts within the crossing areas.
- The 2018 HSR Project Alternative's proposal to separate or close all at-grade crossings within Anaheim would add \$375,600,000 to the HSR project cost based on the 2023 analysis. These costs would increase about 5 percent annually until construction begins.
- Communities along the alignment would be subjected to 18 to 36 months of construction for each grade crossing.
- The updated HSR operating plan decreases the frequency of two HSR trains per hour, which is less frequent than initially assumed in the 2018 HSR Project Alternative.
- OCTA has already added safety enhancements at at-grade crossings in Anaheim, which has allowed Anaheim to convert all crossings to FRA quiet zones (USDOT 2023).

Within Anaheim, it is recommended to environmentally clear grade separations for Cerritos Avenue and State College Boulevard. This approach is consistent with recent California Public Utilities Commission precedent, which has stopped granting approvals for at-grade crossings with more than three railroad tracks. For all other crossings, it is proposed to leave them at grade and environmentally clear the electrification of the existing tracks only. In addition to reducing the number of grade separations, this approach would reduce the number of street closures.

The Authority will examine traffic and safety impacts of at-grade crossings as part of the EIR/EIS and provide appropriate mitigation measures, as applicable. Additionally, the Authority will continue working collaboratively with Anaheim and OCTA, the corridor owner, to build consensus on options for improvements at the remaining at-grade crossings. The Authority can assist Anaheim on how to proceed with the grade separations, but Anaheim is responsible for the final decision. Therefore, the Mostly At-Grade Anaheim Option is recommended as the preferred grade crossing option for the Shared Passenger Track Alternative.

4.3 Light Maintenance Facility

HSR operations in Southern California require an LMF with space for activities associated with fleet storage, cleaning, repair, overnight layover accommodations, and servicing facilities. The Authority defines three levels of maintenance performed at an LMF:

- Level I: Daily inspections, pre-departure cleaning and testing
- Level II: Monthly inspections
- Level III: Quarterly inspections, including wheel-truing

The project section would include one HSR Level III LMF to support the following functions:

Train Storage: Some trains would be stored at the LMF prior to start of revenue service. The LMF would have two storage tracks that could accommodate nine 800-foot-long trains.

Examinations in Service: Examinations would include inspections, tests, verifications, and quick replacement of certain train components on the train.

Inspection: Periodic inspections would be part of the planned preventive maintenance program requiring specialized equipment and facilities.

The size of the LMF site would support the level of daily revenue service dispatched by LAUS at the start of each revenue service day.

4.3.1 High-Speed Rail Technical Memorandum

Per the current Technical Memorandum guidance, an LMF requires 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 (Authority 2023b). 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 (Authority 2023b). 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 shall be made utilizing inside shop tracks with interior access and inspection pits for underside and bogie inspections. Six shop tracks are required. Technical Memorandum guidance states that a single trainset is 673 feet and a double trainset is 1,345 feet. The storage yard capacity must include capacity for 20 single 673-foot-long trainsets and 4 double 1,345-foot-long trainsets.

4.3.2 Background

LMF concepts for the project section have been considered in a variety of locations over the last decade-plus as the project has advanced. The following LMF concepts were previously considered:

- In 2010, an Anaheim Level III LMF was proposed to be located between Ball Road and Cerritos Avenue. This facility was evaluated as part of the Dedicated HST and Consolidated Shared-Track Alternative, where there would be storage for 18 double trainsets on each track. However, under the Consolidated Shared Track Alternative, the Anaheim Level III LMF would require significant new right-of-way, reduce throughput to the ARTIC station, and would be too far from LAUS where many high-speed trains would be terminating service. For these reasons, the Anaheim Level III LMF was eliminated.
- In 2016, the City of Montebello was interested in siting a Level III LMF, as a way to bring employment opportunities to the area. The proposed facility was located between Green Avenue and Rio Hondo allowing for a capacity for 42 single trainsets. The facility was evaluated during the Consolidated-Shared Track Alternative (“three + two”) with through, stub and perpendicular configurations. The Authority had concerns about the Montebello Level III LMF because of the facility’s impact on the area and right-of-way acquisitions. The Montebello Level III LMF would also have significant impact on Metrolink’s operation and was considered too far from LAUS, where many high-speed trains would be terminating service. Therefore, the Montebello Level III LMF was eliminated.
- In 2016, the Metrolink Central Maintenance Facility was evaluated as part of the Consolidated Shared-Track Alternative. The proposed Level III LMF was located within the footprint of existing Metrolink Central Maintenance Facility between San Fernando Road and the Los Angeles River and north of I-5. The facility had capacity for 22 single trainsets and included an eight-track configuration with a 660-foot shop building. This Metrolink Central Maintenance Facility would be geometry constrained from the control point at Dayton to control point at Ormiston and would be a curved location. HSR use of the Metrolink Central Maintenance Facility would create significant impacts on Metrolink operations; therefore, the option was eliminated.
- In 2016, a La Mirada Level III LMF was proposed in tandem with scoping for the Consolidated Shared-Track Alternative. The facility was located between Valley View and Beach Boulevard and included an eight-track configuration with an 850-foot-long shop building. The La Mirada LMF would significantly displace BNSF’s switching operation in the area and would require significant right-of-way from adjoining properties. The La Mirada LMF was ultimately considered too far from LAUS and therefore eliminated.

4.3.2.1 2018 High-Speed Rail Project Alternative

Around 2016, a West Bank LMF was proposed in preliminary engineering for project definition. The facility was located between Fourth Street and I-10 and had capacity for nine single trainsets. This site had inadequate space for full operation as a Level III LMF yard, thus requiring the trains to be serviced at the nearest HSR Level III LMF yard in Antelope Valley. The facility was also geometrically constrained by existing bridges and would potentially affect Metro's planned B/D Line station in the Arts District. These constraints did not allow for a larger facility that could meet the requirements of a Level III LMF facility.

The 2018 HSR Project Alternative proposed an LMF⁵ at the existing BNSF railroad yard, also used by Amtrak, on the west bank of the Los Angeles River. As proposed, 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 have required relocation. An overview of the LMF is shown on Figure 4-8.



Source: Authority 2020

Figure 4-8 2018 High-Speed Rail Project Alternative Light Maintenance Facility Site

4.3.2.2 Shared Passenger Track Alternative

In 2022, the Eighth Street LMF Option for the Southern California Level III LMF was proposed as a 62-acre shared facility with Amtrak along the West Bank of the Los Angeles River. This option could accommodate 16 HSR single trainsets. This plan would replace Amtrak's Coach Yard, affecting its capacity and requiring realignment of maintenance facility tracks. However, concerns

⁵ The level of this proposed LMF was not previously determined.

arose regarding its impact on the Redondo Junction Historic District and operational conflicts with high-speed trains. Consequently, the Eighth Street LMF Option was eliminated.

Southern California Light Maintenance Facility – 15th Street Light Maintenance Facility Option

In 2023, the Southern California LMF – 15th Street LMF Option was introduced. The Southern California LMF – 15th Street Option has an overall size of 52 acres and a northern boundary at approximately Seventh Street and continues adjacent and west of the existing Amtrak Eighth Street Yard to Washington Boulevard to the south. The 15th Street LMF Option is situated in a highly constrained area of the West Bank between the existing Art's District neighborhood and Amtrak's Eighth Street Maintenance yard track and facilities. To accommodate the HSR lead tracks into the Level III LMF yard would require a reconfiguration of the existing Amtrak lead track and a new depressed three track mini-trench to obtain the minimum 24-foot clearance under the historic Olympic Boulevard overpass.

It includes a six-track shop building able to accommodate 12 trainsets, along with an outdoor train yard with a storage capacity of 20 HSR trainsets. The 15th Street LMF Option is a single ended yard with access to and from the mainline tracks by Seventh Street. The 15th Street LMF Option will also include:

- Sewerage: 20,000 square feet
- Power Facilities: 30,000 square feet
- Water Storage Cistern: 20,000 square feet
- Miscellaneous Area: 32,500 square feet
- Employee Parking: 100 spaces
- Hard Standing for Deliveries/Materials: 45,000 square feet
- Collection Point: 6,500 square feet
- Admin/Crew Support Offices: 30,000 square feet
- Bulk Storage Area: 35,000 square feet
- Stormwater Treatment: 45,000 square feet



Source: Authority 2023

Figure 4-9 Southern California Light Maintenance Facility – 15th Street Light Maintenance Facility Option Area

Southern California Light Maintenance Facility – 26th Street Light Maintenance Facility Option

In 2017, BNSF requested modification to its Hobart Yard in Vernon and Commerce as part of the Consolidated Shared-Track Alternative, or “2R” configuration. This was intended to offset the capacity lost from reconfiguring BNSF storage tracks throughout the project section corridor to allow for the installation of new HSR tracks, especially along the West Bank of the Los Angeles River. As a result, parcels between 26th Street and a BNSF spur were proposed to be acquired on the south side of the BNSF Hobart Yard. The resulting full property takes needed to build this new storage yard provided the opportunity for the Authority to add a Level III LMF on the remaining excess land close to LAUS.

The 26th Street Option has an overall size of 50 acres and is roughly bounded by the BNSF mainline and storage tracks on the north, 26th Street on the south, Downey Road on the west, and I-710 on the east. With the 26th Street LMF Option being farther from LAUS than 15th Street, it would take more time for trainsets to travel between LAUS and the 26th Street LMF Option. The 26th Street LMF Option would require HSR trainsets to travel a short distance on BNSF tracks to access the 26th Street LMF Option, necessitating daily dispatch coordination between HSR and BNSF to prevent trainsets from being delayed. The 26th Street LMF Option is already largely within the existing project footprint, therefore no new right-of-way costs than what is already accounted for in the current estimate would need to be considered.⁶ There would be 12-yard

⁶Potential unknown costs caused by greater-than-anticipated impacts on BNSF could be incurred.

tracks to allow for the storage of 24 single trainsets, along with a shop building that can accommodate six tracks.

All tracks have bidirectional access to and from the mainline tracks. A six-track, 1,345-foot-long shop building with 12 trainset spots will also be provided along with an outdoor train yard with a storage capacity of 24 HSR trainsets. The 26th Street LMF Option would have more trackage and a larger shop building than 15th Street LMF Option, with a shop building that adheres to HSR Technical Memorandum requirements. Other maintenance facilities include the following:

- Sewerage: 20,000 square feet
- Power Facilities: 30,000 square feet
- Water Storage Cistern: 20,000 square feet
- Miscellaneous Area: 32,500 square feet
- Employee Parking: 100 spaces
- Hard Standing for Deliveries/Materials: 45,000 square feet
- Collection Point: 6,500 square feet
- Admin/Crew Support Offices: 30,000 square feet
- Bulk Storage Area: 35,000 square feet
- Stormwater Treatment: 45,000 square feet



Source: Authority 2023

Figure 4-10 Southern California Light Maintenance Facility – 26th Street Light Maintenance Facility Option Area

4.3.3 Evaluation of Southern California Light Maintenance Facility

Table 4-4 provides a qualitative comparison of the Southern California LMF – 15th Street LMF Option and Southern California LMF – 26th Street LMF Option by evaluation criteria. This analysis is based on preliminary engineering completed to date and environmental analyses conducted on available information.

Table 4-4 Comparison of Light Maintenance Facility Options

Consideration	Southern California LMF – 15th Street Option	Southern California LMF – 26th Street Option
Maximize ridership/revenue potential	No key differentiating effects among the two options.	
Maximize connectivity and accessibility	No key differentiating effects among the two options.	
Minimize capital and operating costs	Least favorable	Most favorable
Development potential for TOD within walking distance of station	N/A	
Maximize compatibility with existing and planned development	No key differentiating effects among the two options.	
Maximize constructability	Least favorable	Most favorable
Minimize disruption to existing railroads	No key differentiating effects among the two options.	
Minimize disruption to and relocation of utilities	No key differentiating effects among the two options.	
Displacements (a socioeconomic effect)	Least favorable	Most favorable
Property with access affected	Least favorable	Most favorable
Minimize effects on traffic/ transportation	Least favorable	Most favorable
Minimize effects on air quality/GHG	No key differentiating effects among the two options.	
Minimize effects of noise/vibration	No key differentiating effects among the two options.	
Minimize effects of EMI/EMF	No key differentiating effects among the two options.	
Minimize effects on public utilities and energy	No key differentiating effects among the two options.	
Minimize effects on biological and aquatic resources	No key differentiating effects among the two options.	
Minimize effects on hydrology and water quality	Least favorable	Most favorable
Maximize avoidance of areas with geological and soils constraints	Most favorable	Least favorable
Maximize avoidance of areas with potential hazardous material	Most favorable	Least favorable
Minimize effects on safety and security	No key differentiating effects among the two options.	
Minimize effects on socioeconomics and communities	No key differentiating effects among the two options.	
Minimize effects on station planning, land use, and development	No key differentiating effects among the two options.	
Minimize effects on agriculture farmland and forest land	No key differentiating effects among the two options.	

Consideration	Southern California LMF – 15th Street Option	Southern California LMF – 26th Street Option
Minimize effects on parks, recreation, and open space	No key differentiating effects among the two options.	
Minimize effects on aesthetics and visual quality	No key differentiating effects among the two options.	
Minimize impacts on cultural resources	Least favorable	Most favorable
Minimize effects on Section 4(f)/6(f) resources	Least favorable	Most favorable
Minimize effects on environmental justice (a socioeconomic effect)	No key differentiating effects among the two options.	

Source: Authority 2023

EMI/EMF = electromagnetic interference/electromagnetic field; GHG = greenhouse gas; LMF = light maintenance facility; N/A = not applicable; TOD = transit-oriented development

4.3.4 Environmental Impacts

The Authority has analyzed the qualitative impacts of 15th Street LMF Option and 26th Street LMF Option. The following key differentiating effects were considered in identifying the preferred option:

- Transportation/Traffic
- Hydrology and Water Resources
- Hazardous Materials and Wastes
- Geology and Soils
- Cultural Resources
- Section 4(f) and 6(f) Resources

Where resources are present within the footprint, several environmental impacts are assumed to be lessened with a smaller project footprint and fewer required construction-related activities, as stated in Section 3.2. These LMF options require additional ground disturbance for construction for a larger site option, which could result in greater direct impacts on stormwater flow, geological and soils constraints, cultural or Section 4(f) resources impacts affecting potential resources, or larger costs for construction. For example, the 26th Street LMF Option, which is already largely within the existing project footprint and has a smaller project footprint than the 15th Street LMF Option, would result in fewer construction impacts for hydrology and water quality, geological and soils constraints, hazards, cultural-archaeological resources, and Section 4(f) resources. However, this analysis also considered if there is the potential to affect any known environmental resources, including cultural or Section 4(f) resources, or constraints, like sites of existing contamination, in addition to the footprint size of the option. Additional discussion for key topics is provided below.

4.3.4.1 Transportation/Traffic

The 26th Street LMF Option would involve a smaller footprint and be adjacent to relocated rail tracks to the south of the BNSF Hobart Yard. The 15th Street LMF Option would be adjacent to the existing Amtrak Eighth Street Yard requiring modifications to Amtrak operations during construction and design modifications to maintain train movement near Olympic Boulevard. The 15th Street LMF Option would require more parking than the 26th Street LMF Option. The 15th Street LMF Option could result in additional access constraints to existing transportation facilities along Olympic Boulevard or the adjacent bridge structure. Both options would require relocation of 26th Street, which includes an area already largely within the existing project footprint. Both options would result in the displacement and relocation of existing businesses, although the 15th Street LMF Option would result in additional relocations and the redistribution of new vehicular traffic at this location for operation. The 15th Street LMF Option would have greater impacts on existing rail operations, local roadway networks, parking, and transportation facilities than the 26th Street LMF Option.

4.3.4.2 Hazardous Materials and Wastes

Both project sites are in a highly developed area surrounded by commercial and industrial uses. The 15th Street LMF Option would be in a railyard with potential contamination; however, the 26th Street LMF Option would be on industrial properties with known significant contamination concerns, specifically the Exide property. As such, the 15th Street LMF Option would likely have fewer impacts.

4.3.4.3 Geology and Soils

Both LMF option sites have previously been developed for other uses, and soils and other geologic conditions are anticipated to be stable enough for future development. However, in areas of known contamination, specifically the Exide property, excavation of additional soils may be required, resulting in additional structural considerations involving new soil replacement and compaction. As such, the 26th Street LMF Option could have additional geology and soils constraints when compared to the 15th Street LMF Option.

4.3.4.4 Cultural Resources

Both design option sites are within a highly developed area that are not likely to contain significant cultural-archaeological resources.

There are four historic eligible properties adjacent to or directly abutting the 15th Street LMF Option's footprint: First Street Bridge, Fourth Street Bridge, Seventh Street Bridge, and Olympic Boulevard Bridge. Additionally, two eligible properties could potentially be directly affected within the footprint of the 15th Street LMF Option: the Southern California Gas Company Administration building (one building at 1700 S Santa Fe) and the Southern California Gas Company Complex (four buildings just east/northeast of the Administration building). Therefore, the 26th Street LMF Option would have fewer built environment impacts than the 15th Street LMF Option.

4.3.4.5 Section 4(f)/6(f) Resources

There are no Section 6(f) properties within the footprint of either LMF option. Section 4(f) properties that could be affected by the construction of the 15th Street LMF Option are the Southern California Gas Company Complex, including four buildings built during the years 1932-1936. These buildings would result in a permanent use. It would be difficult to cite a lack of alternatives to these Section 4(f) impacts for the 15th Street LMF given the 26th Street LMF Option is also available.

The 26th Street LMF Option would not encroach onto any of the Section 4(f) resources. Therefore, there would be no impacts on Section 4(f) resources. The 26th Street LMF Option would result in fewer impacts on Section 4(f) resources.

4.3.5 Staff Recommendation

The Authority's staff recommends that both LMF options be evaluated in the Draft EIR/EIS, but that the Board identify the Southern California LMF – 26th Street LMF Option to be included in the PA for the following reasons:

- The 26th Street LMF Option would use land that would be acquired by the Authority because of the BNSF Hobart Storage Yard tracks, minimizing displacement and cost impacts. The 15th Street LMF Option would require all new rights-of-way.
- The 26th Street LMF Option is a double-end yard and has two-way access to the mainline tracks from both the north and south, providing greater operational flexibility and redundancy.
- The 26th Street LMF Option has more trainset storage capacity than the 15th Street LMF Option.
- The 15th Street LMF Option only provides one-way access for trains from the mainline tracks to the maintenance facility, increasing the chance of track fouling and decreasing operational efficiency.

- The 15th Street LMF Option involves reconfiguring existing tracks and constructing a mini-trench to accommodate HSR tracks in a tightly constrained area between the Arts District neighborhood and Amtrak’s Eighth Street maintenance yard.

While the 15th Street LMF Option is closer to LAUS and a larger site than the 26th Street LMF Option, the 15th Street LMF Option would have greater impacts on the majority of the environmental considerations, including displacements, cultural resources, and Section 4(f) resources. The 15th Street LMF Option may also have increased overall costs because it would require additional right-of-way. The 26th Street LMF Option would have greater potential environmental impacts related to geological and soils constraints, and hazards because of potential contamination on the site. Overall, the 26th Street LMF Option would be the preferred option.

4.4 Stations

4.4.1 Background

4.4.1.1 2018 High-Speed Rail Project Alternative

In addition to connecting LAUS with ARTIC, the 2018 HSR Project Alternative analyzed both the Norwalk/Santa Fe Springs and Fullerton Stations as intermediate stations.

The 2018 HSR Project Alternative proposes an elevated HSR station located adjacent to the existing Norwalk/Santa Fe Springs Transportation Center, and would feature an elevated station with four passenger tracks and three platforms. There would be two 680-foot Metrolink side platforms, and a single 1,000-foot center platform for HSR, with the alignment transitioning to the west side of the corridor north of the station for the remainder of the alignment until Buena Park. The existing BNSF tracks would remain in their current location. Currently, the existing Norwalk/Santa Fe Springs Transportation Center is at the border of the cities of Norwalk and Santa Fe Springs. Existing land uses around the FTC include a mix of residential, commercial, and industrial uses, along with public facilities and open space/recreation areas. The existing Norwalk/Santa Fe Springs Transportation Center is currently served by Metrolink’s Orange County and 91 lines. The station serves Metrolink commuter rail rider with park-and-ride lots and limited local bus connections. Vehicle access to the station and its parking area are available via two driveways just east and west of the LOSSAN Corridor along Imperial Highway. Pedestrian access to the station is available via sidewalks to Imperial Highway.

The 2018 HSR Project Alternative design for the proposed at-grade HSR station is located at the existing FTC and would feature five tracks and five platforms. Currently, the existing FTC is served by the Metrolink Orange County and 91/Perris Valley Line lines as well as the Amtrak Pacific Surfliner and Southwest Chief routes. Existing land uses around the FTC include a mix of residential, commercial, and industrial uses, along with public facilities and open space/recreation areas. HSR trainsets will have a floor height that interfaces with a 48-inch-high platform for level boarding. However, all current Metrolink and Amtrak platforms would have a height that is only 8 inches above top of rail. Therefore, HSR and Metrolink/Amtrak require separate platforms. There would be two Metrolink/Amtrak Pacific Surfliner side platforms (with a height of 8 inches above top of rail) directly connected to two HSR side platforms (with a height of 48 inches above top of rail). There would also be a Metrolink/Amtrak Southwest Chief side platform (with a height of 8 inches above top of rail). The 2018 HSR Project Alternative proposed to remove the existing pedestrian bridge crossing the railroad tracks and replace it with a pedestrian tunnel that would connect the existing South of Commonwealth (SOCO) West parking structure to the west end of the HSR platforms. This option included a new HSR station building and a new parking structure.

4.4.1.2 Shared Passenger Track Alternative

In addition to connecting LAUS with ARTIC, the Shared Passenger Track Alternative considers including up to one intermediate station: the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option. Given the close proximity of these stations, station limitations contained within Proposition 1A, and the fact other passenger operators serve both stations, the Shared Passenger Track Alternative will consider the intermediate stations as

design options and, within the Draft EIR/EIS analysis, evaluate a “No Intermediate Station Option,” a “Norwalk/Santa Fe Springs Intermediate Station Option,” and a “Fullerton Intermediate Station Option” (for more information see Attachment A: Los Angeles to Anaheim Project Section – Fullerton Station Platform Options Memorandum).

Two key developments within the Fullerton Station area have changed since the 2018 HSR Project Alternative that led the Authority to re-examine the design of the Fullerton Station:

In 2021, the Fullerton City Council approved an agreement with the Tracks at Fullerton project which is a mixed-use development at the current Fullerton Amtrak and Metrolink Parking. The project proposes residential, retail, restaurant, and parking land uses. Because of conflict with the 2018 HSR Project Alternative station design, additional platform and HSR parking options were examined for the Fullerton Station.

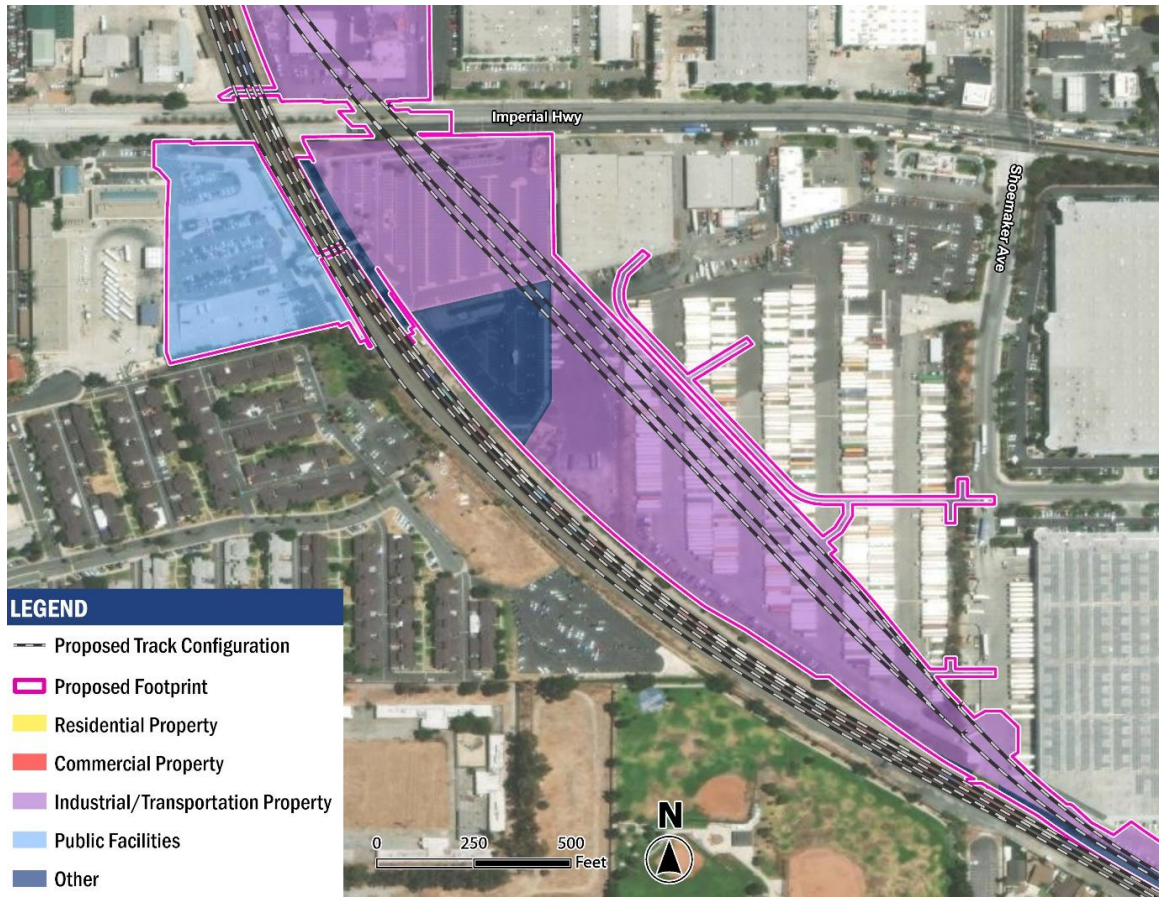
Rail operators⁷ are currently planning improvements to the tracks and platforms at the FTC as part of a project called the Fullerton Interlocker. As shown in Attachment A, this project would build a new center platform west of the current platforms bounded by a new fourth through track. Along with new and relocated turnouts, this would allow all Metrolink and LOSSAN trains to use the new platform and run on the south side of the BNSF’s rail corridor between Fullerton and Los Angeles. This project is currently being designed by BNSF in coordination with Metrolink and the Authority. In November 2023, Metrolink shifted the proposed Fullerton Interlocker Station 220 feet to the east, and therefore, the Authority had to reassess both platform options because of the altered circumstances.

4.4.2 Sites Under Consideration

4.4.2.1 *Norwalk/Santa Fe Springs No High-Speed Rail Station*

If there is No HSR Station built in Norwalk/Santa Fe Springs, the Authority would still propose a relocation of the existing Metrolink Station to accommodate the realigned passenger tracks. The proposed Metrolink Norwalk/Santa Fe Springs station would feature an elevated station with four passenger tracks and two platforms. There would be two 680-foot Metrolink side platforms, with the alignment transitioning to the west side of the corridor north of the station for the remainder of the alignment until Buena Park. The existing BNSF tracks would remain in their current location. If No HSR Station is built, no additional parking would be required for HSR passengers; however, the existing west side (west of current BNSF tracks) of Metrolink parking and bus drop-off would be moved to the eastside to provide better access to the proposed new station. An overview of the proposed station footprint is shown on Figure 4-11.

⁷ BNSF, Metrolink, and OCTA

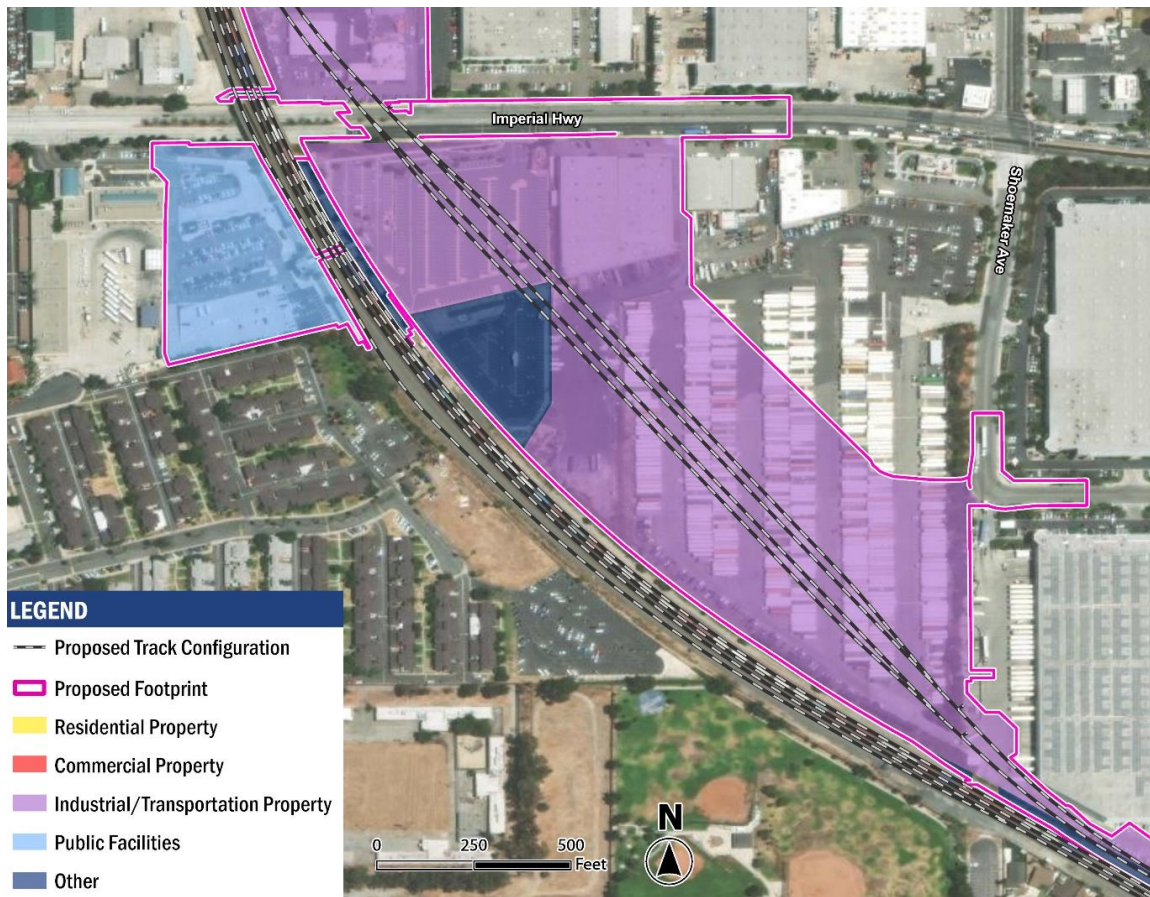


Source: Authority 2023

Figure 4-11 Norwalk/Santa Fe Springs No Station

4.4.2.2 Norwalk/Santa Fe Springs High-Speed Rail Station

The existing design for the proposed elevated HSR station located at the existing Norwalk/Santa Fe Springs Transportation Center would have the same design as the 2018 HSR Project Alternative, as described in Section 4.4.1, Background. The project would provide a total of 640 HSR parking spaces. An overview of the proposed station footprint is shown on Figure 4-12.

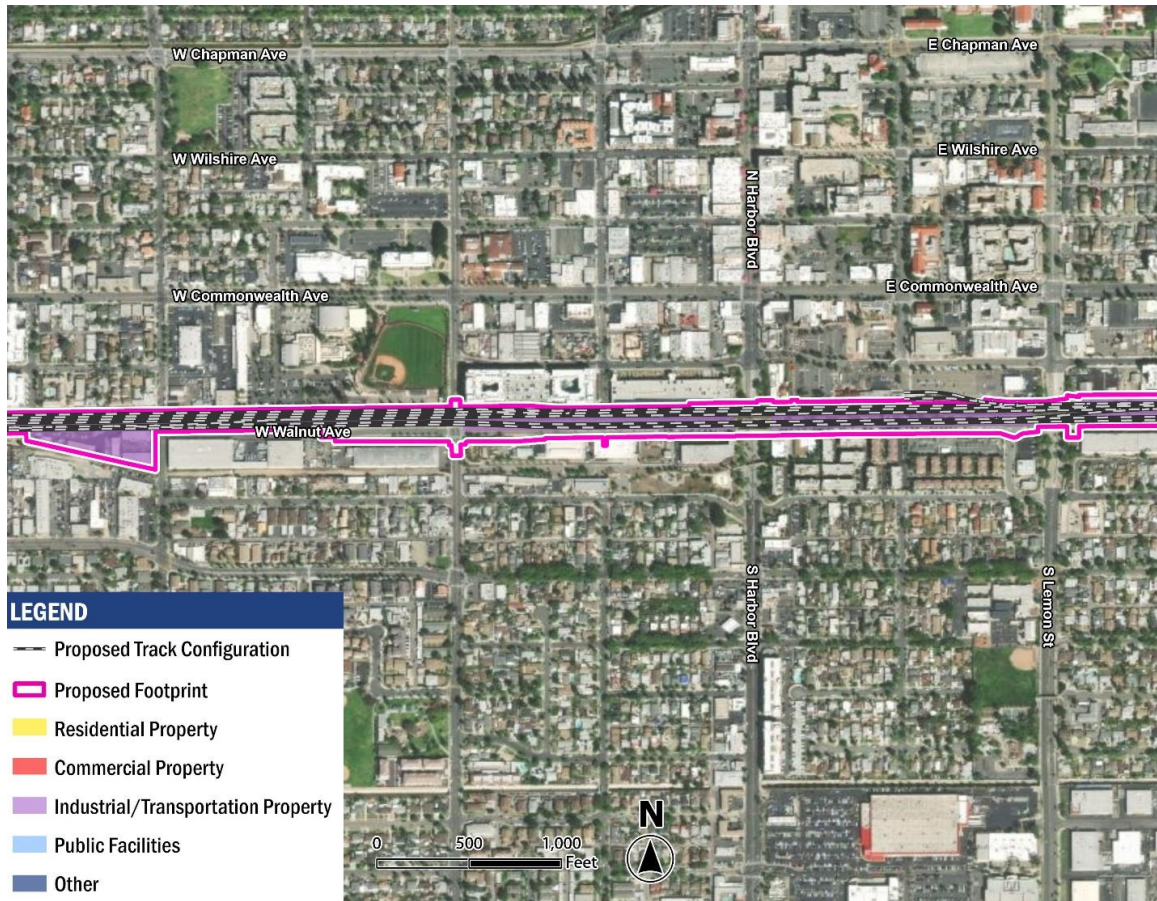


Source: Authority 2023

Figure 4-12 Norwalk/Santa Fe Springs Station

4.4.2.3 Fullerton No High-Speed Rail Station

If there is No HSR Station built in Fullerton, HSR trains would bypass the existing FTC. This would be done by modifying both ends of the Fullerton Interlocker Design to tie into the proposed HSR tracks to the west and east of the FTC, but with minimal changes at the FTC itself. If no HSR station is built, no additional parking would be required for HSR passengers at the FTC. A more detailed plan for this station is shown in Attachment A. An overview of the proposed Metrolink station footprint is shown on Figure 4-13.



Source: Authority 2023

Figure 4-13 Fullerton No Station

4.4.2.4 Fullerton High-Speed Rail Station

The proposed HSR station at Fullerton would be built approximately 550 feet west of the Metrolink’s proposed Fullerton Interlocker Station center platform. The center HSR platform would extend approximately 675 feet west over Highland Avenue, requiring new retaining walls on both sides of the HSR/Metrolink tracks to account for differences in the surrounding existing grades as shown in Attachment A. The HSR platform would be built at a platform height of 48 inches above top of rail and connected to the Metrolink platform.

This optional station proposes a station building and parking located just south of Walnut Avenue and west of Harbor Boulevard. The project would provide a total of 570 HSR parking spaces. An overview of the proposed platform is shown on Figure 4-14.



Source: Authority 2023

Figure 4-14 Fullerton Station

4.4.3 Evaluation of Station Options

Table 4-5 provides a qualitative comparison of the Shared Passenger Track Alternative with No Intermediate Station Option, with Norwalk/Santa Fe Springs Intermediate Station Option, and with Fullerton Intermediate Station Option by evaluation criteria. This analysis is based on preliminary engineering completed to date and environmental analyses conducted on available information.

Table 4-5 Comparison of Station Options

Consideration	No Intermediate Station Option	Norwalk/Santa Fe Springs Intermediate Station Option	Fullerton Intermediate Station Option
Maximize ridership/revenue potential	Least favorable	Most favorable	Most favorable
Maximize connectivity and accessibility	Least favorable	Most favorable	Most favorable
Minimize capital and operating costs	Most favorable	Least favorable	Least favorable
Development potential for TOD within walking distance of station	Least favorable	Most favorable	Most favorable
Maximize compatibility with existing and planned development	Least favorable	Most favorable	More favorable

Consideration	No Intermediate Station Option	Norwalk/Santa Fe Springs Intermediate Station Option	Fullerton Intermediate Station Option
Maximize constructability	Most favorable	Least favorable	Least favorable
Minimize disruption to existing railroads	Most favorable	Least favorable	Least favorable
Minimize disruption to and relocation of utilities	Most favorable	Least favorable	Least favorable
Displacements (a socioeconomic effect)	Most favorable	Least favorable	Least favorable
Property with access affected	Most favorable	More favorable	Least favorable
Minimize effects on traffic/ transportation	Least favorable	More favorable	More favorable
Minimize effects on air quality/GHG	Least favorable	Most favorable	Most favorable
Minimize effects of noise/vibration	Most favorable	Least favorable	Least favorable
Minimize effects of EMI/EMF	No key differentiating effects among the options.		
Minimize effects on public utilities and energy	Most favorable	Least favorable	Least favorable
Minimize effects on biological and aquatic resources	No key differentiating effects among the options.		
Minimize effects on hydrology and water quality	Most favorable	Least favorable	More favorable
Maximize avoidance of areas with geological and soils constraints	Most favorable	Least favorable	More favorable
Maximize avoidance of areas with potential hazardous material	Most favorable	More favorable	Least favorable
Minimize effects on safety and security	Most favorable	More favorable	More favorable
Minimize effects on socioeconomics and communities	Least favorable	Most favorable	Most favorable
Minimize effects on station planning, land use, and development	Most favorable	More favorable	Least favorable
Minimize effects on agriculture farmland and forest land	No key differentiating effects among the options.		
Minimize effects on parks, recreation, and open space	More favorable	More favorable	Least favorable
Minimize effects on aesthetics and visual quality	No key differentiating effects among the options.		
Minimize impacts on cultural resources	Most favorable	More favorable	Least favorable
Minimize effects on Section 4(f)/6(f) resources	Most favorable	More favorable	Least favorable
Minimize effects on environmental justice (a socioeconomic effect)	Least favorable	Most favorable	Most favorable

Source: Authority 2023

EMI/EMF = electromagnetic interference/electromagnetic field; GHG = greenhouse gas; TOD = transit-oriented development

4.4.4 Environmental Impacts

The Authority has analyzed the individual qualitative impacts of having No Intermediate Station Option, Norwalk/Santa Fe Springs Intermediate Station Option, and Fullerton Intermediate Station Option. The following key differentiating effects were considered in identifying the preferred option:

- Transportation/Traffic
- Air Quality/GHG
- Noise and Vibration
- Hydrology/Water Quality and Geological and Soils Constraints
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics and Communities
- Station Planning, Land Use, and Development
- Parks, Recreation and Open Space
- Cultural Resources
- Section 4(f) and 6(f) Resources
- Environmental Justice

Several environmental impacts are assumed to be lessened with a smaller project footprint and fewer construction impacts, as stated earlier in Section 3.2. For example, the Shared Passenger Track Alternative with No Intermediate Station Option would have a smaller project footprint than with either the Norwalk/Santa Fe Springs Intermediate Station Option or Fullerton Intermediate Station Option included. These station options require additional ground disturbance for construction for a larger site option, which could result in greater direct impacts on stormwater flow, geological and soils constraints, cultural, or Section 4(f) resources impacts affecting potential resources, or larger costs for construction. Therefore, with the No Intermediate Station Option, there would be fewer construction impacts on biological and aquatic resources, hydrology and water quality, geological and soils constraints, hazards, cultural resources, and Section 4(f) resources. With the No Intermediate Station Option, future HSR users may need to transfer using a different transit method (bus or personal vehicle) or travel farther to the next, nearest station, which could result in additional transfers, vehicle miles traveled, costs, and potentially travel delay for HSR passengers. However, building an intermediate station would allow more convenient and cheaper transportation options, especially in high minority and poverty areas, providing a benefit to environmental justice communities. Additional discussion for key topics is provided below.

4.4.4.1 Transportation/Traffic

Construction and operation of the Norwalk/Santa Fe Springs Intermediate Station Option and Fullerton Intermediate Station Option would have a greater impact on traffic flow, circulation, and access than those associated with implementation of the No Intermediate Station Option. Constructing an intermediate station could impact access to adjacent residential and industrial land uses and create additional detours within the vicinity of station sites. The No Intermediate Station Option would be consistent with the City of Fullerton's Transportation Specific Plan, which aims to remove public parking facilities within the downtown area.

With the No Intermediate Station Option, future HSR users from the Norwalk/Santa Fe Springs and Fullerton areas would need to transfer using a train service already serving the Metrolink Stations, a different transit method, or travel to the nearest HSR station, which is LAUS to the north or ARTIC to the south. Trips via personal automobile would add additional vehicle miles traveled, although transit options are available at each station site and stations are only 30 miles apart. However, operation of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option could reduce traffic at a regional scale by creating more non-motorized transportation mobility options compared to the No Intermediate Station Option. The Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would have more beneficial impacts on transportation and traffic than the No Intermediate Station Option.

4.4.4.2 Air Quality/Greenhouse Gases

Construction activity associated with either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would be greater than those associated with the implementation of the No Intermediate Station Option, and therefore would have greater air quality/GHG impacts during construction. Additionally, construction of either the Norwalk/Santa

Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would extend the overall project construction schedule and result in greater emissions. However, the operation of an intermediate station could reduce regional air quality/GHG emissions as users near the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would have fewer vehicle miles to and from the HSR system during operations. Fewer long-term emissions and greater non-motorized vehicle transportation options associated with the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would result in overall improvements to air quality when compared to the No Intermediate Station Option.

4.4.4.3 Noise and Vibration

Construction and operational activity associated with either Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would be greater than that associated with the No Intermediate Station Option. Construction of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would result in similar magnitudes of noise effects as sensitive receivers are similar for both intermediate station areas. Both Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option already function as existing transit stations and would continue to even with the No Intermediate Station Option. The Norwalk/Santa Fe Springs Intermediate Station Option is bordered by residential land uses to the west and northeast and the Fullerton Intermediate Station Option is bordered by residential land uses to the south. There would be fewer noise and vibration related impacts associated with the No Intermediate Station Option than with either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Options.

4.4.4.4 Hydrology/Water Quality and Geological and Soils Constraints

Several environmental impacts are assumed to be lessened with a smaller project footprint and fewer required construction-related activities. The No Intermediate Station Option, which has an overall smaller project footprint than either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option, would have fewer construction impacts on hydrology and water quality and geological and soils constraints.

4.4.4.5 Hazardous Materials and Wastes

There would be similar impacts for both the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option as the stations are in geographically similar areas adjacent to the railroad right-of-way (an industrial use). However, when compared to the No Intermediate Station Option, the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would require a larger construction area and additional impacts could result. The Norwalk/Santa Fe Springs Intermediate Station Option would affect one additional known site of concern within the footprint of the station site. The Fullerton Intermediate Station Option could have greater hazard potential with three known sites of concern and would not avoid existing potentially hazardous waste properties in locations of proposed facilities including parking. The sites are adjacent to existing transportation centers and industrial land uses, and there are no inactive oil/gas facilities within or adjacent to the station site. Overall, the No Intermediate Station Option would result in fewer hazards with a smaller footprint than the Norwalk/Santa Fe Springs Intermediate Station Option which includes one additional known potential site of concern within the footprint of the station site, and the Fullerton Intermediate Station Option would result in more known contamination sites and greater impacts.

4.4.4.6 Safety and Security

Construction of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would require equipment brought to and from the sites, which could create additional temporary and permanent interference with emergency response access. There are no wildfire hazard zones or similar concerns in this area of the project. There would be fewer emergency response access related impacts with the No Intermediate Station Option than with

the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option.

4.4.4.7 Socioeconomics and Communities

There would be similar impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option as the stations are in geographically similar areas adjacent to the railroad right-of-way. Construction of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option is expected to create short-term employment opportunities associated with construction activities, but may also have temporary adverse effects on community cohesion, disrupt existing communities, and displace businesses. Long-term project operations associated with the Norwalk/Santa Fe Springs Intermediate Station Option and Fullerton Intermediate Station Option would contribute to employment, generate sales tax revenue, and lead to the creation of additional direct, indirect, and induced jobs. As operations of the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option could result in employment opportunities and generate sales tax revenue, the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would have greater beneficial socioeconomic and community impacts than the No Intermediate Station Option.

4.4.4.8 Station Planning, Land Use, and Development

Construction of either the Norwalk/Santa Fe Springs Fullerton Intermediate Station Option or the Fullerton Intermediate Station Option would have similar noise, vibration, air quality, traffic, and aesthetics impacts on land use, as modifications would involve major construction activities (e.g., clearing, grading, track installation) that would generate increased noise levels, dust and other air pollutants, and traffic. Additionally, temporary visual changes caused by the presence of construction equipment in the project footprint would occur. Adjacent lands for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option are designated as transportation—railroad, industrial, and mixed commercial. For the Fullerton Intermediate Station Option, additional residential and recreational uses would be affected. Construction could result in temporary incompatibility with commercial uses adjacent to temporary construction easements because of disruptive impacts of the project, such as fugitive dust generation, construction noise and vibration, construction-related traffic conflicts. This could result in impacts on adjacent residents and businesses. Both the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would require additional acquisition of land for construction and operations in comparison to the No Intermediate Station Option. The Norwalk/Santa Fe Springs Intermediate Station Option would require the acquisition of seven additional parcels and the Fullerton Intermediate Station Option would require the acquisition of four additional parcels in comparison to the No Intermediate Station Option.

According to the respective general plans, opportunities exist for increasing development densities compatible with transit-oriented development in the proposed HSR station area for Norwalk/Santa Fe Springs and Fullerton. HSR service to Norwalk/Santa Fe Springs and Fullerton could have the indirect benefit of attracting development to these station areas. The Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option areas have been and would be planned to accommodate increased densities near and around the proposed stations even without HSR service as transit opportunities already exist at these station sites. As the Fullerton Intermediate Station Option would require acquisitions of areas specifically for parking, the No Intermediate Station Option would have fewer impacts on the community and would be consistent with the City of Fullerton's Transportation Specific Plan, which aims to remove public parking facilities within the downtown area. The Fullerton Intermediate Station Option would have the greatest impacts on adjacent land uses and require the most property acquisitions while the No Intermediate Station Option would have the fewest impacts on adjacent properties and require the fewest parcel acquisitions.

4.4.4.9 Parks, Recreation and Open Space

The Norwalk/Santa Fe Springs Intermediate Station Option and adjacent areas do not contain existing park, recreation, and open space lands, and no conflict is anticipated. However, the Fullerton Intermediate Station Option is adjacent to existing parks and planned trails, and a potential conflict may occur with a trail not yet built but planned along the former railroad right-of-way between Walnut and Truslow Avenues (Backbone Trail). As such, the Fullerton Intermediate Station Option would have more impacts.

4.4.4.10 Cultural Resources

Both the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option are within a highly developed area that would not have a high likelihood of containing significant cultural-archaeological resources. However, construction of the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would require construction activities that could cause physical destruction of, damage to, or alteration of archaeological resources. For either station option, State Historic Preservation Officer review and concurrence would be required, and impacts on archaeological resources would be greater than the No Intermediate Station Option. There are several built historic resources, such as the Elephant Packing House near the Fullerton Intermediate Station Option that could be affected during construction, whereas no historic resources are anticipated within the Norwalk/Santa Fe Springs Intermediate Station Option site or No Intermediate Station Option footprints. The Fullerton Intermediate Station Option would have more impacts as built historic resources could be affected during construction.

4.4.4.11 Section 4(f) and 6(f) Resources

Properties and Section 4(f) resources could be affected by construction of the Fullerton Intermediate Station Option, specifically for additional built environment resources like Elephant Packing House and a trail not yet built (Backbone Trail) within the station footprint. There are no Section 4(f) resources within the footprint of the Norwalk/Santa Fe Springs Intermediate Station Option. There are no Section 6(f) properties anticipated to be affected by the Fullerton Intermediate Station Option, Norwalk/Santa Fe Springs Intermediate Station Option or the No Intermediate Station Option; therefore, there would be no impact on Section 6(f) properties. Overall, the Fullerton Intermediate Station Option would have more Section 4(f) impacts than the Norwalk/Santa Fe Springs Intermediate Station Option or the No Intermediate Station Option.

4.4.4.12 Environmental Justice

There would be similar impacts on EJ communities for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option. Construction of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would displace industrial and other land uses and result in additional impacts. Construction and operation of intermediate stations could result in the following temporary and permanent adverse or beneficial effects on EJ populations:

- Hazardous materials and wastes: potentially adverse effect with greater impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option.
- Air quality: potentially adverse effect during construction with greater impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option during construction, but lesser impacts for operations as there would be fewer vehicle miles traveled with additional transit options available at each station site.
- Noise and vibration: potentially adverse effect with greater impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option during construction

- Archaeological and historic resources: potentially adverse impact with greater impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option, with the greatest impacts for the Fullerton Intermediate Station Option.
- Community cohesion: greater benefits with improved transportation facilities for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option.
- Economic vitality: greater benefits for the Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option.
- Acquisitions: impacts from acquisitions or other property impacts with greater impacts for the Norwalk/Santa Fe Springs Intermediate Station Option and Fullerton Intermediate Station Option.
- Employment: potentially beneficial effects related to construction and maintenance jobs, with greater benefits for the Norwalk/Santa Fe Springs Intermediate Station Option and Fullerton Intermediate Station Option.
- Transportation: potentially beneficial effect with better circulation and greater benefits for the Norwalk/Santa Fe Springs Intermediate Option and Fullerton Intermediate Station Option with improved bicycle and pedestrian facilities and improve access and safety, although will result in greater construction impacts.

The Norwalk/Santa Fe Springs Intermediate Station Option and the Fullerton Intermediate Station Option would provide additional rail transportation options within and outside the region for people in Norwalk, Santa Fe Springs, and Fullerton who do not have a car. Improvements in accessibility and creation of jobs could result in long-term economic benefits. The Norwalk/Santa Fe Springs Intermediate Station Option or Fullerton Intermediate Station Option would be more favorable as it would result in greater benefits related to improvements in accessibility, job creation and other economic benefits during the long term although would have greater short term construction impacts.

4.4.5 Staff Recommendation

The Authority's staff recommends that the No Intermediate Station Option, the Norwalk/Santa Fe Springs Intermediate Station Option, and the Fullerton Intermediate Station Option be evaluated in the Draft EIR/EIS, but that the Board identify the No Intermediate Station Option for the PA because of the following key differentiators:

- With a smaller project footprint, the No Intermediate Station Option would have fewer impacts on the community and best align with the City of Fullerton's Transportation Specific Plan, which aims to remove public parking facilities within the downtown area.
- The No Intermediate Station Option would have the lowest costs compared to either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option.
- LAUS and ARTIC are only 30 miles apart: the Norwalk/Santa Spring Intermediate Station Option would be 13 miles from ARTIC and 10 miles from the Fullerton Intermediate Station Option. The Fullerton Intermediate Station Option would only be 10 miles from the ARTIC Station. Existing passenger rail service, provided by Amtrak and Metrolink, already provides connection among ARTIC, Fullerton, Norwalk/Santa Fe Springs, and LAUS stations. As Proposition 1A limits the number of HSR stations that can be built, construction of either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option could preclude future station development throughout the larger, Los Angeles to Riverside to San Diego Corridor and the entire HSR system.

Although either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option would have greater benefits related to transit-oriented development and EJ communities, there would be greater construction impacts on environmental resources,

such as hydrology and water quality, geological and soils constraints, hazards, cultural resources, and Section 4(f) resources. Therefore, the No Intermediate Station Option is recommended as the preferred station configuration for the Shared Passenger Track Alternative.

4.5 Capital Cost

Table 4-6 shows the costs of the Shared Passenger Track Alternative from Los Angeles to Anaheim Project Section in 2023 dollars. The cost estimate for the Shared Passenger Track Alternative under the 12 scenarios (LMF, Grade Crossings, and Intermediate Station Options) includes the total effort and materials necessary to build the project section, including the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option, maintenance facilities, and modifications to roadways required to accommodate grade-separated guideways.

Table 4-6 Capital Cost of Alternatives and Options

Shared Passenger Track Alternatives	Cost (2023 Dollars)
A: LAUS* to ARTIC with no intermediate station and Southern California LMF at 26th Street with mostly at-grade crossings	\$6,654,000,000
A1: LAUS* to ARTIC with Norwalk/Santa Fe Springs Intermediate Station Option and Southern California LMF at 26th Street with mostly at-grade crossings in Anaheim	\$6,775,000,000
A2: LAUS* to ARTIC with Fullerton Intermediate Station Option and Southern California LMF at 26th Street with mostly at-grade crossings in Anaheim	\$6,908,000,000
B: LAUS* to ARTIC with no intermediate station and Southern California LMF at 15th Street with mostly at-grade crossings in Anaheim	\$6,654,000,000
B1: LAUS* to ARTIC with Norwalk/Santa Fe Springs Intermediate Station Option and Southern California LMF at 15th Street with mostly at-grade crossings in Anaheim	\$6,775,000,000
B2: LAUS* to ARTIC with Fullerton Intermediate Station Option and Southern California LMF at 15th Street with mostly at-grade crossings in Anaheim	\$6,908,000,000
C: LAUS* to ARTIC with no intermediate station and Southern California LMF at 26th Street with mostly grade-separated crossings in Anaheim	\$7,029,600,000
C1: LAUS* to ARTIC with Norwalk/Santa Fe Springs Intermediate Station Option and Southern California LMF at 26th Street with mostly grade-separated crossings in Anaheim	\$7,150,600,000
C2: LAUS* to ARTIC with Fullerton Intermediate Station Option and Southern California LMF at 26th Street with mostly grade-separated crossings in Anaheim	\$7,283,600,000
D: LAUS* to ARTIC with no intermediate station and Southern California LMF at 15th Street with mostly grade-separated crossings in Anaheim	\$7,029,600,000
D1: LAUS* to ARTIC with Norwalk/Santa Fe Springs Intermediate Station Option and Southern California LMF at 15th Street with mostly grade-separated crossings in Anaheim	\$7,150,600,000
D2: LAUS* to ARTIC with Fullerton Intermediate Station Option and Southern California LMF at 15th Street with mostly grade-separated crossings in Anaheim	\$7,283,600,000

Source: Authority 2023

*LAUS is included (and environmentally cleared) within the Burbank to Los Angeles Project Section

ARTIC = Anaheim Regional Transportation Intermodal Center; LAUS = Los Angeles Union Station; LMF = light maintenance facility

5 STAFF RECOMMENDATION

The 2023 SAA concluded that the Shared Passenger Track Alternative had the best balance among the project objectives, environmental impacts on natural resources and community concerns, and stakeholders' input. In response to input from community stakeholders, businesses, local agencies, and elected officials, the Authority has further refined the design of the Shared Passenger Track Alternative into two alternatives:

- **Shared Passenger Track Alternative A**, which includes the Mostly At-Grade Anaheim Option, Southern California LMF – 26th Street Option, and No Intermediate Station Option
- **Shared Passenger Track Alternative B**, which includes the Mostly At-Grade Anaheim Option, Southern California LMF – 15th Street Option, and No Intermediate Station Option

Among these two alternatives, Authority staff recommend that Shared Passenger Track Alternative A, as shown on Figure 5-1, be adopted by the Board as the PA for the Los Angeles to Anaheim Project Section.

5.1 Anaheim Grade Crossings

The 2018 HSR Project Alternative suggested grade-separating existing at-grade crossings in Anaheim with significant impacts on cost, environmental resources, and construction timelines. As discussed in Section 4.2.4, Staff Recommendation, the Authority is recommending the Mostly At-Grade Anaheim Option for the Shared Passenger Track Alternative based on several factors, such as consistency with FRA regulations for trains moving at speeds less than 125 mph, minimum community disruption, and lower cost. The Mostly At-Grade Anaheim Option is also consistent with approaches used in other project sections of the HSR system. Environmental clearance is recommended for proposed grade separations at Cerritos Avenue and State College Boulevard to accommodate layover tracks, while maintaining all other at-grade crossings from Fullerton to ARTIC to minimize potential impacts.

5.2 Light Maintenance Facility

As discussed in Section 4.3.5, Staff Recommendation, the Authority recommends selecting the Southern California LMF – 26th Street Option because of various advantages, such as operational advantages and access to the layover yard and more trackage. While the 15th Street LMF Option is closer to LAUS and has a smaller footprint, it poses greater potential impacts on historic bridges and cultural resources. Additionally, it lacks bidirectional access, increasing track fouling risks and operational issues.

5.3 Stations

As discussed in Section 4.4.5, Staff Recommendation, the Authority recommends selecting the No Intermediate Station Option because of various advantages, including its smaller project footprint, which aligns with the City of Fullerton's Transportation Specific Plan, and reduced community impacts. Additionally, the No Intermediate Station Option presents the lowest costs compared to either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option. While both Norwalk/Santa Fe Springs Intermediate Station and Fullerton Intermediate Station offer advantages in terms of transit-oriented development, they would result in greater construction and environmental impacts. Additionally, existing passenger rail service already provides connection among LAUS, Norwalk/Santa Fe Springs, Fullerton, and ARTIC stations.

5.4 Conclusion

Authority staff recommends that the Board identify Shared Passenger Track Alternative A (with the Mostly At-Grade Anaheim Option, Southern California LMF – 26th Street Option, and No Intermediate Station Option) as the PA for the purpose of preparing the Los Angeles to Anaheim Project Section EIR/EIS. This identification will allow the public and other stakeholders to focus their attention and comments on the PA during their review of the draft environmental document.

Authority staff also recommends that Shared Passenger Track Alternative B (with Mostly At-Grade Option, Southern California LMF – 15th Street Option, and No Intermediate Station Option) be studied within the environmental document and that both Shared Passenger Track Alternatives A and B consider either the Norwalk/Santa Fe Springs Intermediate Station Option or the Fullerton Intermediate Station Option as design options. This would allow the Board to select an intermediate station later in the planning process.

If the Board accepts the staff recommendation, Shared Passenger Track Alternative A will be identified as the State PA in the Draft EIR/EIS. The Authority will release the Draft EIR/EIS for public and agency review and comment and will take those comments into consideration in developing the final environmental document.

The Board is neither adopting nor approving an alternative for construction at this time. No alternative will be approved until completion of the final environmental document. Staff will return to the Board in the future to consider approving an alignment for the project section, informed by the final environmental document.



Figure 5-1 Shared Passenger Track Alternative: Preferred Alternative

6 REFERENCES

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ATTACHMENT A: LOS ANGELES TO ANAHEIM PROJECT SECTION – FULLERTON STATION PLATFORM OPTION MEMORANDUM



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MEMO

TO: Simon Tse, HSR Project Manager Los Angeles to Anaheim Project Section
LaDonna DiCamillo, Southern California Regional Director

FROM: Tyler Bonstead, Los Angeles to Anaheim STV Project Manager

DATE: April 15, 2024

SUBJECT: Los Angeles to Anaheim Section – Fullerton Station Platform Options

1 Purpose

The Authority is evaluating two station design configuration options for consideration within the Fullerton Station area, designated as the West Platform and East Platform options. Only one of these options would move forward in the Los Angeles to Anaheim Environmental Impact Report/Environmental Impact Statement (EIR/EIS). These new station configuration options are intended to be more compatible with the surrounding community, local plans, and regional rail projects in the City of Fullerton. Additionally, to meet the needs of the HSR project, potential parking locations within the City of Fullerton for the West and East Platform options were analyzed. Preliminary ridership studies indicate that the proposed Fullerton Station would require a total of 940 parking spaces for HSR passengers. The purpose of this memo is to provide background information, a summary of the analysis, and a recommendation to further analyze the West Platform option in the Los Angeles to Anaheim EIR/EIS.

2 Background

Currently, the existing Fullerton Transportation Center (FTC) is served by the Metrolink Orange County and 91/Perris Valley lines as well as the Amtrak Pacific Surfliner and Southwest Chief routes. Existing land uses around the FTC include a mix of residential, commercial, and industrial uses, along with public facilities and open space/recreation areas.

The 2018 HSR Project Alternative design proposed an at-grade HSR station at Fullerton, located at the existing FTC, featuring five tracks and five platforms. HSR platforms will be at 48 inches above top of rail to facilitate level boarding. However, all current Metrolink and Amtrak platforms would have a height that is only 8 inches above top of rail. Therefore, HSR and Metrolink/Amtrak require separate platforms. As shown in Attachment A, there would be two Metrolink/Amtrak Pacific Surfliner side platforms (with a height of 8 inches above top of rail) directly connected to two HSR side platforms (with a height of 48 inches above top of rail). There would also be a Metrolink/Amtrak Southwest Chief side platform (with a height of 8 inches above top of rail). The 2018 HSR Project Alternative proposed to remove the existing pedestrian bridge crossing the railroad tracks and replace it with a pedestrian tunnel that would connect the existing South of Commonwealth (SOCO) West parking

structure to the west end of the HSR platforms. This option included a new HSR station building and a new parking structure.

Three conditions in the station area changed since the 2018 HSR Project Alternative that led the Authority to re-examine the design of the Fullerton Station:

- In 2021, the Fullerton City Council approved an agreement with Parkwest General Contractors for a mixed-use development at the location of the current FTC. The project proposes residential, retail, restaurant, and parking uses. Due to conflict with the 2018 HSR Project Alternative station design, additional platform and parking options were examined for the Fullerton Station.
- Other rail operators in this corridor are currently planning improvements to the tracks and platforms at the FTC as part of a project called the Fullerton Interlocker. As shown in Figure 1, the Fullerton Interlocker project would construct a new center platform west of the current platforms bounded by a new, fourth, through-track. Along with new and relocated train turnouts, this would allow all Metrolink and Amtrak Pacific Surfliner trains to use the new platform and run on the south side of the BNSF’s rail corridor between Fullerton and Los Angeles. Further modifications were recently implemented to the Fullerton Interlocker, causing a shift of the center platform east, as shown in Figure 2. This project is currently being designed by BNSF Railway in coordination with Metrolink and the Orange County Transportation Authority (OCTA), while the Authority has reviewed and provided feedback on the proposed design.
- With the 2023 Supplemental Alternatives Analysis, the Authority introduced the Shared Passenger Track Alternative as the proposed new build alternative due to its ability to best meet the Project’s Purpose and Need while servicing the largest number of potential passengers and providing the most cost-effective rail system. The Shared Passenger Track Alternative will consider building either one intermediate station or no intermediate station between Los Angeles Union Station and Anaheim Regional Transit Intermodal Center (ARTIC).

Figure 1. Earlier Configuration of Fullerton Interlocker Project



Figure 2. Current Proposed Configuration of Fullerton Interlocker Project



3 Design Configuration Options under Consideration

3.1 Fullerton West Platform

The proposed HSR West Platform would be built directly west of the Metrolink’s proposed Fullerton Interlocker Station center platform. The center HSR platform would extend approximately 1,000 feet west over Highland Avenue, requiring new retaining walls on both sides of the HSR and Metrolink tracks to account for differences in the surrounding existing grades. The HSR platform would be constructed at a height of 48 inches above the top of rail and connected via ramps and paths to the Metrolink platform, constructed at a height of 8 inches above the top of rail. The West Platform will continue to be refined to meet standards of the California Public Utilities Commission (CPUC) which prohibits freight trains from passing tracks with a platform elevation exceeding 8 inches above the top of the rail, a height that HSR platforms will exceed.

This platform option would provide a station building and parking to accommodate the proposed HSR station. The proposed three parcels to be converted into HSR parking and station facilities would be located just south of Walnut Avenue between Highland and Richman Avenues. These three parcels would accommodate a total of up to 1,114 HSR parking spaces and the required HSR station facilities. An overview of the proposed platform and parking options is shown in Figure 3, Attachment B, and Attachment D.

Figure 3. Proposed Fullerton West Platform, Station Building, and Parking – Overview



Source: Authority, 2023

3.2 Fullerton East Platform

The proposed HSR East Platform would be built approximately 800 feet east of the Metrolink center platform. Due to the need for the 91-line Metrolink trains to continue east to the Inland Empire on the BNSF tracks and the proximity of the Fullerton Junction interlocking and curves, additional crossovers would be required between the Metrolink and HSR platforms. Thus, the HSR center platform would not be directly adjacent nor connected to the Metrolink platform. This would place the easterly end of the HSR platform partially within the existing curvature of Fullerton Junction and therefore, requires that a portion of the platform be curved. Per HSR standards, a curved platform would be considered a “non-standard” design and will require variance approval from the Authority. A more detailed plan for this station is shown in Attachment C.

This platform option would provide a station building and parking to accommodate the proposed HSR station. The two parcels proposed to be converted into HSR parking and station facilities would be located on the southwest and southeast parcels at Lemon Street and East Santa Fe Avenue. These parcels could accommodate up to 1,114 HSR parking spaces and the required HSR station facilities. An overview of the proposed East Platform and parking options is shown in Figure 4, Attachment C and Attachment D.

Figure 4. Proposed Fullerton East Platform and Parking – Overview



Source: Authority, 2023



4 Evaluation/Screening Criteria (Pre-November 2023 Fullerton Interlocker project updates)

Table 1 provides a high-level evaluation of the costs, benefits, and impacts of the West and East Platform options at the current level of design¹. This table provides observations of the impacts on the various considerations compared to the platform options.

Table 1. Comparison of Fullerton Station Platform Options

Consideration	West Platform	East Platform
Maximize ridership/revenue potential	The West and East Platform would not vary greatly, both provide similar ridership/revenue potential.	
Maximize connectivity and accessibility	The West Platform and proposed parking location would be less convenient for passengers connecting to downtown Fullerton and/or transferring to other transportation modes from the Fullerton Transportation Center than the East Platform. However, transfers to other rail operators would be more convenient than the East Platform.	The East Platform and proposed parking location would provide better connections to downtown Fullerton and its transportation network than the West Platform. However, there would be a less direct and convenient transfer to other rail operators than the West Platform.
Minimize capital and operating costs	The West Platform would have slightly higher capital costs than the East Platform due to the need to provide retaining walls for tracks and an additional parcel for parking. There would be no difference in operating and maintenance costs between the West and East Platform options. The West Platform would require modifications to the existing Bridge Soffit over Highland Ave and would need to lower the roadway to maintain the minimum clearance.	The East Platform would have slightly lower capital costs than the West Platform without the need for a retaining wall and with fewer acquisitions. There would be no difference in operating and maintenance costs between the West and East Platform options.

¹ The evaluations were based on the outdated station options (i.e., pre-November 2023 update).



Consideration	West Platform	East Platform
Development potential for Transit Oriented Development (TOD) within walking distance of station	The West Platform would have less potential for TOD than the East Platform option because the City of Fullerton does not have any plans for additional development in this area and it is located near industrial and low-density residential uses.	The East Platform would have greater potential for TOD than the West Platform due to the City of Fullerton's plans for mixed use development east of Lemon Street.
Maximize compatibility with existing and planned development	<p>The West Platform would be less compatible with existing development than the East Platform, due to existing adjacent industrial and low-density residential land uses.</p> <p>Proposed parking locations would have minimal conflict with local plans than the proposed parking locations for the East Platform, with existing development such as the adjacent industrial land uses.</p> <p>The West and East platform options are roughly equidistant to the existing Harbor Boulevard commercial corridor. The West platform option is more proximate to existing civic uses, including the Fullerton City Hall, Public Library, and the Community Center.</p>	<p>The East Platform would better help achieve the goals of the City of Fullerton's Transportation Specific Plan, such as the TOD land uses around transportation facilities.</p> <p>Proposed parking locations would be less compatible than the West Platform, due to it being within the City of Fullerton's Transportation Specific Plan, which aims to remove public parking facilities.²</p> <p>The West and East platform options are roughly equidistant to the existing Harbor Boulevard commercial corridor. The East platform option is more proximate to Lemon Street and existing commercial and industrial uses.</p>
Maximize constructability	The West Platform would have fewer constructability issues as it can be built in a relatively straight forward process to the west of the proposed Interlocker Platform. The reconstruction of adjacent Walnut Avenue would likely require temporary disruption to the surrounding properties.	The East Platform would require additional construction phasing compared to the West Platform, due to the need for the reconstruction and shifting of BNSF and Metrolink tracks, to accommodate the HSR platform. Construction impacts could be mitigated if the Fullerton Interlocker was built "future-forward" with the center siding geometry accommodated.

² The West Platform is not located within the Fullerton's Transportation Specific Plan.



Consideration	West Platform	East Platform
Minimize disruption to existing railroads	The West Platform would have fewer disruptions to railroads than the East Platform. As the station would be west of the Fullerton Interlocker, the track and signals for the Fullerton Interlocker project would not be impacted. However, the west control point would need to be relocated and modified significantly, and new switches would need to be added to ensure that freight trains could bypass the high level HSR platform.	The East Platform would have greater disruptions to railroads than the West Platform. The tracks and signals of the BNSF Fullerton Interlocker plan would need to be revised to accommodate all crossover moves.
Minimize disruption to and relocation of utilities	The West Platform would have greater utility impacts because it would take a larger portion of Walnut Avenue than the East Platform.	The East Platform would have fewer utility impacts than the West Platform.
Displacements	<p>The West Platform would require additional HSR parking to be constructed in the City of Fullerton, which would require potential displacements.</p> <p>The West Platform would convert three industrial parcels located just south of Walnut Ave and west of Harbor Boulevard into parking and the station building.</p>	<p>The East Platform would require additional HSR parking to be constructed in the City of Fullerton, which would require potential displacements.</p> <p>The East Platform would convert two parcels located east of the proposed HSR parking lot, automotive shop, a train signal yard, and an overbuild at Lemon St, into parking and the station building.</p>
Property with access affected	For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. The West and East Platform options would create access disruptions that would be localized adjacent to the platform locations during construction. Properties with access affected would be acquired for use for station parking and facilities.	
Traffic/ transportation	Construction-period traffic impacts would result in impacts to roadway segments and intersections before mitigation. The West Platform would have a greater impact to traffic flow, circulation, and access due to its proximity to residential land uses during both construction and operation than the East Platform. Retaining wall material hauls would entail additional trucks transporting more materials for project construction. The West Platform would result in the most roadway segment and intersection impacts.	Construction-period traffic impacts would result in impacts to roadway segments and intersections before mitigation. The East Platform would have a lesser impact on traffic flow, circulation. It would provide better station access due to its connection from the freeway and accessibility through local streets. The East Platform would result in fewer roadway segment and intersection impacts than the West Platform as there would be no retaining wall haul trucks needed to transport for project construction.



Consideration	West Platform	East Platform
Air quality/GHG	<p>Construction, including demolition of existing structures, and operational impacts would be similar for both options with localized impacts at platform locations. Further, construction-period pollutant emissions from construction activities, materials hauling, and construction-period traffic delays, would result in exceedance of general thresholds for pollutant emissions. While the West and East Platform options would likely exceed these thresholds at some point during construction, the West Platform would exceed thresholds more due to additional trucks transporting retaining wall materials for project construction. The West Platform would also result in greater amounts of GHG emissions during construction. Both platform options would improve regional air quality due to an anticipated reduction in highway travel.</p>	<p>Construction, and operational impacts would be similar for both options. While the West and East Platform options would likely exceed these thresholds at some point during construction, the East Platform would exceed thresholds by less due to fewer trucks transporting materials, specifically for the retaining walls during project construction. The East Platform would also result in the least amount of GHG emissions during construction. Both platform options would improve regional air quality due to an anticipated reduction in highway travel.</p>
Noise/vibration	<p>The West and East Platform options would result in similar magnitudes of noise effects and have similar noise/vibration impacts due to proximity to sensitive receptors such as residential homes. Operational noise impacts would largely occur around stations, while operational vibration impacts would occur along the alignment. However, the West Platform would potentially have greater impacts due to nearby Independence Park in addition to residential sensitive receptors.</p>	<p>The West and East Platform options would result in similar magnitudes of noise effects and have similar noise/vibration impacts due to proximity to sensitive receptors such as residential homes but avoids any parks. Thus, the East Platform would have potentially fewer noise/vibration impacts.</p>
EMI/EMF	<p>For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. No effects/impacts are anticipated.</p>	
Public utilities and energy	<p>For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. No effects/impacts are anticipated.</p>	
Biological and aquatic resources	<p>For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. Both platform areas are highly developed and existing vegetation is listed as ornamental. There are potential impacts with potential colonial bird nesting and bat roosting habitats at existing bridge locations like Harbor Boulevard and Lemon Street.</p>	



Consideration	West Platform	East Platform
Hydrology and water quality	For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. Stormwater best management practices and/or mitigation would be required for any temporary or permanent drainage concerns and meet requirements of the local MS4 permit.	
Maximize avoidance of areas with geological and soils constraints	For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. Both platform areas are delineated as liquefaction hazard zones where historic occurrence of liquefaction or local geological conditions indicate a potential for ground displacements requiring application of standard conditions or impact avoidance and minimization features.	
Maximize avoidance of areas with potential hazardous material	The West Platform would potentially have fewer hazard potentials and would avoid greater existing potentially hazardous waste properties in locations of proposed parking. EDR, Geotracker, and Envirostar have identified one of the proposed parking locations where a release of hazardous materials and wastes has been reported within or near areas earmarked for potential disturbance. At present, there is an ongoing assessment and/or remediation program in-progress. Land use restrictions have been implemented, but a "no further action" designation has not been granted for this site.	The East Platform would potentially have greater hazard potential and would not avoid existing potentially hazardous waste properties in locations of proposed parking. The proposed parking locations identified by EDR where a release of hazardous materials and wastes has not been reported. However, automotive shops are widely recognized as a common source of subsurface contamination. Therefore, there is a potential for encountering affected soil, soil vapor, or groundwater contamination at this location.
Safety and security	For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. The construction of either platform alternative would lead to temporary safety concerns for both construction workers and the public. The options are not located in wildfire hazard zones.	
Socioeconomics and communities	There would be similar impacts for the West and East Platform options as the areas are in a geographically similar area adjacent to the railroad ROW. Both platform options are expected to create short-term employment opportunities but may also have temporary adverse effects on community cohesion, disrupt existing communities, and displace businesses during the construction phase. However, ongoing project operations would contribute to employment, generate sales tax revenue, and lead to the creation of additional direct, indirect, and induced jobs.	
Station planning, land use, and development	Areas proximate to the West Platform have the potential for future conversion to mixed-use/TOD, but no currently adjacent planned development.	Areas proximate to the East Platform are more ready and likely to be developed with mixed-use/TOD in the near term, consistent with the City's goals for mixed-use development as described in the Fullerton Transportation Specific Plan.



Consideration	West Platform	East Platform
Agriculture farmland and forest land	For the West and East Platform options analyzed, the impacts were of similar magnitude and did not vary widely. No effects/impacts are anticipated as the sites are highly urbanized.	
Parks, recreation, and open space	<p>The West Platform is not located on any park, recreation, or open space, and no direct effects/impacts are anticipated. The existing rail ROW separates the West Platform from the existing Amerige Park, and no conflicts are anticipated. However, a potential conflict (indirect impacts) could result with a trail that is planned along the former railroad ROW between Walnut Avenue, and Truslow Avenues (Backbone Trail).</p> <p>There could be potentially greater impacts to the multi-use path that is located adjacent to the proposed parking locations than for parking for the East Platform.</p>	<p>Potential direct effects/impacts are anticipated as the East Platform is located on a trail not yet constructed called Backbone Trail.</p> <p>No effects/impacts are anticipated from the proposed parking location and would have fewer impacts to the proposed parking locations than the West Platform.</p>
Aesthetics and visual quality	<p>The West and East Platform options would have similar impacts, as stations would be above grade and visible from sensitive receptors like residential and recreational receptors. Both platform options would be in close proximity to existing transportation infrastructure. However, during construction, a greater and wider variety of visual impacts would occur under the West Platform with additional visual impacts to cultural visual resources like Amerige Park.</p>	<p>The West and East Platform options would have similar impacts, as stations would be above grade and visible from sensitive receptors like residential and recreational receptors. Both platform options would be in close proximity to existing transportation infrastructure. However, the East Platform would involve fewer impacts to cultural visual resources.</p>
Minimize impacts on cultural resources	<p>The Fullerton Ice Company, Elephant Packing House, Old Spaghetti Factory, and other built environment resources are in the vicinity of the West Platform, although further evaluation is required to determine potential impacts. This option would include an additional parcel, which does not appear to be an historic properties/historic resources for Section 106/CEQA. Potential impacts for archaeological resources are not anticipated to be significant or adverse as the area is highly urbanized and disturbed.</p>	<p>No effects/impacts are anticipated for built environment resources, although further evaluation is required to determine potential impacts. Potential impacts for archaeological resources are not anticipated to be significant or adverse as the area is highly urbanized and disturbed.</p>



Consideration	West Platform	East Platform
Section 4(f)/6(f) resources	There would be potentially greater effects/impacts anticipated to Section 4(f) with potential impacts to the Fullerton Ice Company, Elephant Packing House, Old Spaghetti Factory, and other built environment resources than the East Platform. Additionally, there could be potential impacts to a trail that is planned called Backbone Trail, although further analysis of Section 4(f) resources will be included in the Draft EIR/EIS.	There would be potentially fewer effects/impacts anticipated to Section 4(f) than the West Platform for built environment resources, although there could be potential impacts to a trail that is planned called Backbone Trail. Further analysis of Section 4(f) resources will be included in the Draft EIR/EIS.
Environmental justice	There would be similar impacts for West and East Platform options as the reference communities are similar. Both platform options would yield beneficial impacts for environmental justice communities, specifically minority and low-income populations, by improving access to employment and community amenities. However, there would be more construction impacts affecting environmental justice communities than the East Platform due to construction of the retaining walls.	There would be similar impacts for West and East Platform options. However, there would be fewer construction impacts affecting environmental justice communities than the West Platform without construction of the retaining walls.

Source: Authority, 2023

¹ The Intra-OC services were a Metrolink operated, but OCTA funded, operation of several weekday Metrolink trains just within Orange County between Fullerton and Laguna and Mission Viejo stations. Due to COVID-19, the services were cancelled and are unlikely to return, however, if it does, HSR would be able to accommodate it with East Platform the configuration, should this service return.

- APE = Area of Potential Effects
- BMP = Best Management Practice
- BNSF = Burlington Northern and Santa Fe
- CEQA = California Environmental Quality Act
- EDR = Environmental Data Resources
- GHG = Greenhouse Gas
- OC = Orange County
- PEPD = Project Definition and Preliminary Design
- ROW = Right-of-Way
- TOD = Transit Oriented Development

5 November 2023 Updates

Metrolink and the Authority have been collaborating to address recent developments along the entire corridor from Burbank to Anaheim, including the design of the Fullerton Interlocker. After the Authority presented the options described above for the West and East Platforms earlier in 2023, a new Fullerton Interlocker design was received from the BNSF Railway and Metrolink in November 2023. This new design included the relocation of Metrolink’s proposed Fullerton Interlocker Station 220 feet to the east. Given this new design, the Authority had to reassess both platform options due to the altered circumstances. With the shifted Metrolink platform,



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the existing East Platform would no longer be feasible for implementation at Fullerton. The proposed West Platform, as discussed in Section 3.1, Fullerton West Platform, could stay approximately in its original location, with a slight shift west to accommodate a crossover for diverting freight traffic away from the HSR high-level platform track on the north side. Additionally, the environmental document will identify potential measures to mitigate adverse impacts within the surrounding area.

The updated West Platform option would provide a station building and parking to accommodate the proposed HSR station. With projected ridership at the Fullerton Station expected to decrease at least 40 percent, the total number of parking spaces needed would be reduced from 940 spaces to 570 spaces and thus the proposed parcels to be acquired would be reduced from three parcels to two (Authority 2023). The proposed two parcels to be converted into HSR parking and station facilities would be located south of Walnut Avenue and west of Harbor Boulevard. An overview of the proposed platform and parking options is shown in Figure 5, Attachment E, and Attachment F. The updated West Platform would result in slightly lower costs when compared to the previous West Platform design (Section 3.1). The reduced parking need would also likely reduce many of the impacts identified in Table 1.

Figure 5. November Proposed Fullerton West Platform, Station Building, and Parking – Overview



Authority, 2023

Source:

6 Recommendations

The West Platform and the East Platform would have similar impacts to the community and environment. The updated West Platform design would have slightly lower costs, and potentially greater impacts related to noise and vibration; parks, recreation and open space; and utilities. However, the West Platform would allow for more direct and convenient transfers to other rail operators. The proposed parking locations for the West Platform would reduce conflict with existing developments, while the proposed parking locations for the East Platform would have greater potential for hazardous materials. The proposed parking for the West Platform would also minimize traffic impacts to the nearby residential areas. While the East Platform would provide greater opportunity for TOD and have minimal utility impacts, the new Fullerton Interlocker design renders the East Platform infeasible due to its resulting “non-standard” design. Given the above, and the proposed conformity



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with the Fullerton Interlocker Project, the West Platform is recommended for further analysis within the environmental document.

7 Attachments

The 2018 Center Platform, East Platform, West Platform, and updated November West Platform station exhibits, and the Fullerton Station Parking presentation (provided on August 14, 2023), Fullerton Harbor Direct Concept presentation (provided on November 10, 2023) are attached to this memo as Attachments A through F.