California High-Speed Rail Authority

Los Angeles to Anaheim Project Section

Hazardous Materials and Wastes Technical Report

October 2025



CALIFORNIA High-Speed Rail Authority

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 22, 2024, and executed by the Federal Railroad Administration and the State of California.

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ACRONYMS AND ABBREVIATIONS

Term	Definition
ACM	asbestos-containing material
Amtrak	National Railroad Passenger Corporation
ARTIC	Anaheim Regional Transportation Intermodal Center
AST	aboveground storage tank
ASTM	ASTM International
Authority	California High-Speed Rail Authority
BMP	best management practice
BNSF	BNSF Railway
CFR	Code of Federal Regulations
CalGEM	Geologic Energy Management Division
CalRecycle	California Department of Resources Recycling and Recovery
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMP	Construction Management Plan
CUPA	Certified Unified Program Agency
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
ESA	environmental site assessment
FRA	Federal Railroad Administration
HHMD	Health Hazardous Materials Division
HSR	High-Speed Rail
I-	Interstate
IAMF	impact avoidance and minimization feature
LAUS	Los Angeles Union Station
LBP	lead-based paint
LMF	light maintenance facility
NEPA	National Environmental Policy Act
O&M	operations and maintenance
OCS	overhead contact system
PA	Participating Agency
PCB	polychlorinated biphenyl
PEC	potential environmental concern

Term	Definition
project section	Los Angeles to Anaheim Project Section
RCRA	Resource Conservation and Recovery Act
RSA	resource study area
RWQCB	Regional Water Quality Control Board
SPCC	spill prevention, control, and countermeasure
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TPSS	traction power substation
U.S.C.	U.S. Code
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
UPRR	Union Pacific Railroad
US 101	U.S. Highway 101
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank

EXECUTIVE SUMMARY

This Hazardous Materials and Wastes Technical Report was prepared on behalf of the California High-Speed Rail Authority (Authority) to identify potential environmental concern (PEC) sites associated with hazardous materials and wastes that may be encountered as part of the construction of the Los Angeles to Anaheim Project Section (project section) of the California High-Speed Rail (HSR) System. The project section would extend approximately 30 miles and travel through the cities of Los Angeles, Vernon, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. The project's alignment would share the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor with existing rail operations, including National Railroad Passenger Corporation (Amtrak) passenger trains, Metrolink commuter trains, and BNSF Railway (BNSF) freight trains. In addition to new tracks for HSR, the project section would include an HSR station in Anaheim, the Anaheim Regional Transportation Intermodal Center (ARTIC), as well as maintenance of infrastructure siding, a light maintenance facility (LMF) with alternatives at 26th Street or 15th Street, and electric power utility improvements. HSR station options for one additional HSR station in Norwalk/Santa Fe Springs and Fullerton are included in the project section.

The Shared Passenger Track Alternatives for the project section include an alternative with the LMF at 26th Street (Shared Passenger Track Alternative A) and an alternative with the LMF at 15th Street (Shared Passenger Track Alternative B). A description of the alternatives and their locations can be found in Chapter 2, Project Description. This technical report focuses on analysis carried out for the Shared Passenger Track Alternatives exclusively within the project section between Los Angeles and Anaheim.

The California Environmental Quality Act (CEQA) requires state and local agencies to identify potential environmental impacts associated with a planned project so that such impacts can be mitigated or avoided, where possible. The National Environmental Policy Act (NEPA) requires the consideration of potential environmental effects in the evaluation of any proposed federal agency action (e.g., via direct implementation or funding). NEPA also obligates federal agencies to consider the environmental consequences of their projects and programs as part of the planning process.

The *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Versions 5.9 and 5.11 as amended (Authority 2017, 2022), was referred to in preparing this technical document.

The methodology for and results of the assessment of environmental concerns associated with hazardous materials and waste that may be encountered as part of the construction of the project section are presented in this report.

Site History

In general, a railroad right-of-way occupied the proposed project section as early as the mid- to late 1890s. The properties adjoining the project section footprint were sparsely developed at that time. Development of the adjoining properties with industrial, commercial, retail, or residential buildings primarily occurred during the 1920s and 1930s within the main downtown areas of the cities that the project section traverses. In Los Angeles County, these adjoining properties were substantially developed by the 1950s, while in Orange County, the adjoining properties were not substantially developed until the 1970s and 1980s, depending on the specific location within the county.

Site Reconnaissance

Site reconnaissance on private properties was not conducted as of the time of writing of this report. In 2016, facilities listed in publicly available environmental databases were identified (refer to Environmental Records below) and viewed from public rights-of-way to confirm addresses and locations, where possible (Table B-3 of Appendix B, Tables). Additionally, in 2016, detailed aerial

photography gathered in the fall of 2015 for the project section using Google Earth, and CabCam[1] footage were reviewed to obtain a general overview of existing conditions of adjoining/nearby of properties along the project section.

Since 2017, the project elements have slightly changed, so the Authority conducted additional reconnaissance along the modified alignment on September 26 and 27, 2023, to visually identify substantial changes from the uses along the project alignment observed in 2016. In general, the majority of land use observed during the public right-of-way reconnaissance appeared similar in 2023 to the previous condition and, based on this verification, no additional evaluation because of changes in site condition is warranted other than as noted in this report.

If determined necessary, additional physical inspections and assessments would be pursued to confirm the information gathered from publicly available sources for the evaluation presented in this report.

Environmental Records

A total of 305 PEC sites were identified within the environmental database review resource study area for the project section based on research completed between 2015 and 2023. Within the smaller PEC sites resource study area (i.e., within the project footprint and 150-foot buffer), there are 210 PEC sites considered to be close enough to potentially affect the project alignment. Of these 210 PEC sites, there is one listed and one proposed Superfund site, which are discussed in detail in Section 5.9, Superfund Sites.

Of the total, 300 properties were classified into one of three categories. Category (Priority) listings for these three categories are defined in 4.2, Methods for Impact Analysis. Table B-3 (Appendix B) provides a list of the 300 properties and potential associated releases of hazardous materials and wastes within and adjoining the areas of potential disturbance. Five additional PEC sites (property identification numbers 352, and 354 through 357) in Table B-3 (Appendix B) were taken from and categorized consistent with the *Burbank to Los Angeles Project Section Hazardous Materials and Wastes Technical Report* (Authority 2021) as High Risk (two), Medium Risk (one), or Low Risk (two).

Conclusions

The railroad right-of-way on which the project is to be built is, by nature of its historical uses, considered an environmental concern. Contaminated soils related to past activities such as the application of arsenic-containing and chlorinated herbicides, petroleum hydrocarbons (oils and grease) associated with train operations and maintenance, and chemical spills involving railcars are likely to be encountered during construction activities within the limits of disturbance.

Soil and groundwater at and beneath some of the properties adjoining the project footprint are likely affected, especially within or in close proximity to PEC sites. Additional assessment, including detailed site visits and subsurface sampling, would be required once more detailed design information with respect to project station locations, maintenance facilities, parking lots, and property acquisitions (e.g., full take, partial take, or temporary construction easement) is available.

Disclaimer: This report is not intended to serve as a Phase I or Phase II Environmental Site Assessment. Site-specific Phase I reports should be completed to characterize each parcel before any property acquisition occurs. Phase I reports should also identify any parcels that require Phase II Environmental Site Assessments and specify necessary soil, groundwater, soil vapor, or other subsurface investigations, which may require coordination with state and local agency officials.

[1] CabCam is a camera system mounted to a vehicle or train that records while the vehicle or train is moving.

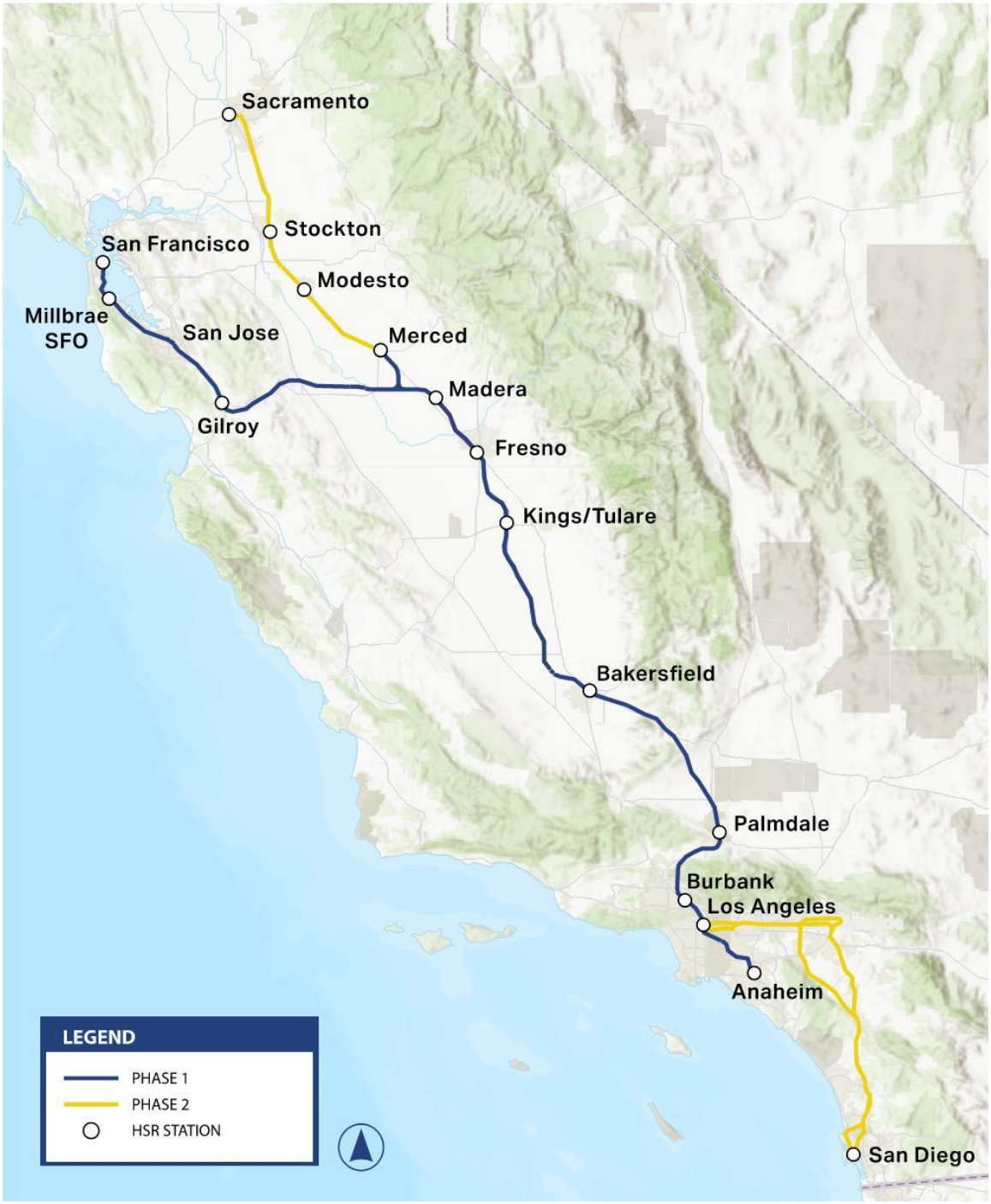
1 INTRODUCTION

1.1 California High-Speed Rail System Background

The California High-Speed Rail Authority (Authority), a state governing board formed in 1996, is responsible for planning, designing, building, and operating the California High-Speed Rail (HSR) System. Its statutory mandate is to develop an HSR system that coordinates with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports. The California HSR System will provide intercity, high-speed service on more than 800 miles of tracks throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the southern Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego, as depicted on Figure 1-1.[2] It will use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and automated train control systems, with trains capable of operating up to 220 miles per hour.

The California HSR System is planned to be implemented in two phases. Phase 1 would connect San Francisco to Los Angeles and Anaheim via the Pacheco Pass and the Central Valley. Phase 2 would extend the HSR system from the Central Valley (starting at the Merced Station) to the state's capital in Sacramento and from Los Angeles to San Diego.

[2] The alignments depicted on Figure 1-1 reflect the Authority/Federal Railroad Administration decisions made in the 2005, 2008, and 2012 Programmatic Environmental Impact Report/Environmental Impact Statement documents.



Source: Authority 2023a

Figure 1-1 California High-Speed Rail System

1.2 Los Angeles to Anaheim Project Section Background

The Los Angeles to Anaheim Project Section (project section) of the HSR system would extend approximately 30 miles between Los Angeles Union Station (LAUS) in Los Angeles and Anaheim Regional Transportation Intermodal Center (ARTIC) in Anaheim. This narrow, existing railroad corridor is constrained by the surrounding urban environment and other existing rail operators in

the area, including trains operated by the National Railroad Passenger Corporation (Amtrak), Metrolink (governed by the Southern California Regional Rail Authority), the Union Pacific Railroad (UPRR), and BNSF Railway (BNSF).

The Authority, in cooperation with the Federal Railroad Administration (FRA), completed the *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System* in November 2005 (Authority and FRA 2005). For the Los Angeles to Anaheim Project Section, the Authority and FRA selected the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor, with the intent of sharing the existing right-of-way as the alignment.

In 2007, the Authority and FRA released the Notice of Preparation/Notice of Intent to inform the public of the beginning of the preparation of a Draft EIR/EIS for the project section.[3] The Authority and FRA engaged in project scoping, completed a Preliminary Alternatives Analysis Report in 2009, and completed Supplemental Alternatives Analysis Reports in 2010 and 2016. The 2016 Supplemental Alternatives Analysis considered two alternatives: Alternative 1 (formerly called the Dedicated High-Speed Track Alternative) and Alternative 2 (formerly called the Consolidated Shared-Track Alternative), and advanced Alternative 2 (HSR Project Alternative) for analysis in the project Draft EIR/EIS.

In 2017 and 2018, BNSF conducted operational modeling that indicated a need for additional capacity during construction and operation of this project section. Consequently, the Authority added BNSF staging tracks in Lenwood (Lenwood Component) and a Colton Intermodal Facility (Colton Component) in San Bernardino County to the project. In 2020, the Authority initiated revised scoping to include the Lenwood and Colton Components in the project section. Stakeholder feedback received during scoping included substantial opposition to the BNSF Components far outside the project corridor.

In response, the Authority prepared a Supplemental Alternatives Analysis (Authority 2023b) to evaluate a new alternative that would eliminate the need for a BNSF Intermodal Facility in San Bernardino County. The 2023 Supplemental Alternatives Analysis examined three new build alternatives that did not include an Intermodal Facility and proposed advancing the Shared Passenger Track Alternative for further consideration in the EIR/EIS, which closely resembled the 2018 HSR Project Alternative without the Lenwood and Colton Components. Operationally, the Shared Passenger Track Alternative would reduce the peak service level for HSR trains to two trains per hour per direction, and up to 10 freight trains per day could operate on the passenger tracks, eliminating the need for the BNSF Intermodal Facility.

Additional design refinements and outreach occurred, and in May 2024, a Preliminary Impacts Assessment Report further defined elements of the Shared Passenger Track Alternative, such as HSR station options, light maintenance facility (LMF) sites, and grade crossings. The Preliminary Impacts Assessment Report recommended the Shared Passenger Track Alternative be split into two build alternatives, Shared Passenger Track Alternative A and Shared Passenger Track Alternative B, which are similar in all aspects, except for the LMF size and location. Shared Passenger Track Alternative A proposes an LMF at 26th Street in Vernon, and Shared Passenger Track Alternative B proposes an LMF at 15th Street in Los Angeles. In May 2024, the Board identified Shared Passenger Track Alternative A as the Preferred Alternative.

1.3 Project Description Purpose

This project description provides a condensed version of the technical information discussed in Chapter 2, Alternatives, of the Draft EIR/EIS and includes references to other documents for additional details and discussion. The basis of this project description is the Draft Los Angeles to Anaheim Preliminary Engineering for Project Definition document. Chapter 2 of the Draft EIR/EIS

[3] The Notice of Intent was issued in the *Federal Register* on March 15, 2007 (72 Fed. Reg. 12,250).

includes additional details beyond the content discussed herein, including information on the proposed operating plans and scenarios, construction plans, and capital and operating costs.

1.4 Definition of Resources

The following are definitions for hazardous materials, wastes, and substances analyzed in this report.

Hazardous materials: Hazardous materials are those that, because of quantity, concentration, or physical or chemical characteristics, pose a substantial present or potential hazard to human health and safety, or to the environment, if released. Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, and materials that a handler or the administering regulatory agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment (California Health and Safety Code Section 25501(n)(1)). Petroleum products (including crude oil and refined products such as fuels and lubricants) and natural gas are considered in this analysis because they might also pose a hazard to human health and safety if released into the environment. The term *hazardous materials* includes hazardous wastes, hazardous substances, and extremely hazardous substances as defined below.

- **Hazardous wastes:** In general, a solid waste is defined as a hazardous waste when it qualifies as a waste (i.e., is no longer of use and will be disposed of) and exhibits a hazardous waste characteristic (e.g., toxicity, ignitability, reactivity, or corrosivity) or when it has been specifically listed as hazardous in federal or state law or regulation. Hazardous waste is regulated by the U.S. Environmental Protection Agency (USEPA) under the Resource Conservation and Recovery Act (RCRA). Federal hazardous wastes are often referred to as RCRA wastes. California hazardous waste law and regulation is in some cases more stringent than the federal law and, as a result, wastes may be defined as California hazardous wastes, but not be RCRA wastes; as such, they may, but not necessarily, be identified as non-RCRA hazardous wastes. Hazardous wastes discussed in this document are classified as such based on the California definition.
- **Hazardous substances:** The term *hazardous substance* refers to any substance or mixture of substances that (1) is toxic; (2) is corrosive; (3) is an irritant; (4) is a strong sensitizer; (5) is flammable or combustible; or (6) generates pressure through decomposition, heat, or other means. Hazardous substances may cause substantial personal injury or substantial illness during, or as a proximate result of, any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children, as defined in the California Health and Safety Code (California Health and Safety Code, Section 108125). Hazardous substances include petroleum products, certain radioactive substances, and certain substances that present an electrical, mechanical, or thermal hazard. There is no single list of hazardous substances to reference.
- **Extremely hazardous substances:** Extremely hazardous substances are subject to additional regulation if they exceed thresholds specified in the regulations. The extremely hazardous substances analyzed in this document are listed in Section 302 of the U.S. Emergency Planning and Community Right-to-Know Act (42 U.S. Code [U.S.C.] Section 11002). The list is provided as an appendix to 40 Code of Federal Regulations (CFR) Part 355 or in the California Code of Regulations, Title 8, Appendix A to Section 5189.

2 PROJECT DESCRIPTION

The project section is approximately 30 miles long and travels through the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. The project's alignment would share a portion of the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor with existing rail operators. The Authority adopted a strategy of sharing the existing corridor and blending HSR with existing rail systems on shared infrastructure (referred to as "blended operations"[4]) to accelerate and broaden benefits, improve efficiency, minimize community impacts, and reduce construction costs.

This section describes the No Project Alternative and Shared Passenger Track Alternatives A and B.

2.1 No Project Alternative

Under the No Project Alternative, the project section would not be built. The No Project Alternative represents the condition of the project section as it currently exists in the base year, and as it would exist without the California HSR System at the planning horizon year of 2040.

In assessing future conditions, it was assumed that all currently known, programmed, and funded improvements to the statewide transportation system (highway, rail, and transit) and reasonably foreseeable local land development projects would be implemented by the year 2040. The No Project Alternative is based on a review of and consultation with several documents and data sources, including, but not limited to, transportation plans such as the 2020 Southern California Association of Governments' Regional Transportation Plan[5]; the Governor's Office of Land Use and Climate Innovation CEQAnet Database; the Federal Aviation Administration's Air Carrier Activity Information System and Airport Improvement Plan grant data; the California State Transportation Commission's State Transportation Improvement Program; airport master plans and interviews with airport officials; intercity passenger rail plans; and city and county general plans and planning officials.

2.2 High-Speed Rail Build Alternatives

The project proposes two build alternatives: Shared Passenger Track Alternative A and Shared Passenger Track Alternative B. Shared Passenger Track Alternative A proposes an LMF at 26th Street, whereas Shared Passenger Track Alternative B proposes an LMF at 15th Street. Both alternatives include an HSR station option in either Norwalk/Santa Fe Springs or Fullerton. The main elements of the build alternatives are summarized in Table 2-1 and depicted on Figure 2-1.

Table 2-1 Summary of Design Features of Shared Passenger Track Alternative A and Shared Passenger Track Alternative B

Feature	Total
Total length (linear miles)	29.7
At-grade profile (linear miles)	23.8
Elevated profile (linear miles)	5
Below-grade/braced trench profile (linear miles)	0.9

[4] California High-Speed Rail Business Plans (California High-Speed Rail 2022 Business Plan) suggest blended railroad systems and operations. These terms refer to integrating the HSR system with existing intercity, and commuter and regional rail systems through coordinated infrastructure (blended systems) and scheduling, ticketing, and other means (blended operations).

[5] The No Project Alternative uses the 2020 Southern California Association of Governments Regional Transportation Plan as the basis for analysis, with the exception of the transportation analysis, which uses the 2016 Regional Transportation Plan as the baseline. This is because of the date and availability of traffic counts collected for the project.

Feature	Total
Number of straddle bents[1]	16
Number of at-grade railroad crossings[2]	8
Number of major water crossings[3]	9
Number of roadway overcrossings and undercrossings	58

[1] A straddle bent is a pier structure that spans (or "straddles") the functional/operational limit of a roadway, highway, or railway.
[2] Railroad crossing means a railroad crossing another railroad.
[3] Features considered major water crossings are Los Angeles River, Rio Hondo (and basins), San Gabriel River, North Fork Coyote Creek, La Mirada Creek, Coyote Creek, Brea Creek, Fullerton Creek, and Carbon Creek.



Source: Authority 2025a

Figure 2-1 Los Angeles to Anaheim Project Section Alignment

Currently, two to three mainline tracks occur throughout the corridor, with a variable number of freight siding tracks. The HSR project seeks to maintain existing operations in the corridor while minimizing impacts outside of the existing right-of-way. To accomplish this, the HSR project would add one new mainline track from LAUS to Fullerton Junction and would use existing tracks, where possible, to ensure that, overall, the project section includes two electrified tracks along the corridor for HSR, which would be shared with other passenger rail operators. These two electrified tracks are referred to herein as *shared tracks*. The specific details of Shared Passenger Track Alternative A and Shared Passenger Track Alternative B are discussed further below.

2.2.1 Shared Passenger Track Alternative A

2.2.1.1 Alignment

Table 2-2 summarizes the alignment of Shared Passenger Track Alternative A through the corridor cities. Figure 2-2 depicts the northern project section limit and its relationship with Los Angeles County Metropolitan Transportation Authority's proposed Link Union Station Project. Figure 2-3 through Figure 2-8, as referenced therein, provide cross-sections of various points along the project alignment discussed in Table 2-2. Where applicable, Table 2-2 also provides references to later sections of this project description that provide further details of other project components including, but not limited to, ancillary facilities, HSR and passenger rail stations, and the LMFs.

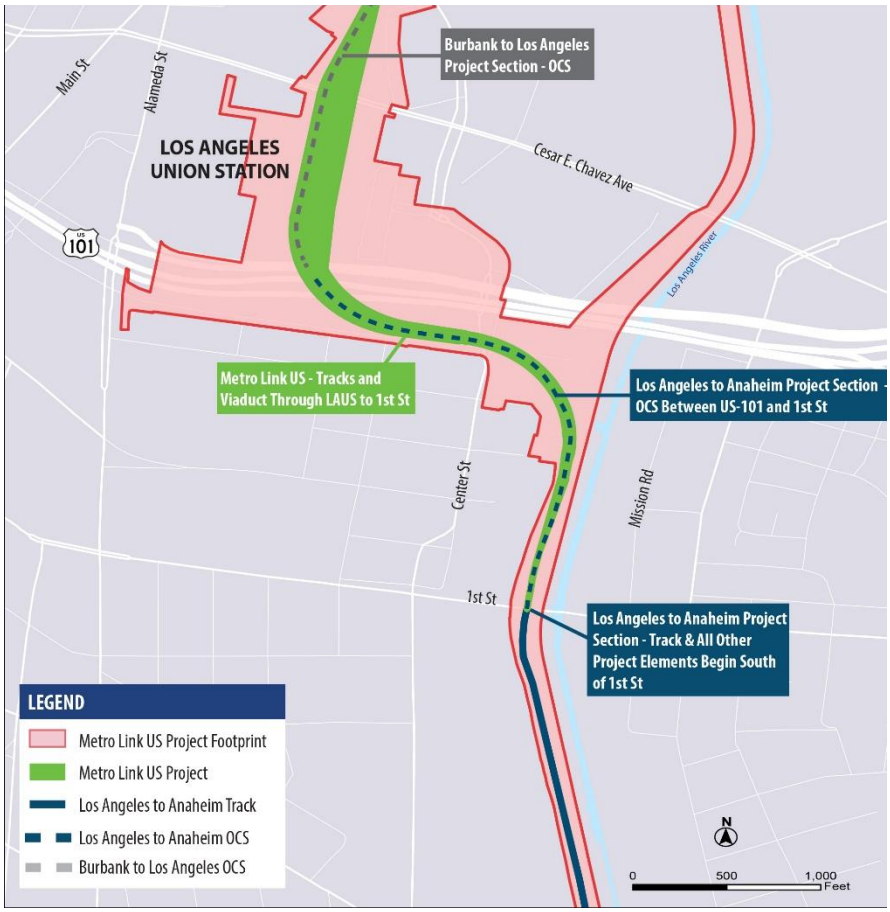
Table 2-2 Shared Passenger Track Alternative A Alignment

Project Section Segment	Segment Alignment Description
Los Angeles and Vernon	▪ The project section would begin immediately south of LAUS, at the northern edge of US 101, where a viaduct built as part of the Link US Project would begin. The installation of the OCS north of US 101 was previously approved as part of the Burbank to Los Angeles Project Section in January 2022. From US 101 to 1st St, the Authority would build the OCS for HSR. At 1st St, Shared Passenger Track Alternative A would include the HSR project tracks and all other project infrastructure south to ARTIC. ▪ Starting at the LAUS platforms, HSR trains would run on tracks built as part of Link US, cross over US 101, Commercial St, and Ducommun St on a viaduct, and come down to grade just before 1st St, joining the existing railroad right-of-way. From this tie-in point south, the HSR trains would use the existing tracks, which would be upgraded with an OCS. Refer to Figure 2-3 for a cross section of the track between 1st St and 4th St. ▪ Between 7th St and I-10, two HSR layover tracks would be added west of the shared tracks; refer to Section 2.2.1.2, Ancillary Facilities, for more information. The shared tracks would cross under the Olympic Blvd roadway overcrossing and rise onto an existing railroad bridge to cross over Washington Blvd and the Los Angeles River. The shared tracks would return to at grade east of Soto St and enter Vernon. ▪ The BNSF and shared tracks would pass by the BNSF Los Angeles Intermodal Facility (referred to as Hobart Yard). The proposed 26th St LMF would be south of Hobart Yard and is described in more detail in Section 2.2.1.4, Light Maintenance Facility.
Commerce, Bell, Montebello, and Pico Rivera	▪ East of Hobart Yard, the tracks would cross at grade under I-710 and enter Commerce. Starting from west of Eastern Ave, the shared tracks would rise onto a new elevated structure, referred to as the *Commerce Flyover*; refer to Section 2.2.1.5, Freight or Passenger Railroad Modifications, and Figure 2-4 for more information on the Commerce Flyover, which is designed to pass by the BNSF Commerce Intermodal Facility (referred to as *Commerce Yard*). ▪ The Commerce Flyover would cross over Eastern Ave and pass by the existing Commerce Metrolink Station. The elevated shared tracks would not connect with the Commerce Metrolink Station's existing location, which would be relocated. Refer to Section 2.2.1.5 for more information on the Commerce Metrolink Station's relocation. The elevated tracks would return to grade before I-5 and would remain so throughout Montebello and Pico Rivera.

Project Section Segment	Segment Alignment Description
Santa Fe Springs and Norwalk	▪ The tracks would continue east into Santa Fe Springs and cross over Pioneer Blvd, Norwalk Blvd, and Los Nietos Rd. All of these would be new grade separations, with the roadway lowered and tracks crossing over on new railroad bridges; refer to Section 2.2.1.6, State Highway or Local Roadway Modifications. ▪ From Slauson Ave to Telegraph Ave, the track configuration would remain at grade with four tracks, as depicted on Figure 2-5. ▪ South of Telegraph Rd, the shared tracks would diverge outside of the existing railroad right-of-way and rise onto retained fill to cross over Florence Ave on a new bridge, while three BNSF mainline tracks would cross Florence Ave on the existing railroad bridge. The shared tracks would transition from retained fill onto an elevated structure that crosses over Lakeland Rd, while the BNSF tracks would remain at grade in their current configuration throughout this segment. The elevated structure would continue south and transition from the west side of the corridor over to the east side. Figure 2-6 depicts the track configuration south of Lakeland Rd. ▪ The elevated structure would veer east out of the existing railroad corridor and cross over Imperial Hwy, necessitating modifications to the existing Norwalk/Santa Fe Springs Metrolink Station, described in Section 2.2.1.3, High-Speed Rail Station Facilities, in more detail. Under Shared Passenger Track Alternative A, HSR trains would not stop at the Norwalk/Santa Fe Springs Metrolink Station. ▪ South of the station, the elevated structure would rejoin the existing railroad corridor and transition back down to at grade just west of Carmenita Rd.
La Mirada and Buena Park	▪ The tracks would continue at grade through La Mirada and Buena Park. In Buena Park, the track design would conflict with the location of the existing Buena Park Metrolink Station platform, necessitating the station's relocation (refer to Section 2.2.1.5 for more information).
Fullerton	▪ East of Dale St, the tracks would enter Fullerton. The Fullerton Municipal Airport is south of the railroad corridor, and the shared tracks would require lowering as they pass by the airport to prevent the HSR project, including the OCS, trains, and all other project components, from conflicting with the airport runway protection zone. The shared tracks on the north side of the corridor would also need to transition to the south side in order to serve the existing Fullerton Metrolink/Amtrak Station farther south. ▪ The shared tracks would transition underneath the BNSF tracks via a short below-grade section, in a braced trench. The trench would start approximately 850 feet east of Dale St and, approaching the eastern end of the Fullerton Airport, would cross under the BNSF tracks to the south side of the corridor, continuing adjacent to the existing BNSF tracks (which would remain at grade). Refer to Figure 2-7 for a cross section of the shared tracks in the trench after they transition to the south side of the corridor. ▪ The shared tracks would return to grade just before Gilbert St. Continuing east, a fourth track would be added to the south side of the corridor at the Fullerton Metrolink/Amtrak Station, which would require modifications, described in more detail in Section 2.2.1.3. Under Shared Passenger Track Alternative A, HSR trains would not stop at the Fullerton Metrolink/Amtrak Station. ▪ East of the station at Fullerton Junction, the three tracks along the north side of the corridor would be dedicated to BNSF trains and would continue east through Fullerton Junction. The tracks along the south side of the corridor would be dedicated to passenger trains and travel south to ARTIC.

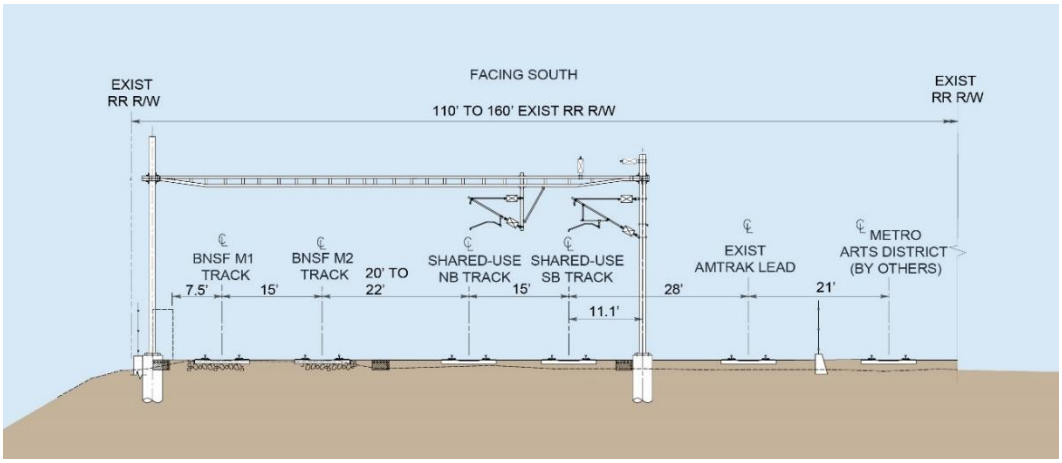
Project Section Segment	Segment Alignment Description
Anaheim	▪ South of Fullerton Junction, the tracks would enter Anaheim. From Fullerton Junction to ARTIC, the two existing tracks would be electrified to allow for shared operations with Metrolink. Several freight trains per day currently run on the existing tracks and would retain operation rights in the future. The two shared tracks would remain at grade through the rest of Anaheim. ▪ The existing at-grade crossings at Orangethorpe Ave, La Palma Ave, Sycamore St, Broadway St, Santa Ana St, South St, Vermont Ave, and Ball Rd would be maintained. Refer to Figure 2-8 for the cross section that is representative of the two-track configuration throughout this segment. ▪ From south of Ball Rd to south of Cerritos Ave, two HSR layover tracks would be added along the west side of the corridor. Cerritos Avenue and State College Blvd would be grade separated, with the roadways lowered and the tracks crossing over the road on new railroad bridges. ▪ The tracks would end at ARTIC, where HSR platforms and station facilities would be added to the existing station, described in more detail in Section 2.2.1.3.

ARTIC = Anaheim Regional Transportation Intermodal Center; Authority = California High-Speed Rail Authority; BNSF = BNSF Railway; HSR = high-speed rail; I = interstate; LAUS = Los Angeles Union Station; Link US = Link Union Station; OCS = overhead contact system; project section = Los Angeles to Anaheim Project Section; US 101 = U.S. Highway 101



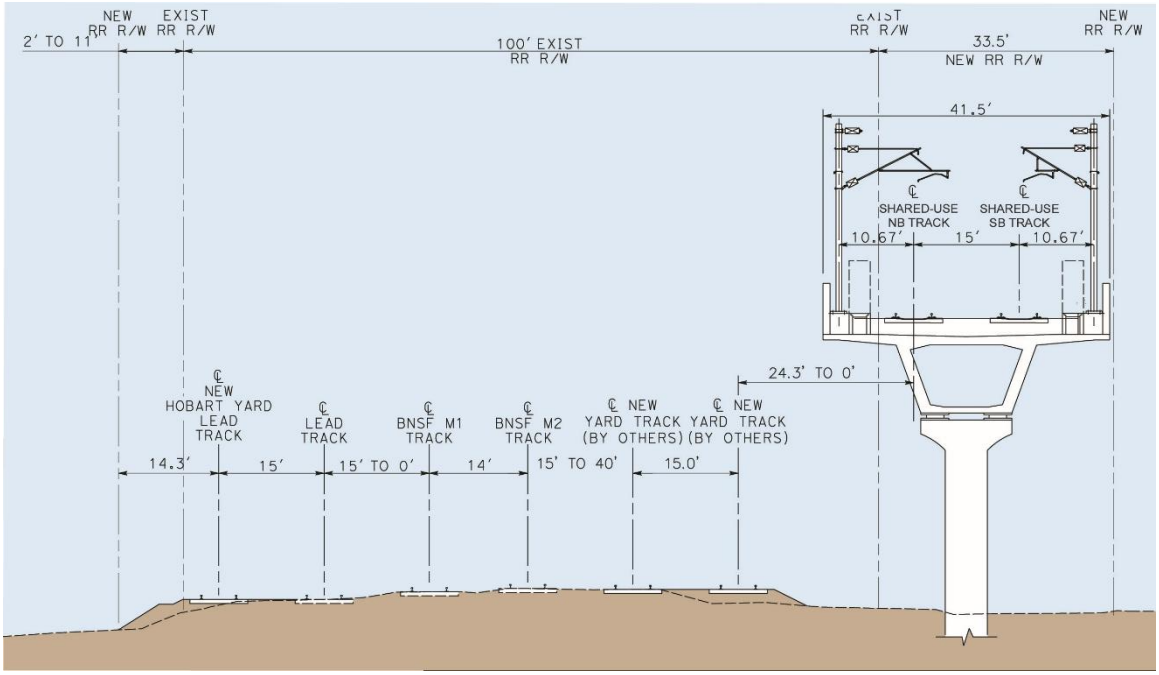
Source: Authority 2025a
Link US = Link Union Station; Metro = Los Angeles County Metropolitan Transportation Authority; OCS = overhead contact system

Figure 2-2 High-Speed Rail and Link Union Station Project



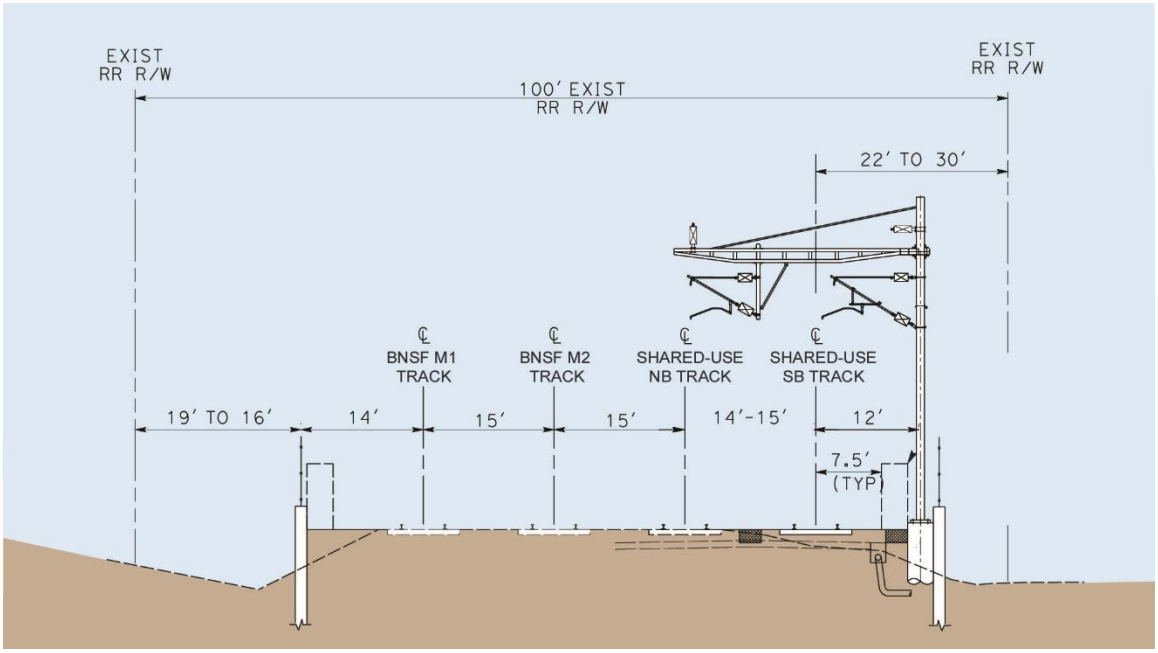
Source: Authority 2025a
M = main track; RR = railroad; R/W = right-of-way; NB = northbound; SB = southbound

Figure 2-3 At-Grade Cross Section between 1st Street and 4th Street



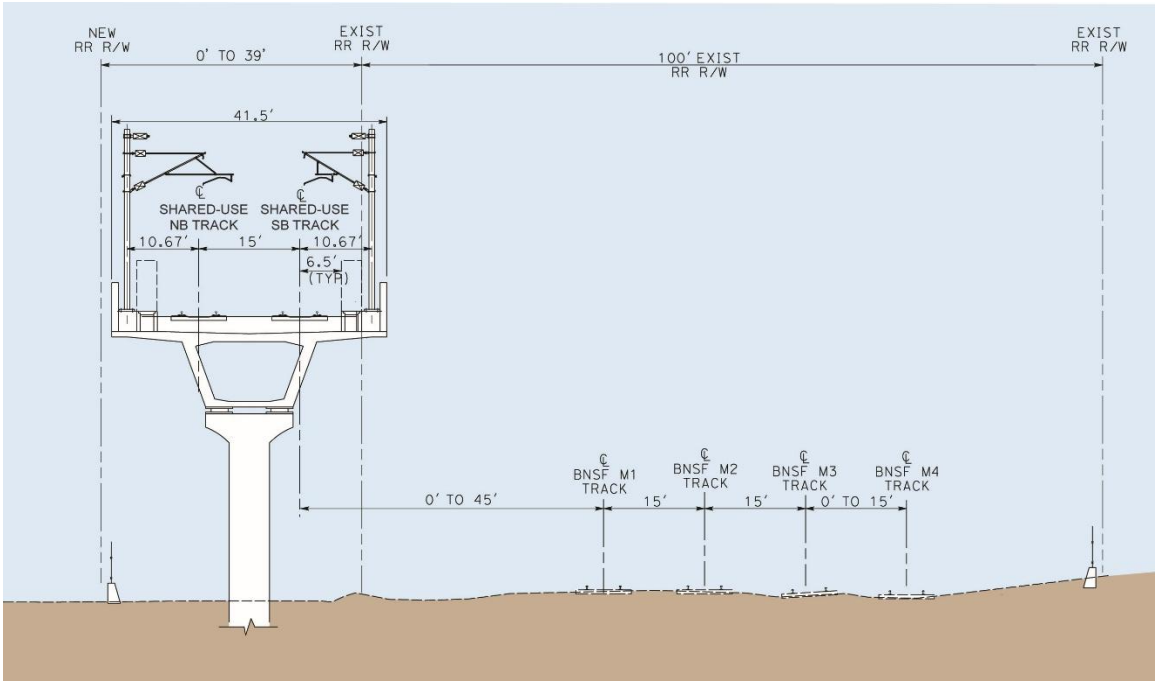
Source: Authority 2025a
M = main track; RR = railroad; R/W = right-of-way; NB = northbound; SB = southbound

Figure 2-4 Elevated Cross Section between Atlantic Boulevard and Eastern Avenue (Commerce Flyover)



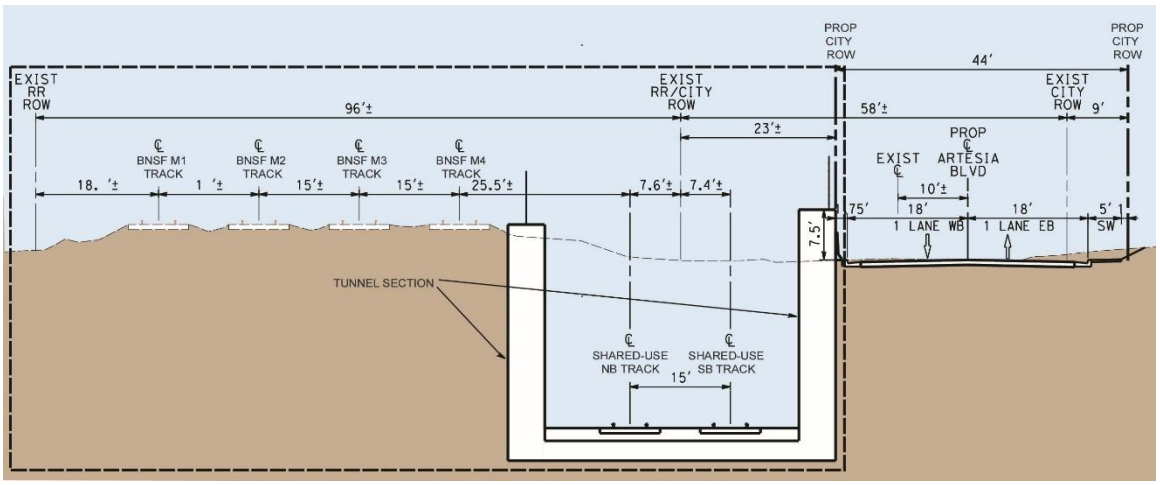
Source: Authority 2025a
M = main track; RR = railroad; R/W = right-of-way; NB = northbound; SB = southbound

Figure 2-5 At-Grade Cross Section from Slauson Avenue to Telegraph Road



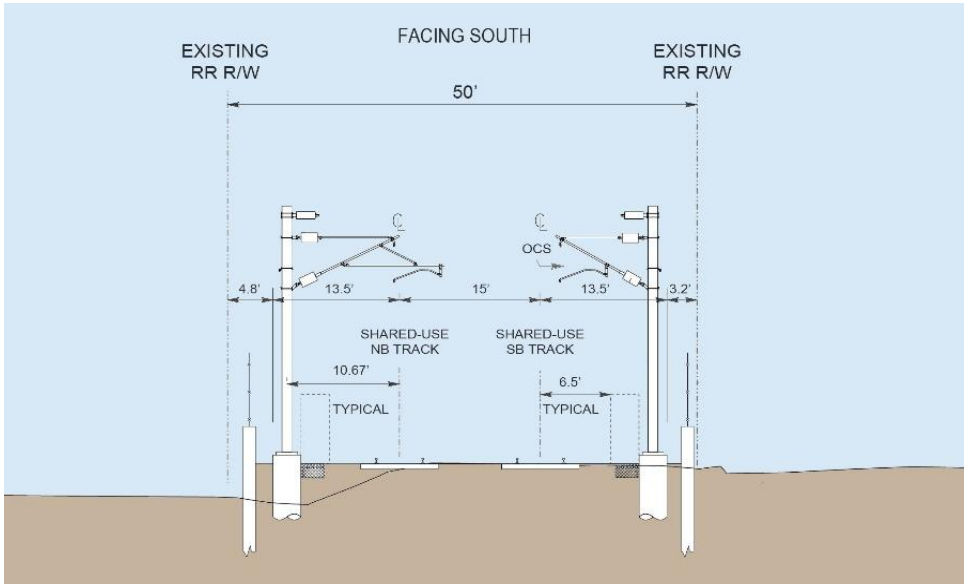
Source: Authority 2025a
M = main track; RR = railroad; R/W = right-of-way; NB = northbound; SB = southbound

Figure 2-6 Elevated Cross Section South of Lakeland Road



Source: Authority 2025a
Figure not to scale
M = main track; OCS = overhead contact system; RR R/W = railroad right-of-way

Figure 2-7 Braced Trench Cross Section East of Fullerton Airport



Source: Authority 2025a
OCS = overhead contact system; RR = railroad; R/W = right-of-way; NB = northbound; SB = southbound

Figure 2-8 At-Grade Cross Section between La Palma Avenue and Ball Road

2.2.1.2 Ancillary Facilities

Systems Facilities

HSR trains would draw power from California's existing electricity grid, with power distributed to the trains via the overhead contact system (OCS). The project would not include construction of a separate power source; rather, the existing grid would supply power to the OCS through the extension of underground or overhead transmission lines to a series of power substations positioned along the railroad corridor. The transformation and distribution of electricity would occur through the following three types of stations:

- Traction power substations (TPSS), which would transform high-voltage electricity supplied by public utilities to the train operating voltage. The project section would include two TPSS sites (Los Angeles and Anaheim), which would both be adjacent to existing utility transmission lines and outside of the existing right-of-way. The TPSS sites would be spaced apart by approximately 30 miles along the project alignment and each include an approximately 450-square-foot control room and two 115/50-kilovolt or 230/50-kilovolt, single-phase transformers that would both be rated at 60 megavolt-amperes. The foregoing components would be installed within an approximately 32,000-square-foot area, and screening of each TPSS would be provided by a wall or fence.
- A switching station to connect and balance the electrical load between tracks and switch OCS power on or off in the event of a power outage or emergency. A switching station would be installed in Santa Fe Springs, generally midway between the two TPSS sites, approximately 15 miles from the nearest TPSS and 0.1 mile northeast of the project alignment. Installation of the station's equipment would require approximately 9,600 square feet.
- Paralleling stations, or autotransformer stations, to provide voltage stabilization and equalize current flow. Two paralleling stations would be installed along the project alignment, with one each along the segments between the Santa Fe Springs switching station and the Los Angeles and Anaheim TPSS sites. Each paralleling station would be adjacent to the HSR right-of-way, include an approximately 450-square-foot control room, and require approximately 8,000 square feet.

Table 2-3 provides the locations of the proposed TPSSs, switching station, and paralleling stations.

Table 2-3 Traction Power, Paralleling, and Switching Station Locations

Traction Power Station Type	Location
Traction power substation (two sites)	**City of Los Angeles:** South of Washington Blvd, and west of Soto St, adjacent to the existing railroad viaduct **City of Anaheim:** On the northeast corner of Lewis St and Cerritos Ave, southwest of the HSR tracks
Paralleling station (two sites)	**City of Montebello:** Southwest corner of Maple Ave and Sycamore St, south of the HSR tracks (co-located with the relocated Commerce Metrolink Station) **City of Fullerton:** Northwest corner of Dale St and Artesia Ave, south of the HSR tracks
Switching station	**City of Santa Fe Springs:** Northeast corner of Los Nietos Rd and Santa Fe Springs Rd, north of BNSF Railway tracks

Source: Authority 2025a
HSR = high-speed rail

Signaling and Train-Control Elements

The National Transportation Safety Board, FRA, and other agencies mandate Positive Train Control, a train safety system designed to automatically implement safety protocols and provide communication with other trains to reduce the risk of a potential collision. Because of the lower operating speed of HSR trains in this project section compared to other HSR project sections, this project section would operate using conventional Positive Train Control signaling rather than a specialized HSR signaling system. This project section would use a radio-based communications network, including a fiber optic backbone and communications towers approximately every 2 to 3 miles, depending on the terrain and selected radio frequency. The towers would be in the HSR corridor in a fenced area of approximately 20 feet by 15 feet, including a 10- by 8-foot communications shelter and a 6- to 8-foot diameter, 100-foot-tall communications pole. These

communications facilities could be co-located within the TPSSs. Where communications towers cannot be located with TPSSs or other HSR facilities, they would be within or near the HSR corridor in an approximately 20- by 15-foot fenced area.

Layover Tracks

Layover tracks are used to store and restock trains during the day, in between service runs, and to store trains at night at terminus stations when they are not in service. Layover tracks are required where high-speed trains would end their runs, near LAUS and ARTIC, to support layover functions such as overnight storage, draining of waste tanks, filling of potable water tanks, and cleaning of windows, among others, as well as daily scheduled interior cleaning of passenger areas that would occur prior to the train entering revenue service. The Los Angeles layover tracks would be between Seventh Street and Interstate (I-) 10, and could be accessed for cleaning activities through the Amtrak Eighth Street Yard. The Anaheim layover tracks would be from south of Ball Road to south of Cerritos Avenue, and would have a layover support facility at the northeast corner of Lewis Street and Cerritos Avenue.

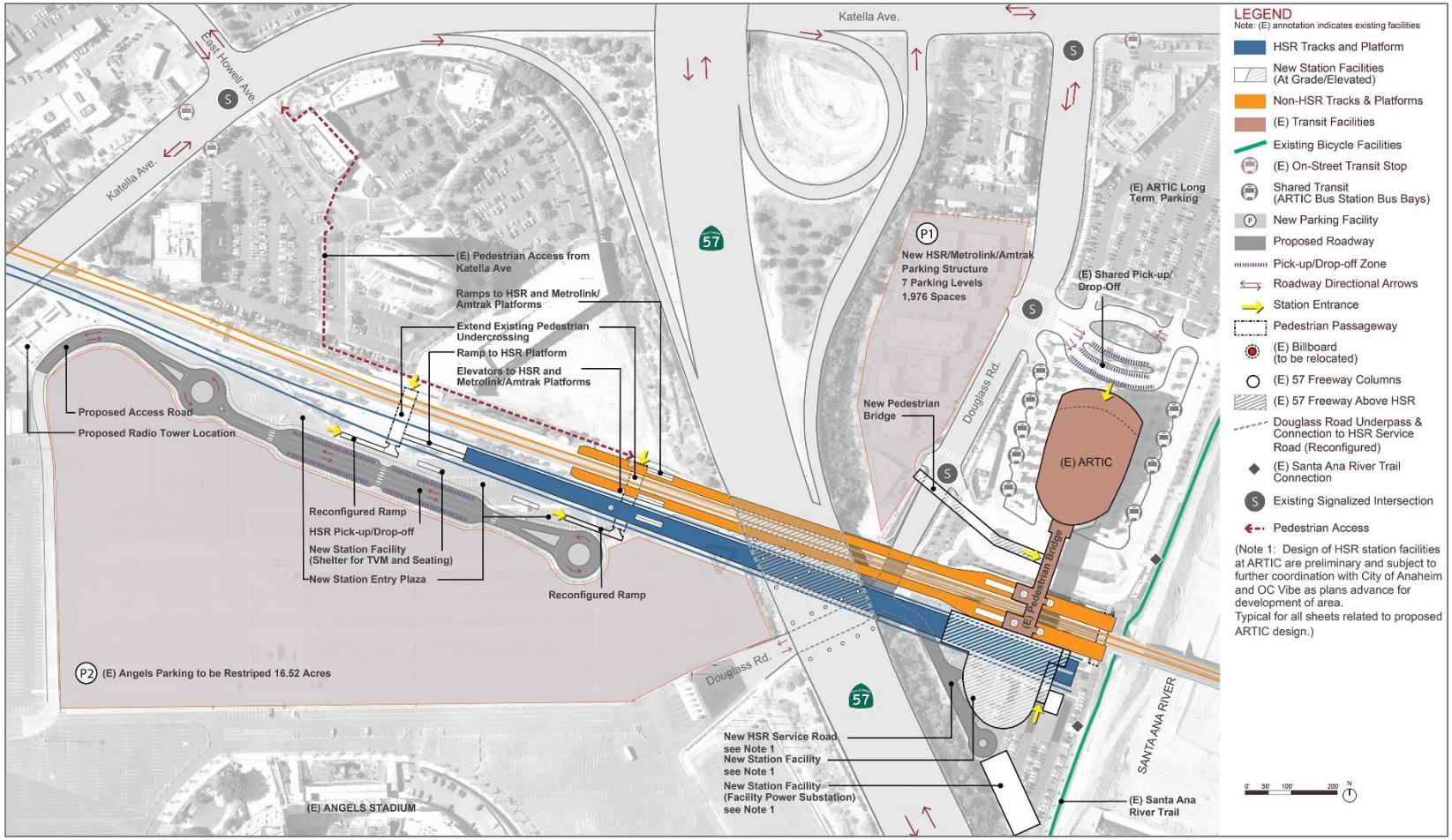
2.2.1.3 High-Speed Rail Station Facilities

Because the project section is within an existing corridor with passenger rail service, Shared Passenger Track Alternative A does not propose new HSR stations but rather modifies existing passenger rail stations to allow for shared operations with HSR. Shared Passenger Track Alternative A would include an HSR station platform and facilities at ARTIC, described below.

ARTIC High-Speed Rail Platform and Station Facilities

The proposed HSR platform and station facilities at the existing ARTIC station would be at grade, with two new HSR tracks and a single 1,410-foot center platform for HSR, south of and parallel to the existing Metrolink/Amtrak tracks and platforms. The HSR platform would be accessed through an extension of ARTIC's existing pedestrian bridge from the northeast and through an extension of two existing pedestrian tunnels on the western end of the existing ARTIC platforms. The Authority would work with the City of Anaheim, as the ARTIC passenger terminal owner, to share the passenger amenities inside ARTIC in the near term. Once ridership increases enough that combined HSR and local-provider passenger volumes exceed the design capacity of the ARTIC passenger terminal building, the Authority would build a separate HSR passenger terminal. This new HSR station building, included within the project footprint and depicted on Figure 2-9, would be at the southern end of the pedestrian bridge, along with a facility power substation to provide electricity to the building. The existing Metrolink/Amtrak parking lot north of Angel Stadium would be reconfigured into a pick-up/drop-off area and connected to the existing access road from Katella Avenue. The project would maintain the two existing access points between the Santa Ana River Trail and ARTIC. Radio towers would be built adjacent to the access road at Katella Avenue.

This project would include a new parking structure adjacent to State Route 57 and Katella Avenue, providing 1,350 HSR parking spaces and 626 replacement parking spaces to account for existing parking spaces at ARTIC that would be displaced by the HSR tracks and platform, for a total of 1,976 parking spaces. Figure 2-9 provides an illustration of the HSR platform and station facilities at ARTIC.



Source: Authority 2025a

Figure 2-9 High-Speed Rail Platform and Facilities at ARTIC

2.2.1.4 Light Maintenance Facility

HSR operations in Southern California would require a Level III[6] LMF for fleet storage, cleaning, repair, overnight layover accommodations, and servicing facilities, including the necessary water cistern and power facilities. The 26th Street LMF is designed to follow the Authority's *Requirements for High-Speed Trainset Fleet and Infrastructure Maintenance Facilities Technical Memorandum* (Authority 2024).

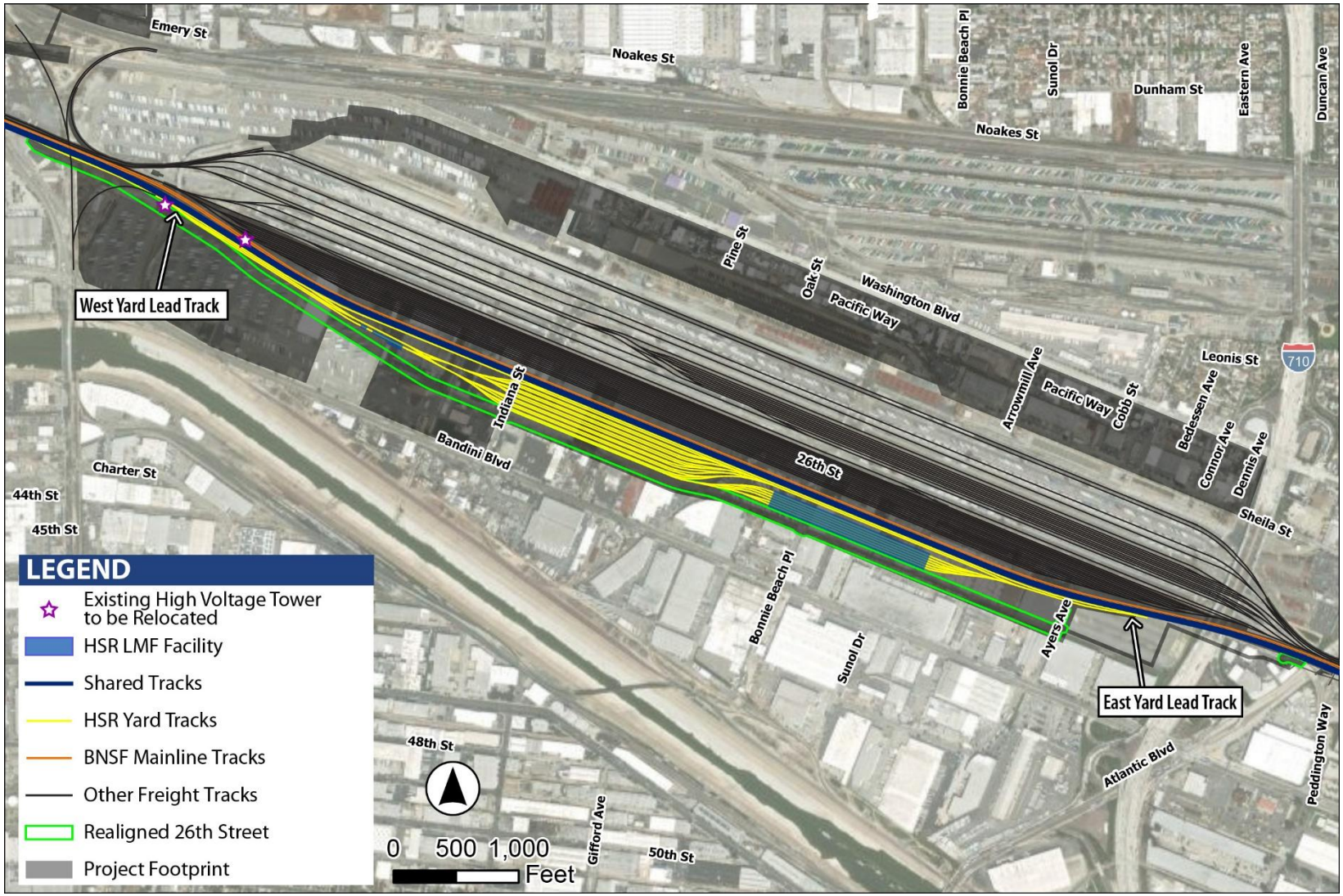
Refer to Figure 2-10 for an overview of the 26th Street LMF, which would have an overall size of 50 acres and be roughly bounded by the realigned mainline tracks on the north, a relocated 26th Street on the south, Downey Road on the west, and I-710 on the east. The changes on the south side of Hobart Yard would require 26th Street to be realigned, which would provide access to the LMF. Two high-voltage utility towers would be relocated to accommodate the 26th Street realignment. Refer to Section 2.2.1.5 for more details on changes adjacent to Hobart Yard.

The LMF would be double-ended, with all tracks having access from the mainline on both the eastern and western sides. HSR trains would access the LMF from the east and west on two new yard lead tracks, which would be south of the mainline tracks. Within the 26th Street LMF, there would be an outdoor train yard with 12 yard tracks to allow for the storage of 24 single trainsets, along with a 1,345-foot-long, six-track shop building, which could accommodate 12 trainsets. The internal LMF access roads would be wide enough to accommodate service vehicles, consolidate commissary functions, and provide more clearance from the OCS poles to the yard tracks.

2.2.1.5 Freight or Passenger Railroad Modifications

Shared Passenger Track Alternative A would modify the existing rail corridor to create a corridor that is primarily four mainline tracks (two electrified and shared with other passenger rail operators) from Los Angeles to Fullerton, and two mainline tracks (electrified and shared with both passenger rail and freight operators) from Fullerton to Anaheim. Freight rail would operate primarily on the nonelectrified tracks, although the electrified tracks could accommodate freight traffic if necessary (up to 10 BNSF freight trains per day would be able to use the two passenger rail tracks), while maintaining service and operation levels for all operators within the corridor. The following sections describe the freight and passenger railroad modifications in more detail, which include modifications to BNSF storage and intermodal facilities as well as modifications to and relocations of existing passenger rail stations.

[6] The Authority defines three levels of maintenance to be conducted at an LMF.



Source: Authority 2025a

Figure 2-10 Shared Passenger Track Alternative A: 26th Street Light Maintenance Facility

BNSF Railway Storage and Intermodal Facilities

Adding and electrifying tracks in the existing right-of-way would require the Authority to remove or modify track and right-of-way that is currently used or planned for future use by BNSF for train storage and intermodal operations. This requires modifications to BNSF's plans for expansion at its yards in Vernon and Commerce. In several locations, Shared Passenger Track Alternative A would require removal/relocation of existing BNSF infrastructure. Thus, Shared Passenger Track Alternative A would replace the affected BNSF infrastructure, primarily adjacent to Hobart Yard, to maintain BNSF capacity and avoid disruptions to operations.

Table 2-4 lists the BNSF storage capacity that would be removed from the corridor and relocated to the new consolidated storage yard adjacent to Hobart Yard; refer to Figure 2-11 for an overview of the relocated infrastructure. The new storage yard would provide 101,094 track feet of storage, including 5,850 track feet for a new runaround track,[7] which is slightly more than the amount removed from the corridor (90,940 track feet). This is a result of the layout and overall length of the new consolidated yard. The tracks need to be operational while fitting within the new yard space and maintaining the removed storage capacity, and therefore some replacement tracks would be longer than the ones that are being removed from the corridor. In addition to the relocations described in Table 2-4, some BNSF yard lead and storage tracks throughout the corridor would be relocated and replaced within the same area, with the same level of storage capacity and operational functionality maintained. This includes the Pico Rivera Yard north and south lead tracks, La Mirada Yard lead track and storage track, and Fullerton storage track on the southern side between Commonwealth Avenue and Highland Avenue.

Table 2-4 BNSF Railway Facility or Track to Be Removed or Modified

HSR Project Element Affecting BNSF Infrastructure	BNSF Facility/Track to Be Removed/Relocated/Modified	Length of Removed/ Relocated Tracks (TF)
HSR mainline and layover tracks	BNSF 8th St Yard (BNSF storage tracks between 1st St and I-10 along West Bank)	35,000
Relocated Commerce Metrolink Station	South Vail Support Track (between Vail St and Minson Wy)	3,800
4th mainline track	Pico Rivera Storage Tracks	4,000
4th mainline track	Norwalk Support Track (between Telegraph Rd and Florence Ave)	4,400
4th mainline track	Santa Fe Springs Staging Track (through existing Norwalk/Santa Fe Springs Metrolink Station area)	14,600
Fullerton braced trench	Buena Park/Fullerton Storage Tracks (on north side between Dale St and Gilbert St)	15,840
4th mainline track	Fullerton support track (north of Fullerton Amtrak/Metrolink Station)	4,500
4th mainline track	Fullerton storage track (on north side between Commonwealth Ave and Highland Ave)	8,800
Total		**90,940**

Source: STV 2025

[7] Runaround tracks allow a locomotive to move around the train and attach to the opposite end, enabling the train to be switched or moved in the desired direction. The runaround track must be as long as the longest set of cars that would be pulled. A runaround track is generally recommended for all modern rail yards to reduce overall freight congestion.

BNSF = BNSF Railway; HSR = high-speed rail; I = interstate; TF = track feet



Source: STV 2025

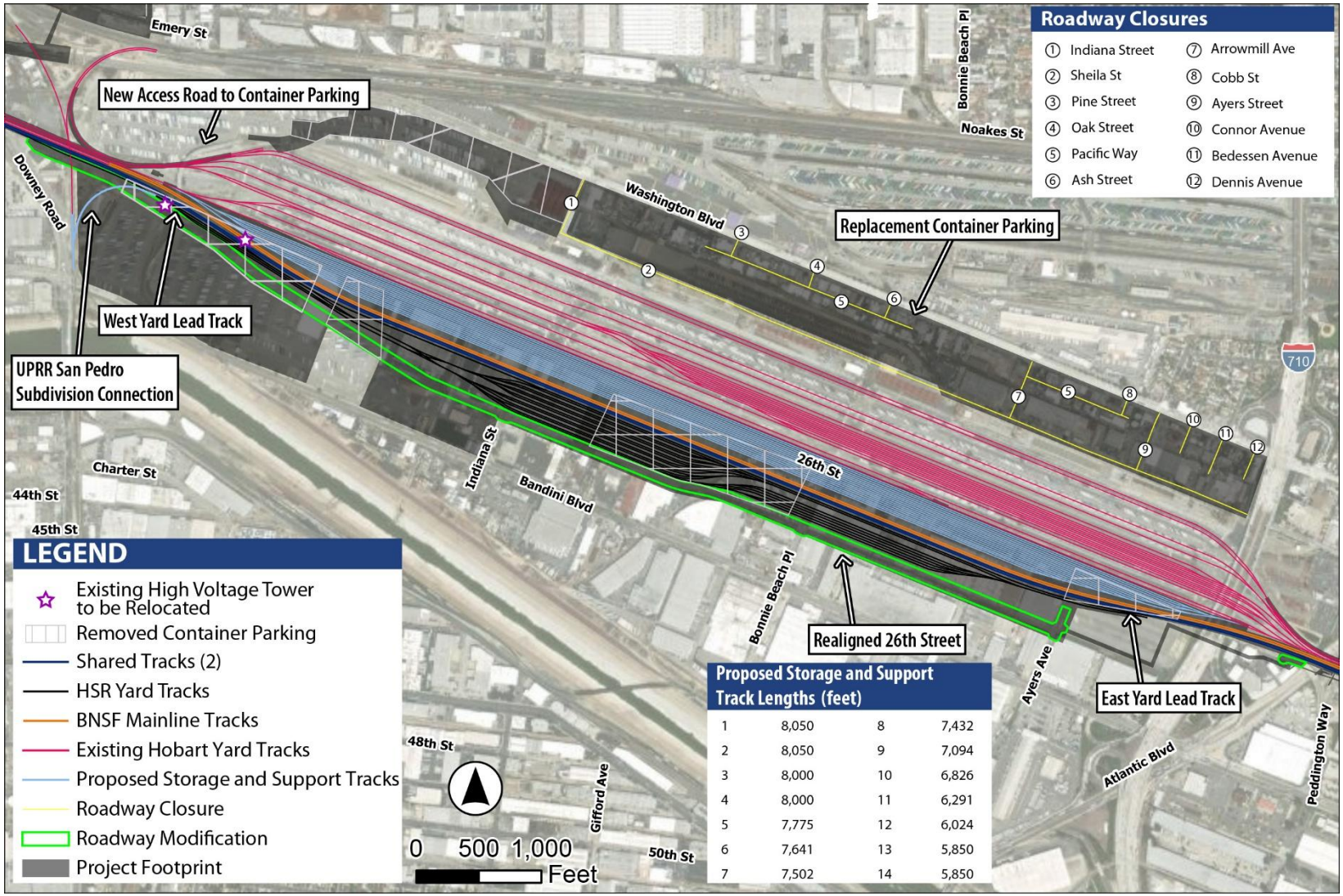
Figure 2-11 BNSF Railway Infrastructure Affected by the Los Angeles to Anaheim Project Section

BNSF Railway Los Angeles Intermodal Facility (Hobart Yard)

Figure 2-12 depicts the proposed changes at Hobart Yard. The consolidated storage yard, BNSF mainline tracks, shared tracks, and new connection to the UPRR San Pedro Subdivision would be up to 250 feet south of the current southern limit at Hobart Yard and into properties south of 26th Street. New second lead tracks into Hobart Yard from the west and east would also be added. These additional lead tracks would allow freight trains to move off the mainline tracks at speed and avoid delays and backups in an already heavily congested corridor. These track changes would require the vacation and realignment of the 26th Street right-of-way from Downey Road to Atlantic Boulevard.

The changes described above, along with LMF yard lead tracks, would displace some existing BNSF container parking south of the railroad corridor. This container parking would be replaced by acquiring properties north of Hobart Yard along the south side of Washington Boulevard, which would require a new access road north of Hobart Yard and the closure of several roads between Washington Boulevard and Sheila Street (refer to Section 2.2.1.6, State Highway or Local Roadway Modifications, for more details on roadway changes related to Hobart Yard). The new access road would also displace some existing container parking that would be replaced in the new container parking area.

Additionally, two high-voltage utility towers would be relocated to accommodate the 26th Street realignment.



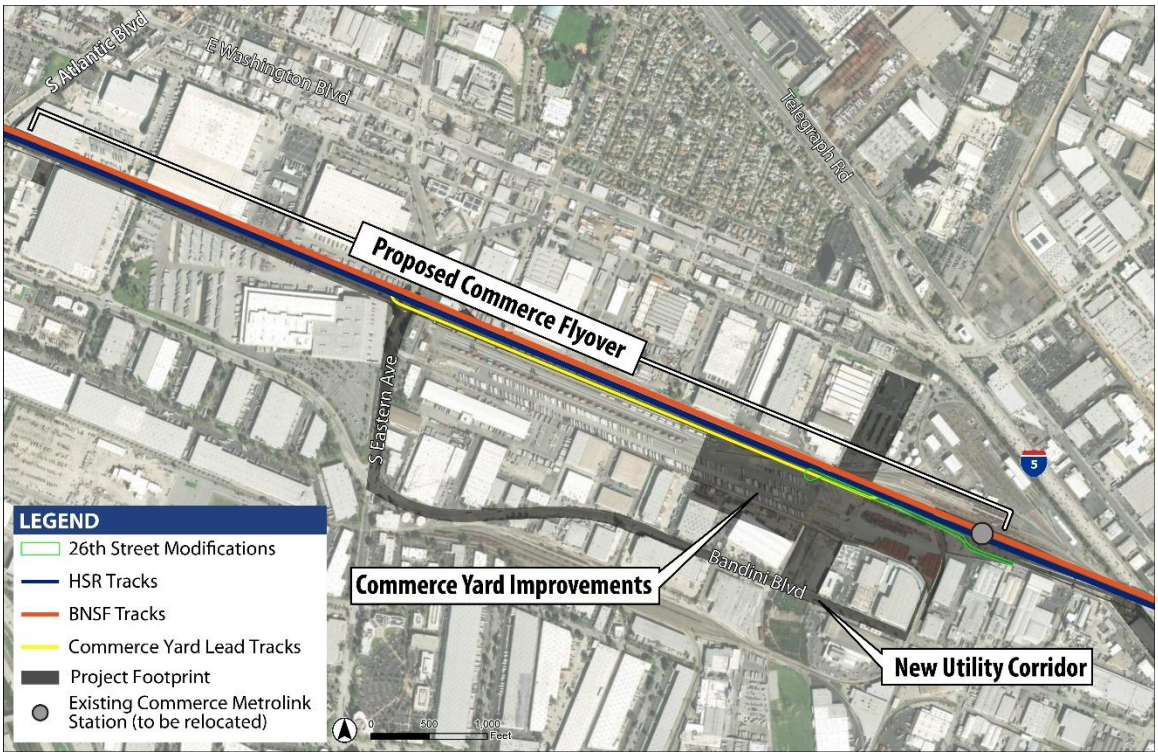
Sources: Authority 2025a; ESRI 2020

Figure 2-12 Hobart Yard Modifications (Shared Passenger Track Alternative A)

BNSF Railway Commerce Intermodal Facility (Commerce Yard)

Adjacent to Commerce Yard, the Commerce Flyover would separate passenger trains on an elevated structure from the freight trains running at grade. Figure 2-13 depicts the modifications required throughout the Commerce Yard area to maintain operations. Two new BNSF yard tracks would be added, converging into a new BNSF stub lead track west of I-5, with additional connector tracks. Improvements would include reconstructing several of the lead tracks, relocating the truck entrance gates and internal access road, and adding truck storage parking and a switching tail track. These yard improvements would require a portion of 26th Street to be closed; 26th Street currently provides access to the yard from the east, but the new entrance to the yard would require approximately 1,300 feet of the road to be closed.

Existing utilities along the south side of the railroad corridor would be relocated to the south in a new utility corridor, within Bandini Boulevard. Additionally, the high-voltage power lines currently running south of and parallel to the railroad corridor must be raised to provide the required clearance from the Commerce Flyover structure.



Sources: Authority 2025a; ESRI 2020

Figure 2-13 Commerce Flyover and Commerce Yard Modifications

Modified Metrolink Stations

Norwalk/Santa Fe Springs Metrolink Station Modifications

HSR trains would not stop at the Norwalk/Santa Fe Springs Metrolink Station, but modifications would be required for HSR operations, as depicted on Figure 2-14. The existing platforms at Norwalk/Santa Fe Springs Metrolink Station are in an area that would not be able to accommodate an additional mainline track and shared operations between HSR and Metrolink. Adding the additional mainline track would require shifting the existing platforms to an area with a straight section of track. Therefore, the Metrolink platforms would be moved to be served by the shared tracks on the new elevated structure, approximately 350 feet east of the existing alignment (at their farthest points). The modified station would be elevated, with two 680-foot side

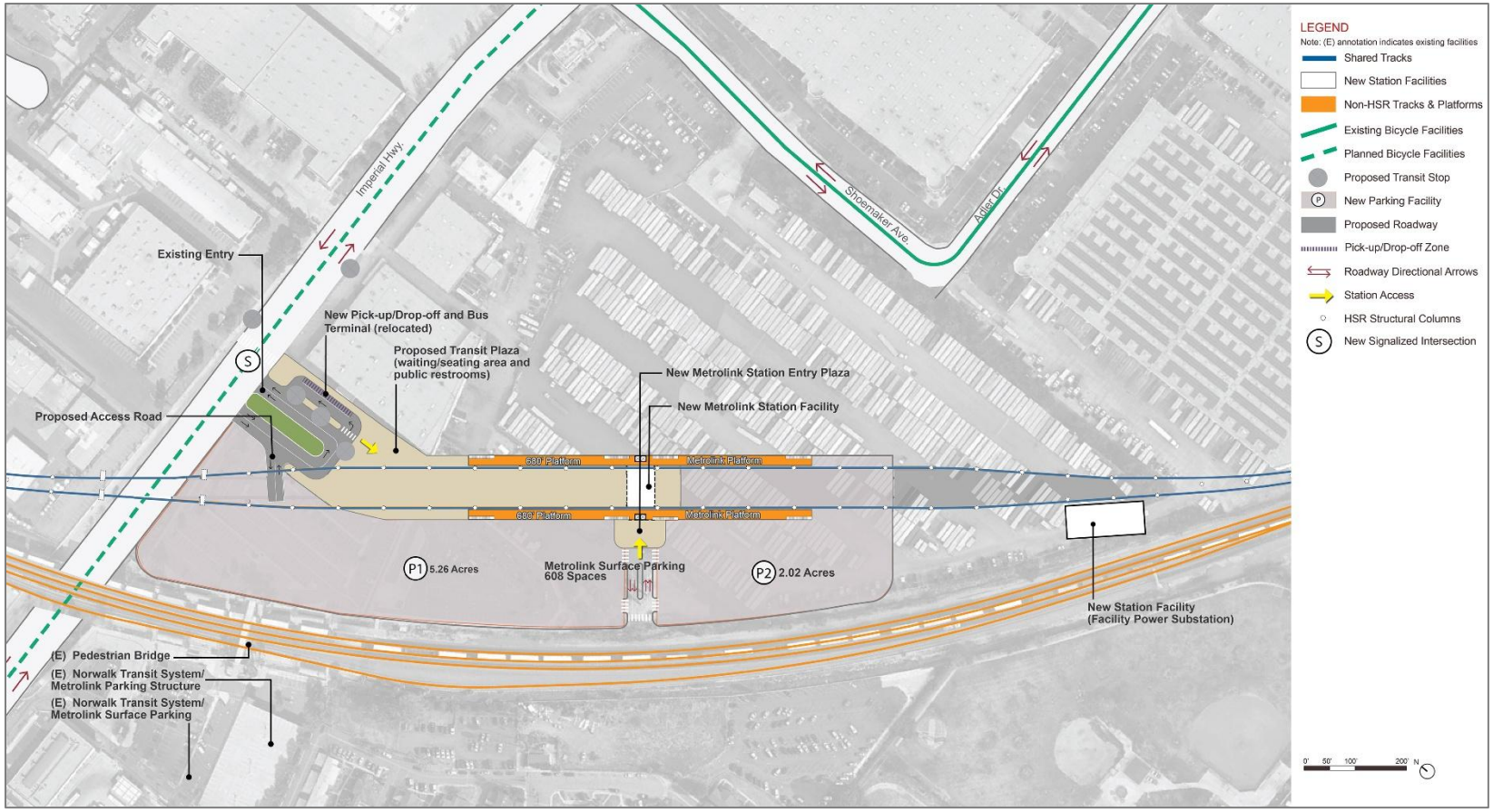
platforms, capable of future extension to 1,000 feet; the space for the future extension is included within the project footprint.

The existing Metrolink parking and bus drop-off west of the railroad corridor would be relocated to the east of the elevated structure to provide better access to the modified Metrolink platforms. Station entry points would be on Imperial Highway to the north and at Shoemaker Avenue and Adler Drive to the east and would require new access roadways. On Imperial Highway, the signalization leading into the parking garage would require modifications, as required by the City of Norwalk. The project would provide 608 surface parking spaces west of the modified platforms to replace the parking spaces at the existing Norwalk/Santa Fe Springs Metrolink Station displaced by the HSR modifications. Parking and pick-up/drop-off for Metrolink passengers would be within surface parking lots.

Fullerton Metrolink/Amtrak Station Modifications

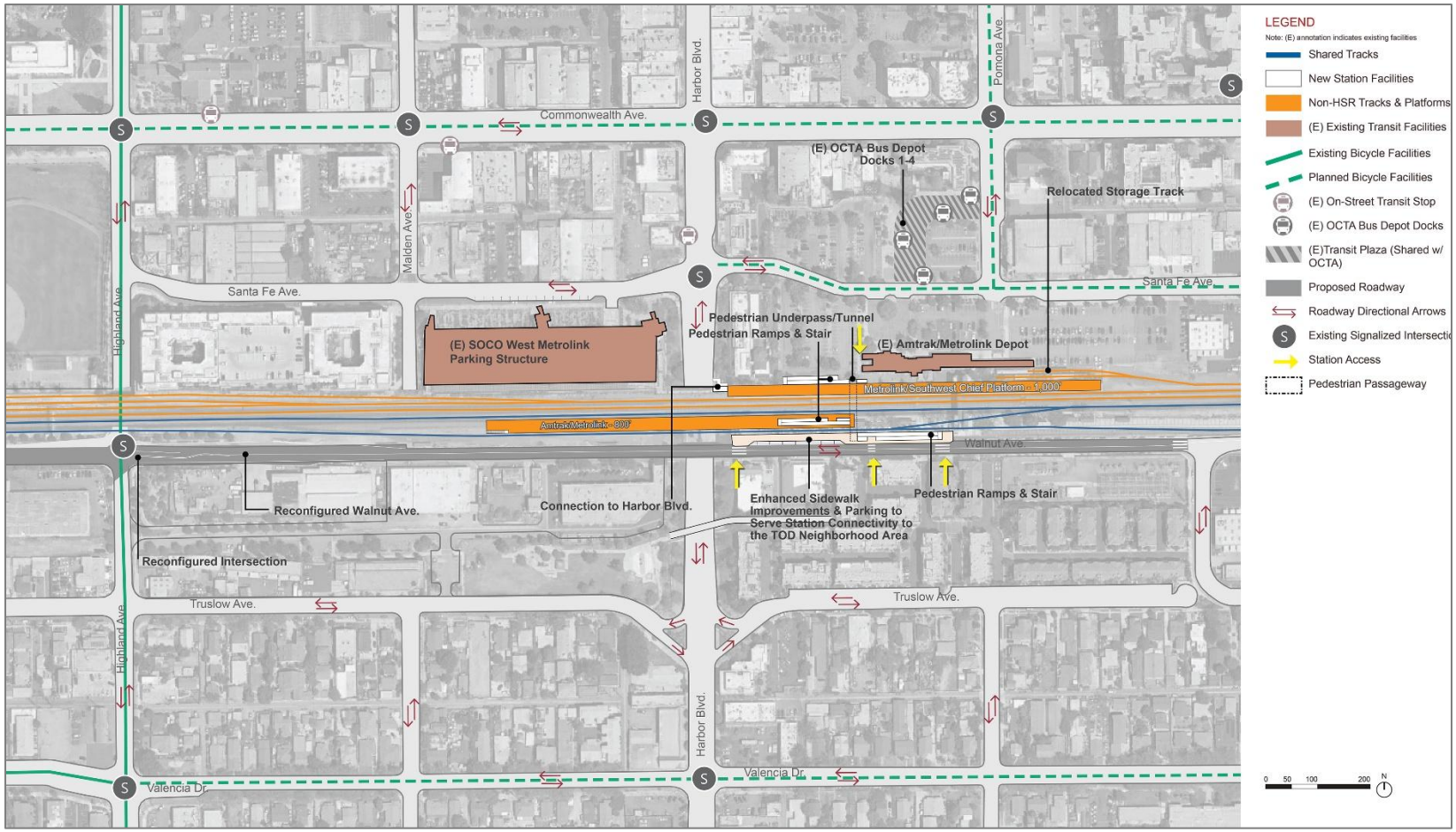
HSR trains would not stop at the Fullerton Metrolink/Amtrak Station, but modifications would be required for HSR operations, as depicted on Figure 2-15. At the Fullerton Metrolink/Amtrak Station, a fourth mainline track would need to be added on the southern side of the corridor, outside of the existing railroad right-of-way, to allow HSR trains to pass through the station. A new railroad bridge would be built over Highland Avenue to accommodate the new shared track, which requires Walnut Avenue to be slightly realigned to the south, and the intersection of Walnut Avenue and Highland Avenue would need to be redesigned.

Several modifications would occur for the Metrolink/Amtrak station platforms. The two existing platforms on the southern side would be removed, and a new 800-foot center platform would be added over Harbor Boulevard. The existing pedestrian bridge east of Harbor Boulevard that connects the two side platforms would be removed and replaced by a new pedestrian underpass that connects the existing northern platform, new center platform, and Walnut Avenue to the south, with ramps and stairs providing access. South of the new Metrolink/Amtrak center platform, Walnut Avenue would be slightly narrowed, and sidewalk improvements and crosswalks would be added east of Harbor Boulevard to improve station connectivity to the neighborhood.



Source: Authority 2025a

Figure 2-14 Modified Norwalk/Santa Fe Springs Metrolink Station Site Plan



Source: Authority 2025a

Figure 2-15 Modified Fullerton Metrolink/Amtrak Station Site Plan

Relocated Metrolink Stations

Commerce Metrolink Station Relocation

As stated in Section 2.2.1.1, the Commerce Flyover would require the Commerce Metrolink Station to be relocated to an area northeast of the intersection of Telegraph Road and Maple Avenue, which is approximately 0.75 mile to the east of its current location. The relocated Commerce Metrolink Station would be for Metrolink trains only; no HSR trains would stop at this station. An HSR paralleling station would be co-located at the relocated station site. Most of the relocated station would be within Montebello, including the replacement surface parking, plaza, and internal access roads; the platform and nonpublic station facilities north of the railroad corridor would be within Commerce.

The relocated station would have a center platform along the southern side of the rail corridor, accessible from the north via Sycamore Street via a new pedestrian underpass, and from the south via Maple Avenue. The intersection of Sycamore Street and Supply Avenue would be modified with pedestrian crosswalks, and the intersection of Telegraph Road and Maple Avenue would have a new signal and crosswalks to provide safe access to the new station location. All the existing station facilities, such as a transit plaza for buses, bicycle parking, vehicle parking (140 spaces), and a pick-up/drop-off area for motorists, would be replaced south of the corridor, to be accessed via Maple Avenue.

Buena Park Metrolink Station Relocation

As stated in Section 2.2.1.1, the HSR project would add and realign tracks through the existing Buena Park Metrolink Station, necessitating the relocation of the station. The Buena Park Metrolink Station would be relocated to between South Coyote Creek and Beach Boulevard, approximately 0.75 mile northwest of its current location within Buena Park. The proposed relocated Buena Park Metrolink Station would be for Metrolink trains only; no HSR trains would stop at this station.

The relocated station would have a center platform provided along the northern side of the existing rail corridor, accessible from the north via Stage Road and from the east via Beach Boulevard. A new signalized intersection is proposed at the intersection of Coyote Creek and Stage Road. All existing station facilities would be replaced, including a transit plaza for buses, bicycle parking, vehicle parking (313 spaces), and a pick-up/drop-off area for motorists.

2.2.1.6 State Highway or Local Roadway Modifications

Modifications at Roadway Crossings

Shared Passenger Track Alternative A would cross 58 federal, state, and locally controlled roadways, most of which are currently grade separated. A portion of the foregoing roadway crossings would require, in general, one of the following three types of roadway modifications:

- **New grade separations:** There are six roadway crossings where new railroad grade separations (railroad bridge crossings) would be needed. Five of the existing at-grade roadways would be fully grade separated and lowered to cross under the proposed railroad bridges. One roadway (Lakeland Road) would be partially grade separated and would not require vertical realignment, because the shared tracks would cross over the roadway on a new bridge.
- **Modified existing grade separations (roadway vertical realignment):** The alignment would use existing railroad bridges throughout the corridor, most of which would need to be widened or new bridges would need to be added adjacent to the existing bridges to accommodate new tracks. At nine of these existing grade separations, the roadways would require vertical realignments (i.e., be lowered) to provide the required clearances between the road and the railroad bridge.

- **Modified existing grade separations (new piers and abutments):** Thirteen existing grade separations would require modified piers or abutments to accommodate new or widened railroad bridges. No vertical realignment of the roadway would be required.

Eight at-grade crossings at Orangethorpe Avenue, La Palma Avenue, Sycamore Street, Broadway, Santa Ana Street, Sixth Street, Vermont Avenue, Ball Road, and Lewis Street would remain at grade and would be modified only to add OCS to the existing tracks.

Additionally, all existing roadway overcrossings that would span over the shared tracks would be modified to have protective barriers on the top to prevent people or objects from entering the HSR right-of-way from the bridge. Detailed plans of barrier type and installation details will be determined during the Preliminary Engineering for Procurement design phase and coordination with the corridor stakeholders.

Table 2-5 lists all the crossings and any modifications that would be required along the Shared Passenger Track Alternative A alignment.

Table 2-5 Modifications to Roadway Crossings (from northwest to southeast)

Roadway	City	Current Crossing Configuration	Proposed Modification
1st St	Los Angeles	Overcrossing	None
4th St	Los Angeles	Overcrossing	None
6th St/Whittier Blvd	Los Angeles	Overcrossing	None
7th St	Los Angeles	Overcrossing	None
I-10 (Santa Monica freeway)	Los Angeles	Overcrossing	None
Olympic Blvd	Los Angeles	Overcrossing	None
Washington Blvd	Los Angeles	Undercrossing	None
Soto St	Los Angeles	Undercrossing	None
Downey Rd	Vernon	Undercrossing	New pier and abutments within roadway
Private access road	Vernon	Overcrossing	None
I-710 (Long Beach freeway)	Vernon	Overcrossing	None
Atlantic Blvd	Commerce	Undercrossing	New piers and abutments within roadway
Eastern Ave	Commerce	Undercrossing	New piers and abutments within roadway
I-5 (Santa Ana freeway)	Commerce	Undercrossing	None
Telegraph Rd	Commerce	Undercrossing	None
Garfield Ave	Commerce	Undercrossing	None
Greenwood Ave	Montebello	Undercrossing	None
Paramount Blvd	Pico Rivera	Undercrossing	None
SR 19 (Rosemead Blvd)	Pico Rivera	Undercrossing	Road vertical realignment, new abutments within roadway
Passons Blvd	Pico Rivera	Undercrossing	New pier and abutments within roadway
Slauson Ave	Santa Fe Springs	Overcrossing	Pier modifications

Roadway	City	Current Crossing Configuration	Proposed Modification
I-605 (San Gabriel freeway)	Santa Fe Springs	Overcrossing	None
Pioneer Blvd	Santa Fe Springs	At grade	New grade separation; roadway lowered to cross under tracks on a new railroad bridge
Norwalk Blvd	Santa Fe Springs	At grade	New grade separation; roadway lowered to cross under tracks on a new railroad bridge
Los Nietos Rd	Santa Fe Springs	At grade	New grade separation; roadway lowered to cross under tracks on a new railroad bridge
Santa Fe Springs Rd	Santa Fe Springs	Undercrossing	New piers and abutments within roadway
Telegraph Rd	Santa Fe Springs	Undercrossing	New pier and abutments within roadway
Florence Ave	Santa Fe Springs	Undercrossing	New pier and abutments within roadway
Lakeland Rd	Santa Fe Springs	At grade	New grade separation (for HSR only); roadway remains at grade and shared tracks on elevated structure
Imperial Hwy	Santa Fe Springs, Norwalk	Undercrossing	None
Carmenita Rd	Santa Fe Springs	Undercrossing	Roadway vertical realignment, new piers and abutments within roadway
Rosecrans Ave/Marquardt Ave	Santa Fe Springs	Overcrossing	None
Valley View Ave	Santa Fe Springs, La Mirada	Undercrossing	New piers and abutments within roadway
Alondra Blvd	La Mirada	Overcrossing	Bridge replacement, roadway vertical realignment
SR 39 (Beach Blvd)	Buena Park	Undercrossing	New piers and abutments within roadway
Dale St	Buena Park	Undercrossing	Roadway vertical realignment, new piers and abutments within roadway
Gilbert St	Fullerton	Undercrossing	Roadway vertical realignment, new pier and abutments within roadway
Commonwealth Ave	Fullerton	Undercrossing	Roadway vertical realignment, new piers and abutments within roadway
Euclid St	Fullerton	Undercrossing	New pier and abutments within roadway
Highland Ave	Fullerton	Undercrossing	New abutments within roadway
Harbor Blvd	Fullerton	Undercrossing	New piers and abutments within roadway
Lemon St	Fullerton	Undercrossing	None

Roadway	City	Current Crossing Configuration	Proposed Modification
Orangethorpe Ave	Anaheim	At grade	None
SR 91 (Riverside freeway)	Anaheim	Overcrossing	None
La Palma Ave	Anaheim	At grade	None
Sycamore St	Anaheim	At grade	None
Lincoln Ave	Anaheim	Undercrossing	None
Broadway	Anaheim	At grade	None
Santa Ana St	Anaheim	At grade	None
South St	Anaheim	At grade	None
Vermont Ave	Anaheim	At grade	None
Ball Rd	Anaheim	At grade	None
Lewis St	Anaheim	Undercrossing	Roadway vertical realignment, new piers and abutments within roadway
Cerritos Ave	Anaheim	At grade	New grade separation; roadway lowered to cross under tracks on a new railroad bridge
State College Blvd	Anaheim	At grade	New grade separation; roadway lowered to cross under tracks on a new railroad bridge
Katella Ave	Anaheim	Undercrossing	Roadway vertical realignment, roadway widening, new piers and abutments within roadway
SR 57 (Orange freeway)	Anaheim	Overcrossing	None
Douglass Rd	Anaheim	Undercrossing	Roadway vertical realignment, new piers and abutments within roadway

Source: Authority 2025a
Authority = California High-Speed Rail Authority; HSR = high-speed rail; I = interstate; overcrossing = road over train tracks; SR = State Route; undercrossing = road under train tracks

New Grade Separations

As indicated in Table 2-5, five existing at-grade roadways would be grade separated for passenger rail and freight, with the roadway lowered to cross under new railroad bridges. These new grade separations are described in detail in Table 2-6, which includes references to the temporary and permanent footprints depicted on Figure 2-16 through Figure 2-19. The temporary project footprint includes areas such as utility easements and construction staging areas while the permanent project footprint includes areas that would be needed permanently for operation of HSR or areas that would permanently lose access from changes in roadway elevation. These grade separations are early action projects, which are described further in Section 2.3.1, Grade Separations.

Lakeland Avenue would be grade separated for HSR and passenger rail on a new elevated structure, but the freight tracks would remain at grade, with a minimal area of temporary and permanent impacts. Therefore, it is not included in Table 2-6.

Table 2-6 New Grade Separations with Roadway Vertical Realignments

Roadway	Grade Separation Description
Pioneer Boulevard (Figure 2-16)	▪ The existing roadway configuration at the Pioneer Blvd crossing in Santa Fe Springs consists of two northbound and two southbound traffic lanes and left-turn lanes to Rivera Rd (which is immediately adjacent and to the north of the railroad corridor) in both directions, with sidewalks on both sides of the road. ▪ The at-grade crossing would be grade separated as a roadway undercrossing, with the railroad tracks on a bridge structure. Approximately 1,275 feet of Pioneer Blvd would be lowered, with the roadway approximately 20 feet below its current elevation at the lowest point of the undercrossing. Additional excavation depths would be required for bridge footings, utilities, pump station, and roadway subbase. ▪ Direct access to Rivera Rd would be removed and a new roadway that loops west and south just north of the crossing would provide access from Pioneer Blvd to Rivera Rd.
Norwalk Boulevard (Figure 2-17)	▪ The existing roadway configuration at the Norwalk Blvd crossing in Santa Fe Springs consists of two northbound and two southbound traffic lanes and a southbound left-turn lane to eastbound Los Nietos Rd (which is immediately south of the crossing), with sidewalks on both sides of the roadway. ▪ The at-grade crossing would be grade separated as a roadway undercrossing, with the railroad tracks on a bridge structure. Approximately 1,325 feet of Norwalk Blvd would be lowered by approximately 20 feet below its current elevation at the lowest point. Roadway clearance from bottom of bridge to top of pavement would be approximately 15 to 16.5 feet. Additional excavation depths would be required for bridge footings, utilities, pump station, and roadway subbase. ▪ The intersection of Norwalk Blvd and Los Nietos Rd would also be lowered, as also described below.
Los Nietos Road (Figure 2-17)	▪ The existing roadway configuration at the Los Nietos Rd crossing in Santa Fe Springs consists of two westbound and two eastbound traffic lanes and a westbound left-turn lane to Norwalk Blvd (which is immediately west of the crossing), with sidewalks on both sides of the roadway. ▪ The at-grade crossing would be grade separated as a roadway undercrossing, with the railroad tracks on a bridge structure. Approximately 1,700 feet of Los Nietos Rd would be lowered, with the roadway elevation approximately 25 feet below its current elevation at the lowest point. Roadway clearance from bottom of bridge to top of pavement would be approximately 15 to 16.5 feet. Additional excavation depths would be required for bridge footings, utilities, pump station, and roadway subbase. ▪ The intersection of Norwalk Blvd and Los Nietos Road would also be lowered as part of this and the Norwalk Blvd grade separation.
Cerritos Avenue (Figure 2-18)	▪ The existing roadway configuration at the Cerritos Ave crossing in Anaheim consists of two westbound and two eastbound traffic lanes with sidewalks on both sides of the roadway. ▪ The at-grade crossing would be grade separated as a roadway undercrossing, with the railroad tracks on a bridge structure. Approximately 1,850 feet of Cerritos Ave would be lowered by 25 feet below its current elevation at the lowest point. Roadway clearance from bottom of bridge to top of pavement would be approximately 15 to 16.5 feet. Additional excavation depths would be required for bridge footings, utilities, pump station, and roadway subbase. ▪ In order to maintain its intersection with Cerritos Ave, Vernon St would need to be lowered about 5 feet below its existing elevation. Similarly, Lewis St would need to be lowered to maintain the intersection with Cerritos Ave.

Roadway	Grade Separation Description
State College Boulevard (Figure 2-19)	▪ The existing roadway configuration at the State College Blvd crossing in Anaheim consists of three northbound and three southbound traffic lanes with sidewalks on both sides of the roadway. ▪ The at-grade crossing would be grade separated as a roadway undercrossing, with the railroad tracks on a bridge structure. Approximately 1,660 feet of State College Blvd would be lowered below its current elevation, up to 25 feet at the lowest point. Roadway clearance from bottom of bridge to top of pavement would be approximately 17.5 feet. Additional excavation depths would be required for bridge footings, utilities, pump station, and roadway subbase. ▪ In order to maintain its intersections with State College Blvd, Howell Ave and Wright Circle would also need to be lowered below its existing elevation, along with multiple driveways and access roads along State College Blvd.



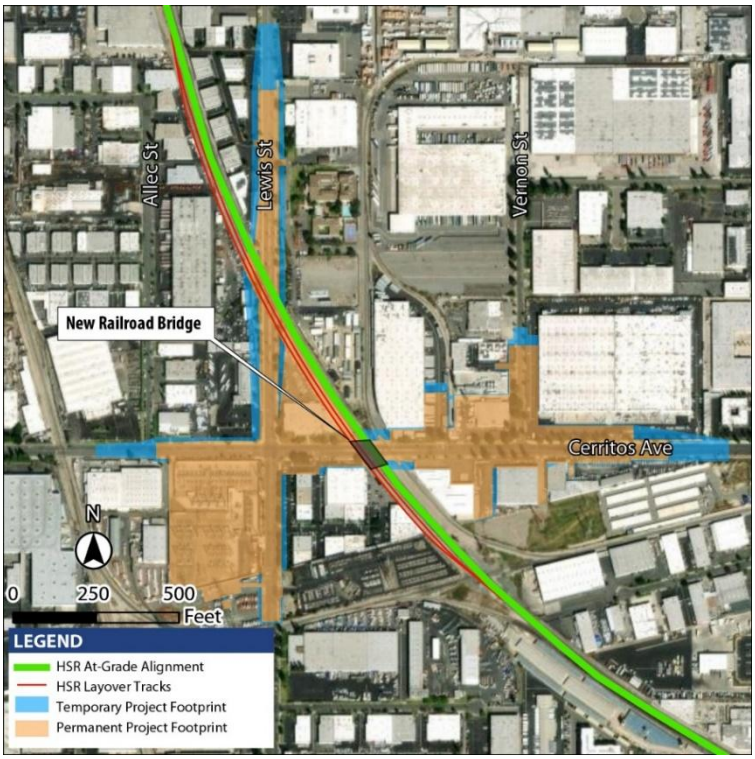
Sources: Authority 2025a; ESRI 2020

Figure 2-16 Pioneer Boulevard Grade Separation



Sources: Authority 2025a; ESRI 2020

Figure 2-17 Norwalk Boulevard and Los Nietos Road Grade Separations



Sources: Authority 2025a; ESRI 2020

Figure 2-18 Cerritos Avenue Grade Separation



Sources: Authority 2025a; ESRI 2020

Figure 2-19 State College Boulevard Grade Separation

Modifications to Other Roadways

In addition to modifications to roadway crossings described above for the railway alignment, several other roadways along the alignment would require modifications as a result of other project elements.

Roadway Modifications by Hobart Yard

The addition of new storage tracks and realignment of existing tracks throughout the Hobart Yard area would require 26th Street to be realigned. The roadway currently forms the southern boundary of Hobart Yard. At the eastern end of the yard, at Atlantic Boulevard, 26th Street connects to Pennington Way. From the UPRR San Pedro Subdivision track to Atlantic Boulevard, 26th Street would be realigned about 500 feet south from its existing location, at the farthest point. The realigned 26th Street would provide access to the 26th Street LMF, just north of the street. Currently, 26th Street intersects with Indiana Avenue, Bonnie Beach Place, and Ayers Avenue. Indiana Avenue and Bonnie Beach Place would connect with the realigned 26th Street, and the segments north of the realigned 26th Street would be closed. The realigned 26th Street would not connect to Pennington Way; it would end at Ayers Avenue, and Pennington Way would end in a cul-de-sac west of Atlantic Boulevard, accessible only from Bandini Boulevard. The existing segment of 26th Street between Ayers Avenue and Pennington Way would be closed.

Several roads between Sheila Street and Washington Boulevard are proposed to be closed because of the relocated BNSF truck parking. These roadway closures include the following, and are depicted on Figure 2-12 in yellow:

- Indiana Street
- S Pine Street
- Pacific Way
- Oak Street

- Ash Street
- Arrowmill Avenue
- Ayers Avenue
- Bedessen Avenue
- Connor Avenue
- Dennis Avenue

Roadway Modifications by Commerce Yard

Access is provided by 26th Street to BNSF's Commerce Yard from the east, but the yard improvements would require the entrance to the yard to be relocated approximately 1,300 feet to the east. This segment of 26th Street, within BNSF property, would be closed, and a new cul-de-sac would be provided at the end of the road.

Roadway Modifications by the Fullerton Braced Trench

The braced trench in Fullerton would be located partially outside the existing railroad right-of-way along the south side of the corridor, within the existing Artesia Boulevard right-of-way. Artesia Boulevard would be realigned slightly south, from approximately Pritchard Avenue to Gilbert Street. The intersection of Artesia Avenue and Gilbert Street would be reconfigured.

Roadway Modifications by Fullerton Metrolink/Amtrak Station

The changes at the Fullerton Metrolink/Amtrak Station would require Walnut Avenue to be realigned. Walnut Avenue currently runs east to west from Richman Avenue to Lawrence Avenue, south of and adjacent to the existing railroad corridor. With the addition of a fourth mainline track, Walnut Street would be slightly realigned south, from Richman Avenue to Lemon Street. All existing lanes and sidewalks would be maintained. At Highland Avenue, Walnut Street would be lowered slightly to meet the new, lowered grade of Highland Avenue, and the intersection would be reconfigured.

2.2.2 Shared Passenger Track Alternative B

Shared Passenger Track Alternative B would follow the same alignment and share the same project features and operational assumptions as Shared Passenger Track Alternative A, except for the location of the LMF as discussed below.

2.2.2.1 Alignment

The BNSF mainline and shared tracks for Shared Passenger Track Alternative B would be the same as those discussed for Shared Passenger Track Alternative A, as described in Section 2.2.1.1, because the LMF location would not affect the BNSF mainline and shared tracks.

2.2.2.2 Ancillary Facilities

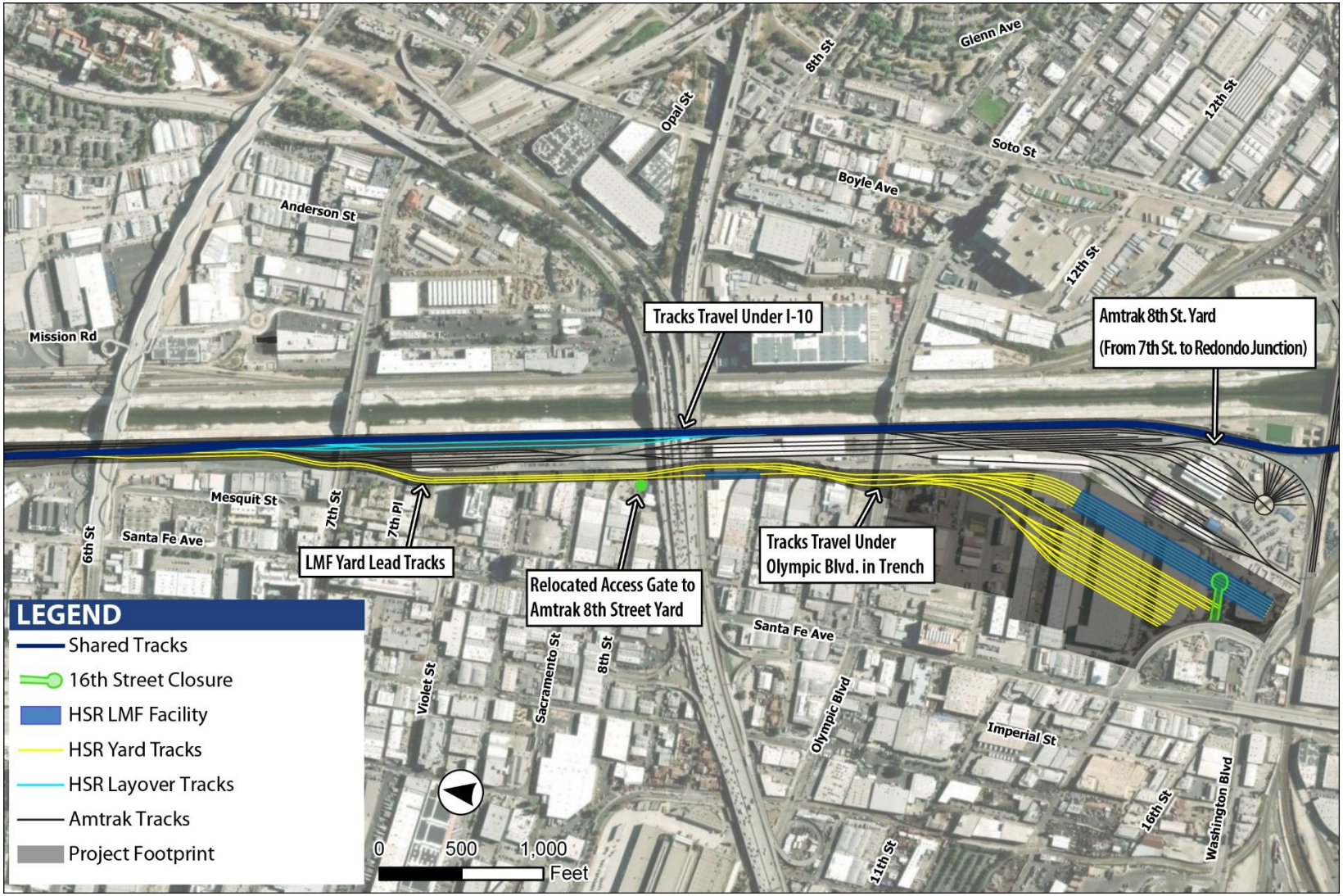
The proposed ancillary facilities for Shared Passenger Track Alternative B would be the same as those discussed for Shared Passenger Track Alternative A. Refer to Section 2.2.1.2 for more information on proposed ancillary facilities.

2.2.2.3 High-Speed Rail Station Facilities

Under Shared Passenger Track Alternative B, the proposed HSR station facilities at ARTIC would be the same as for Shared Passenger Track Alternative A. Refer to Section 2.2.1.3 for more information on proposed station sites.

2.2.2.4 Light Maintenance Facility

Shared Passenger Track Alternative B proposes an LMF between Olympic Boulevard and 15th Street, immediately adjacent to the existing Amtrak Eighth Street Yard. The 15th Street LMF would include the same maintenance operation facilities as the 26th Street LMF under Shared Passenger Track Alternative A, described in Section 2.2.1.4. Refer to Figure 2-20 for an overview of the 15th Street LMF.



Source: Authority 2025a

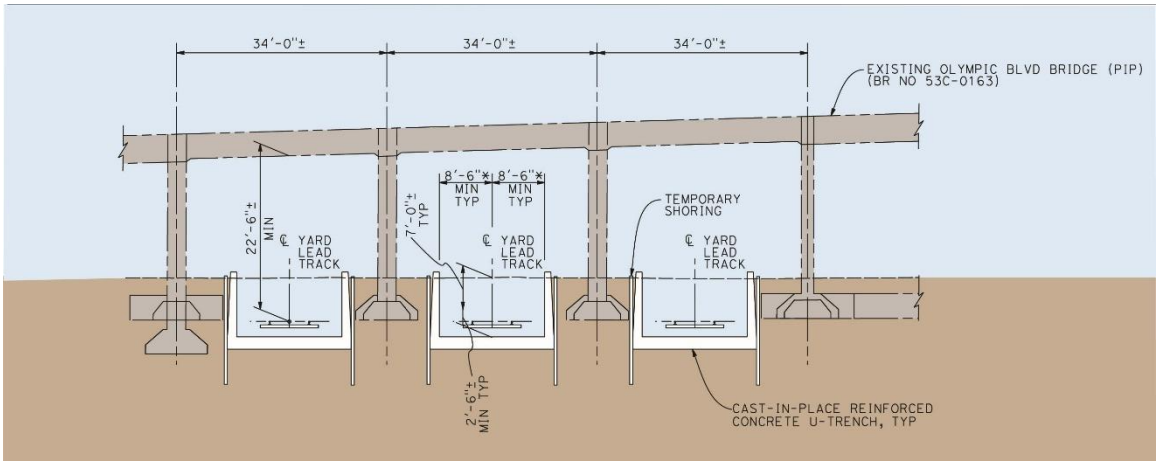
Figure 2-20 Shared Passenger Track Alternative B: 15th Street Light Maintenance Facility

The 15th Street LMF would have an overall size of 52 acres and would include 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 would be a single-ended yard, with access to and from the mainline tracks provided only from one side, at the northern end.

Primary roadway access to the 15th Street LMF would be from Washington Boulevard and 15th Street. HSR trains would access the yard via new yard lead tracks, which would start north of Seventh Street; the HSR project has been designed in coordination with the Los Angeles County Metropolitan Transportation Authority so that it would not conflict with the planned Metro Arts District Station, proposed north of Seventh Street. Two yard lead tracks would diverge from the mainline tracks out of the existing railroad right-of-way, cross under Seventh Street, and then branch into three tracks. Continuing south, the tracks would cross through part of Amtrak's existing primary access road to its Eighth Street Yard, which is currently gated at Eighth Street; these gates would need to be relocated to the west, but Amtrak would still be able to use the road to access its Eighth Street Yard. The three 15th Street LMF yard lead tracks would continue south to cross under I-10.

Approaching Olympic Boulevard, the tracks would descend to provide the minimum required 24-foot clearance between the OCS and the historic Olympic Boulevard overpass. Only one track would fit between each of the Olympic Boulevard overpass' four piers. As depicted on Figure 2-21, each track would pass through the piers within a separate trench at a finished depth of 7 feet. The Olympic Boulevard piers would not be altered during construction and would remain in place during HSR operations.

South of Olympic Boulevard, the 15th Street LMF yard lead tracks would connect to the yard on a curve, which requires special trackwork (turnout tracks). To make this connection, the LMF site would be lowered to meet the yard lead tracks. This is because the yard lead tracks would still be below grade as they come out of the Olympic Boulevard trenches, and there would not be enough room to transition the tracks back up to the existing elevation of the LMF site. Additionally, the special trackwork to connect the yard leads to the LMF tracks needs to be located on flat sections of track, not on a slope. Therefore, to make the connection between the below-grade yard lead tracks and the yard tracks, the northern portion of the LMF site (approximately 25 acres) would be excavated up to an approximate depth of 8 feet and regraded at a finished depth of approximately 5 feet to match the grade of the yard lead tracks.



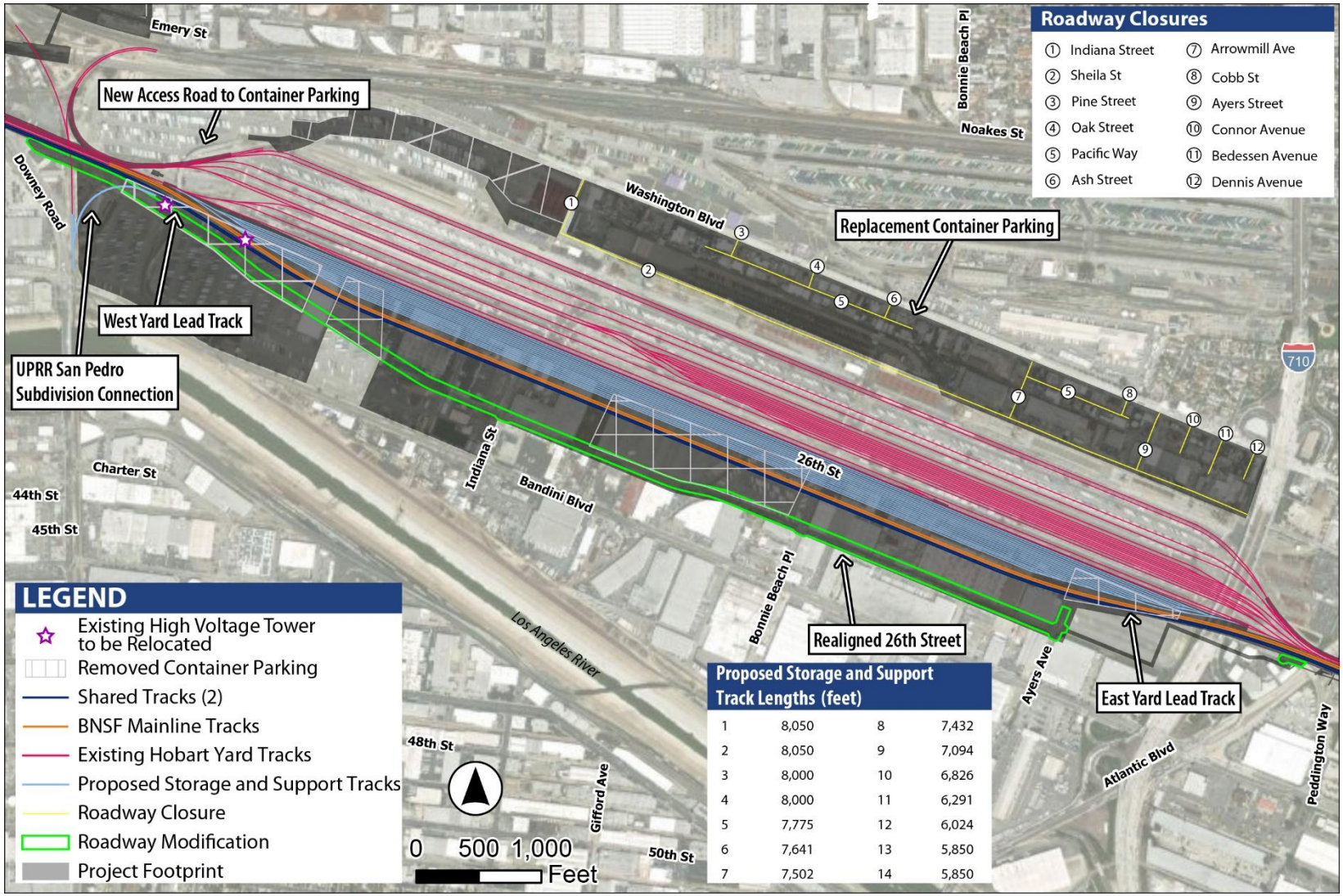
Source: Authority 2025a

Figure 2-21 Trenches for 15th Street Light Maintenance Facility Yard Lead Tracks Under Olympic Boulevard

2.2.2.5 Freight or Passenger Railroad Modifications

Freight and passenger railroad modifications for Shared Passenger Track Alternative B would be the same as for Shared Passenger Track Alternative A, except for one difference at Hobart Yard. Figure 2-22 illustrates Hobart Yard without the 26th Street LMF. Because there would not be LMF lead tracks or yard tracks running through BNSF's existing container parking areas, Shared Passenger Track Alternative B would displace slightly less container parking compared to Shared Passenger Track Alternative A.

The two passenger rail station modifications (Norwalk/Santa Fe Springs and Fullerton) and two Metrolink station relocations (Buena Park and Commerce) would be the same for Shared Passenger Track Alternative B as described for Shared Passenger Track Alternative A.



Sources: Authority 2025a; ESRI 2020

Figure 2-22 Shared Passenger Track Alternative B: Hobart Yard

2.2.2.6 State Highway or Local Roadway Modifications

The proposed modifications to roadways for Shared Passenger Track Alternative B would be the same as for Shared Passenger Track Alternative A, described in Section 2.2.1.6, except for the area around the 15th Street LMF site. Note that although the 26th Street LMF would not be included under Shared Passenger Track Alternative B, the realignment of 26th Street would still occur.

At the 15th Street LMF, Shared Passenger Track Alternative B would cross through part of Amtrak's access road to its Eighth Street Yard and through its existing access gate at Eighth Street. The access gate would be shifted to the west, and Amtrak would still be able to use its access road, but it would have to cross the three HSR yard lead tracks at grade to reach the road. The 15th Street LMF would also require the closure of a small portion of 16th Street, and the intersection of 15th Street and 16th Street would be reconfigured as a T-intersection. This portion of 16th Street, which is an existing cul-de-sac, serves the properties that would be acquired for construction of the 15th Street LMF. Refer to Figure 2-20, which depicts the portion of 16th Street that would be closed in green.

2.3 Early Action Projects

As described in the 2023 Project Update Report, the Authority has committed to investing in regionally important early action projects to provide early benefits to transit riders and local communities in Southern California, while laying a solid foundation for implementation of the HSR system. These early investments would be made by the Authority in collaboration with local and regional agencies. The types of projects include grade separations, track enhancements, and improvements at passenger rail stations, which would increase capacity, improve safety and air quality, and provide immediate mobility and reliability benefits for existing freight and passenger rail operations. The potential temporary construction and permanent operational environmental effects associated with these early action projects are included in the total evaluation of the Shared Passenger Track Alternatives. These early action projects may be implemented as standalone projects by other local agencies relying on the environmental analyses and conclusions of the Los Angeles to Anaheim Project Section in advance of the HSR system. The early action projects described below would be the same for both Shared Passenger Track Alternatives.

2.3.1 Grade Separations

The following five new railroad/roadway grade separations would be built as part of buildout of the project section and are identified as early action projects:

- Pioneer Boulevard
- Norwalk Boulevard and Los Nietos Road (considered a single early action project because of the adjacency of the two crossings)
- Cerritos Avenue
- State College Boulevard

The potential temporary construction and permanent operational environmental effects associated with these early action projects are analyzed in site-specific detail and included in the total evaluation of the project. Refer to Section 2.2.1.6 for more information.

2.3.2 Metrolink Station Relocations

Passenger rail currently operates within the Los Angeles – San Diego – San Luis Obispo Rail Corridor and would continue to do so with the introduction of HSR service. The relocations of the existing Commerce and Buena Park Metrolink Stations are necessary for implementation of either of the Shared Passenger Track Alternatives for reasons described in more detail in Section 2.2.1.5.

Existing transit service to the current Metrolink station locations would need to be modified to serve the relocated Metrolink station locations. Future coordination with Metrolink, Amtrak, and transit service providers would be necessary to determine bus routes and schedules for the

relocated Metrolink station locations and to inform final design of bus facilities at and near the station. Access roads, curb space, and passenger and operations facilities for buses have been included in the footprint in anticipation of this reconfigured service.

2.3.3 Fullerton Metrolink/Amtrak Modifications (Fullerton Interlocker)

The Shared Passenger Track Alternatives would modify the tracks and platforms throughout the Fullerton Metrolink/Amtrak Station, as well as the tracks east to Fullerton Junction, as described in Section 2.2.1.1. However, some of these proposed HSR modifications could be completed as an early action project to support the Metrolink Fullerton Interlocker Project, which is being planned by BNSF in coordination with Metrolink and the Authority. This project is critical to Metrolink's Southern California Optimized Rail Expansion Program and will allow for more frequent and regular service in Southern California. The Authority has incorporated the Fullerton Interlocker Project design as part of HSR's Fullerton/Metrolink Amtrak modifications, based on coordination with BNSF and Metrolink and on the anticipated timelines of the two projects.

If the Fullerton Interlocker Project occurs prior to HSR implementation, the early action project would consist of the same modifications described in Section 2.2.1.3 to the Fullerton Metrolink/Amtrak Station, with one exception. The fourth mainline track on the southern side of the corridor would only extend from east of Highland Avenue to Fullerton Junction because, in the absence of HSR, a fourth mainline track would not be added throughout the entire segment between LAUS and Fullerton Junction. All other modifications would be included: the removal of the southern side platforms, addition of a new center platform over Harbor Boulevard, new pedestrian underpass, and realignment and modifications to Walnut Avenue. If the HSR project is implemented later, the southern track would be extended west past Highland Avenue to connect to the fourth mainline track of the HSR alternatives.

2.3.4 Reconfiguration of Freight Rail Facilities

As discussed in Section 2.2.1.5, the project requires new or modified BNSF facilities to add and electrify tracks in the existing BNSF right-of-way between Los Angeles and Fullerton. The Hobart Yard modifications and Commerce Yard modifications (including the Commerce Flyover) could be implemented as early action projects to allow for improvements to existing Amtrak and Metrolink service in the Los Angeles – San Diego – San Luis Obispo Rail Corridor.

2.4 Optional High-Speed Rail Station

HSR trains would not stop at the Norwalk/Santa Fe Springs Metrolink Station or Fullerton Metrolink/Amtrak Station under either Shared Passenger Track Alternative A or Shared Passenger Track Alternative B. However, an option for a full-stop HSR station is considered, at either Norwalk/Santa Fe Springs or Fullerton. The inclusion of the HSR station option would require additional elements to support full-stop HSR service, in addition to the modifications described in Section 2.2.1.5. These HSR station elements are described in detail below.

2.4.1 High-Speed Rail Station Option: Norwalk/Santa Fe Springs

If the Norwalk/Santa Fe Springs Metrolink Station HSR Station Option is included, several additional elements would be included along with the station modifications described above for Shared Passenger Track Alternative A. An overview of the HSR station option elements is depicted on Figure 2-23, with the additional HSR station elements highlighted in green. The other elements depicted on Figure 2-23 would be completed as part of Shared Passenger Track Alternative A.

The Norwalk/Santa Fe Springs HSR Station Option would add two more electrified passenger rail tracks, for a total of four tracks through the station. The two tracks described under Section 2.2.1.1, Alignment, would serve the modified Metrolink side platforms; the two tracks added as part of the HSR station option would serve an HSR center platform in between the modified Metrolink side platforms. The HSR platform would be 1,000 feet long and capable of future extension to 1,410 feet.

The HSR station option would also require more parking to be added to serve HSR passengers. Parking and pick-up/drop-off for HSR and Norwalk/Santa Fe Springs Metrolink passengers would be combined within new surface parking lots. The HSR station option at Norwalk/Santa Fe Springs would provide 640 more parking spaces compared to what Shared Passenger Track Alternative A would otherwise provide, for a total of 1,248 parking spaces. A new access road would be provided from Imperial Highway, along the east side of the site, to the Shoemaker Avenue/Adler Drive intersection, with new signalized intersections.

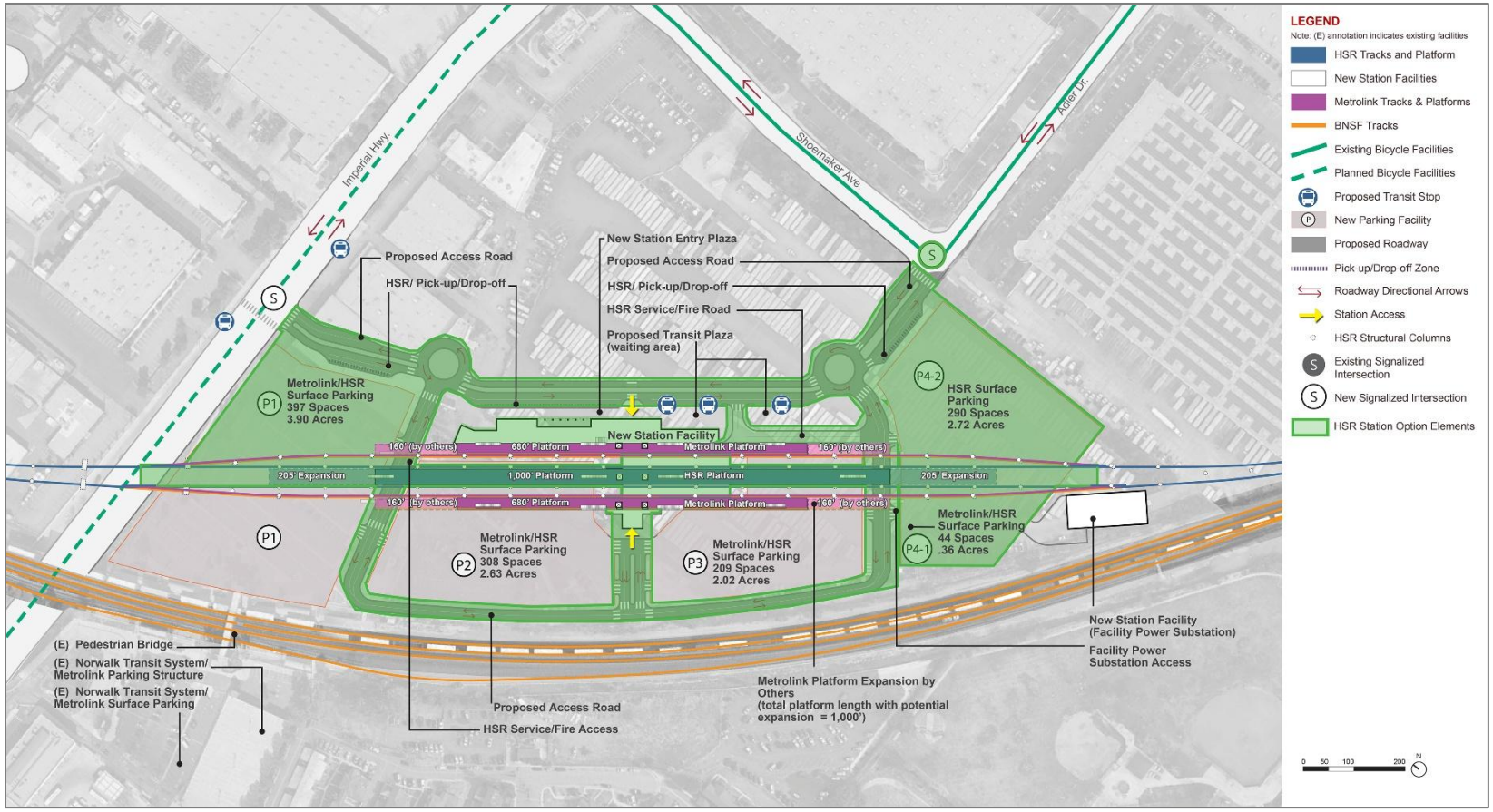
2.4.2 High-Speed Rail Station Option: Fullerton

If the Fullerton HSR Station Option is included, several additional elements would be included along with the station modifications described above for Shared Passenger Track Alternative A. An overview of the HSR station option elements is depicted on Figure 2-24, with the additional HSR station elements highlighted in green. The other elements depicted on Figure 2-24 would be completed as part of Shared Passenger Track Alternative A.

The overall track configuration would be the same as described in Section 2.2.1.1, but the southernmost shared track would be shifted south to accommodate a 1,000-foot HSR platform extending over Highland Avenue. The platform would be 48 inches above the rail on retained fill, at 10 feet at the highest point. A pedestrian ramp would connect the HSR platform to the Metrolink/Amtrak platform.

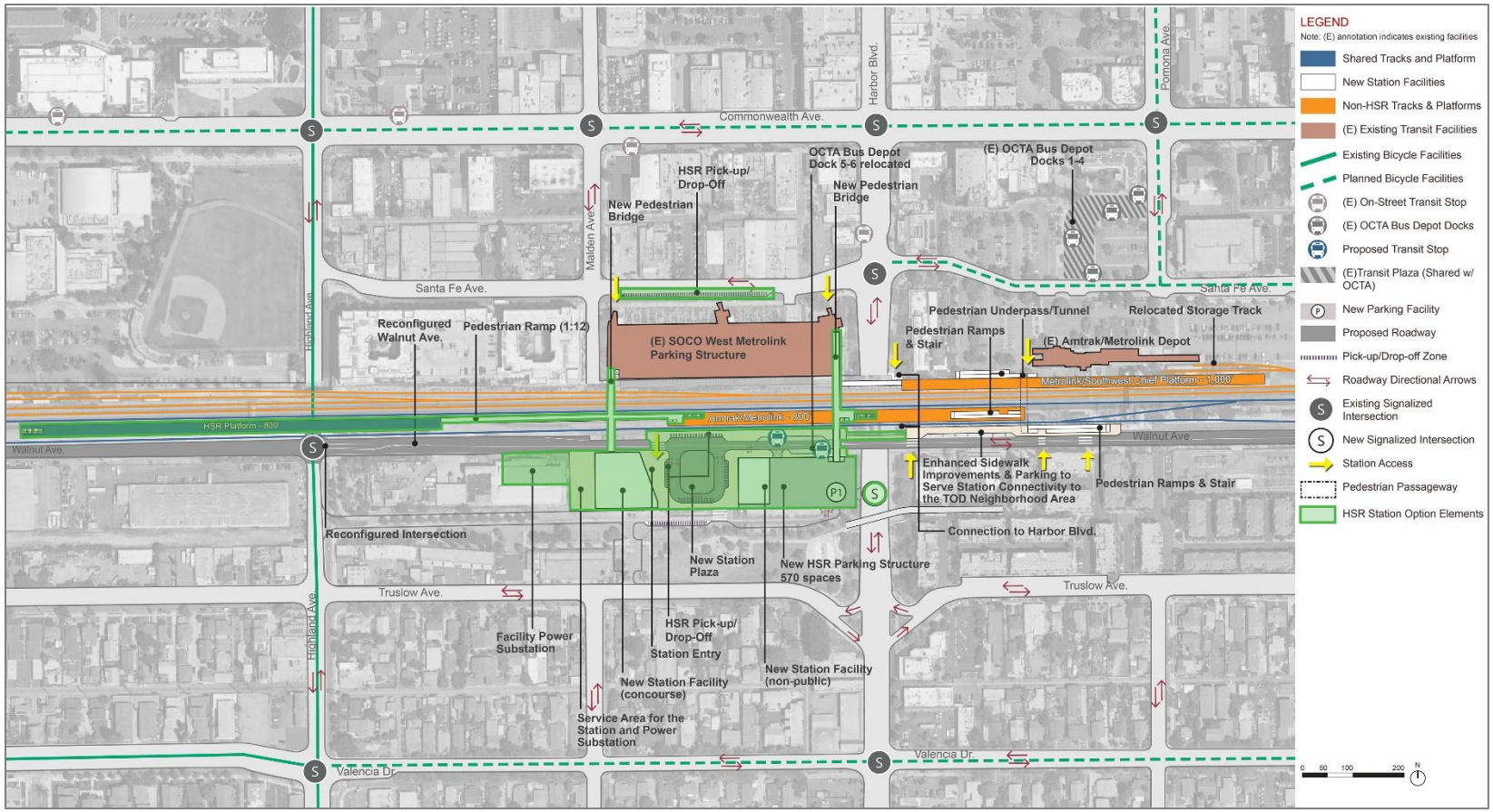
South of Walnut Avenue, the HSR station option would add HSR station buildings, a facility power substation, and a new multilevel parking structure that would provide a total of 570 new HSR parking spaces. The intersection of Highland Avenue and Walnut Avenue would be reconfigured to accommodate the new track and the Highland Avenue railroad bridge, along with improvements for transit stops and pedestrian crossings.

The HSR station option would add two pedestrian bridges: one west of Harbor Boulevard to connect the existing Metrolink parking structure to the HSR parking structure, and another east of Malden Avenue to connect the existing Metrolink parking structure to the HSR station building. A new signalized intersection on Harbor Boulevard would also be required to provide access to the HSR parking garage.



Source: Authority 2025a
Future platform extension not included in project definition for the environmental impact report/environmental impact statement.

Figure 2-23 Norwalk/Santa Fe Springs High-Speed Rail Station Option



Source: Authority 2025a

Figure 2-24 Fullerton High-Speed Rail Station Option

2.5 Project Construction

For the Los Angeles to Anaheim Project Section of the California HSR System, specific construction elements would include surface and elevated track; track work; grade-separated roadway crossings; and installation of a Positive Train Control system, as summarized in Table 2-7. Construction would take approximately 7.5 to 8 years.

Surface track sections would be built using conventional railroad construction techniques. A typical construction sequence includes clearing, grubbing, grading, and compacting the railbed; applying crushed rock ballast; laying track; and installing electrical and communications systems.

Elevated track sections would use the precast, segmented construction method. In this construction method, large concrete bridge segments are mass-produced at an on-site, temporary casting yard. Precast segments are then elevated atop the already completed portions of the elevated viaduct or embankment, and installed using a special gantry crane positioned on the aerial structure. Although the precast segmental method is the favored technique for aerial structure construction, other methods may be used, including cast-in-place, box girder, or precast, span-by-span techniques.

Preconstruction activities would occur during final design and would include geotechnical investigations, identification of staging areas, initiation of site preparation and demolition, relocation of utilities, and implementation of temporary, long-term, and permanent road closures. Additional studies and investigations to develop construction requirements and worksite traffic control plans would occur as needed.

Major construction activities for the project section would include earthwork and excavation support, systems construction, bridge and aerial structure construction, and railway systems construction (including trackwork, traction electrification, signaling, and communications).

During peak construction periods, work would be under way at several locations along the route simultaneously, with overlapping construction of various project elements. Working hours and the number of workers present at any time would vary depending on the activities being performed.

Table 2-7 Los Angeles to Anaheim Project Section Construction Schedule

Activity	Tasks	Schedule[8]
Right-of-way acquisition	Commencement of right-of-way acquisitions once State Legislature appropriates funds in annual budget, environmental due diligence	Prior to construction
Survey and preconstruction	Location of utilities, establishment of right-of-way and project control points and centerlines, establishment/relocation of survey monuments	Prior to construction
Mobilization	Safety devices and special construction equipment mobilization	Prior to construction
Site preparation	Utilities relocation; clearing/grubbing right-of-way; establishment of detours and haul routes; preparation of construction equipment yards, stockpile materials, and precast concrete segment casting yard	January 2031–January 2034
Earth moving	Excavation and earth support structures	April 2031–October 2036

[8] Schedule as of September 2023.

Activity	Tasks	Schedule[8]
Construction of road crossings	Surface street modifications, grade separations	July 2031–July 2037
Construction of aerial structures	Aerial structure and bridge foundations, substructure, and superstructure	July 2032–July 2036
Construction of underground structures	Straddle bent trench	October 2032–April 2036
Track laying	Includes backfilling operations and drainage facilities	July 2033–December 2037
Systems	Train control systems, OCS, communication system, signaling equipment	October 2035–October 2037
Demobilization	Includes site cleanup	At completion of construction
HSR stations and station relocations	Demolition, site preparation, foundations, structural frame, electrical and mechanical systems, finishes	Commerce Metrolink Station relocation: January 2031–January 2032
		Buena Park Metrolink Station Relocation: January 2034–March 2035
		Norwalk/Santa Fe Springs HSR/Metrolink Station: July 2033–July 2036[1]
		Fullerton HSR/Metrolink Station: January 2033–June 2035[1]
		Anaheim HSR platform and facilities: November October 2034–September 2037

Source: Authority 2024
[1] Construction schedule for Norwalk/Santa Fe Springs and Fullerton Station dependent on station selection.
OCS = overhead contact system; HSR = high-speed rail

2.6 Independent Utility of the Los Angeles to Anaheim Project Section

The Authority and FRA divided the HSR system they established with Tier 1 process into individual project sections for Tier 2 planning, environmental review, and decision making. The FRA, consistent with regulations issued by the Federal Highway Administration, considers three criteria when determining the scope of a project to be considered in an EIS: (1) whether it connects "logical termini" and has "sufficient length to address environmental matters on a broad scope"; (2) whether it has "independent utility or independent significance," meaning that it will "be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made"; and (3) whether it will "restrict consideration of alternatives for other reasonably foreseeable transportation improvements" (23 Code of Federal Regulations Part 771.111(f)). *Logical termini* is defined by the Federal Highway Administration as the rational starting and ending points for a transportation improvement project and for review of the environmental impacts of the project (FHWA 1993).[9] The project section connects logical termini

[9] The Federal Highway Administration criteria for determining project scope, as established in 23 Code of Federal Regulations Part 771.11(f), do not specifically address the scope of individual projects considered in the second tier of a tiered National Environmental Policy Act process. With the tiered National Environmental Policy Act process, the same general principles apply, but they are applied in the context of the decisions made in Tier 1—in this case, the decision to build the HSR system as a whole. Therefore, in determining the scope of individual project sections for Tier 2 studies, the Authority and FRA focused primarily on determining whether each project section could serve a useful transportation

at planned passenger stations where HSR service would be provided, at LAUS to the north and at ARTIC to the south. If other sections of the HSR system are not completed, the infrastructure could be used by regional and intercity services to improve their capacity, reliability, and performance (Authority 2009).

2.7 Operation of the Los Angeles to Anaheim Project Section

The conceptual HSR service plan for Phase 1 begins with service between Los Angeles/Anaheim running through the Central Valley from Bakersfield to Merced, and traveling northwest into the Bay Area. Subsequent sections in Phase 2 of the HSR system include a southern extension from Los Angeles to San Diego and an extension from Merced to Sacramento, which do not have an anticipated implementation date.

The Shared Passenger Track Alternatives would be within an active passenger and freight rail corridor, which would require a change in operational patterns and frequency for users. Because the project proposes new and realigned tracks throughout the corridor shared by other passenger rail and freight operators, implementation would change the tracks on which the various users operate. Currently, the Metrolink Orange County line and 91 line, Amtrak Pacific Surfliner, BNSF, and UPRR freight trains operate within the project section. The introduction of HSR service between Los Angeles and Anaheim would not conflict with the California State Rail Plan (Caltrans 2023).

Under the Shared Passenger Track Alternatives, there would be up to two HSR passenger trains per hour (peak) in each direction. Up to 10 freight trains per day could operate on the passenger tracks. The Shared Passenger Track Alternatives would maintain current and projected freight train volume within the corridor.

purpose on its own, and ensuring that a decision in one project section does not limit consideration of reasonable alternatives for completing the HSR system in an adjacent section for which the National Environmental Policy Act process has not yet been completed.

3 LAWS, REGULATIONS, AND ORDERS

This section describes the federal, state, and local laws, regulations, orders, and plans that are relevant to hazardous materials and wastes. In California, hazardous materials and wastes are subject to federal and state requirements by statute and regulation. Federal and state requirements for hazardous waste overlap considerably, but California requirements are typically more stringent. Below is a summary of the applicable federal and state hazardous waste laws and regulations. For activities involving handling hazardous materials and hazardous waste, applicable occupational safety and health requirements must be followed.

3.1 Federal

There are numerous federal laws and regulations relate to the identification, generation, transport, storage, handling, treatment, and disposal of hazardous materials and wastes. Hazardous materials used, stored, and managed and hazardous wastes generated, stored, and disposed of during project construction and operation may be subject to one or more of the following laws and implementing regulations. The following list of laws and regulations is considered in this evaluation as likely to be applicable to the project.

3.1.1 National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.)

NEPA requires the consideration of potential environmental effects in the evaluation of a proposed federal agency action. NEPA also obligates federal agencies to consider the environmental consequences of their projects and programs as part of the planning process.

3.1.2 Federal Railroad Administration, Procedures for Considering Environmental Impacts (64 *Federal Register* 28545)

On May 26, 1999, the FRA released Procedures for Considering Environmental Impacts (FRA 1999). These FRA procedures describe the FRA's process for assessing the environmental impacts of actions and legislation proposed by the agency and for the preparation of associated documents (42 U.S.C. 4321 et seq.). The FRA Procedures for Considering Environmental Impacts states that "the EIS should identify any significant changes likely to occur in the natural environment and in the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by U.S. Department of Transportation Order 5610.4." These FRA procedures state that an EIS should consider possible impacts on public safety, including impacts caused by hazardous materials.

3.1.3 Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.)

RCRA regulates the identification, generation, transport, storage, treatment, and disposal of solid and hazardous wastes and cleanup of sites contaminated with hazardous wastes. This law's regulations are contained in 40 CFR Parts 239–282.

3.1.4 Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.)

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulates former and newly discovered uncontrolled waste disposal and spill sites. This act established the National Priorities List of contaminated sites, and the "Superfund" cleanup program. This law's regulations are contained in 40 CFR Parts 300–374.[10]

[10] While this technical report was being prepared, perfluorooctanoic acid (i.e., PFOA), perfluorooctanesulfonic acid (i.e., PFOS), and their salt and structural isomers were designated as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (effective July 8, 2024). This addition is in the revised Table 302.4 in 40 CFR Part 302 and these substances have a statutory reportable quantity of 1 pound within a 24-hour period.

3.1.5 Clean Air Act (42 U.S.C. 7401 et seq.)

The Clean Air Act is a law that regulates air emission sources for the purposes of improving air quality and protecting the ozone layer (40 CFR Parts 50–99).

This law regulates numerous sources of air emissions, including construction equipment, operation of stationary and mobile sources, and asbestos. Stationary sources include emergency generators, boilers, fume exhaust hoods, and other industrial equipment, which may be subject to control technologies as detailed in facility-specific operating permits. Mobile sources of emissions include cars, trucks, aircraft, marine vessels, and off-road engines and vehicles (e.g., forklifts, excavators) and most requirements for mobile sources must be met by equipment manufacturers and fuel refineries. Asbestos is identified as a hazardous pollutant under the air toxics provisions of the Clean Air Act (40 CFR Part 61, Subpart M). These regulations specify work practices and disposal methods for asbestos during demolitions and renovations of all facilities including, but not limited to, structures, installations, and buildings (excluding residential buildings with four or fewer dwelling units). The regulations require a thorough inspection where the demolition or renovation operation will occur.

3.1.6 Clean Water Act – National Pollutant Discharge Elimination System (33 U.S.C. 1342(p))

The Clean Water Act regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater. This law's regulations are contained in 40 CFR Parts 110, 112, 116, 117, and 122 to 131.

3.1.7 Safe Drinking Water Act (42 U.S.C. 300(f) et seq.)

The Safe Drinking Water Act regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality. This law's regulations are contained in 40 CFR Parts 141–147.

3.1.8 Toxic Substances Control Act (15 U.S.C. 2601 et seq.)

The Toxic Substances Control Act regulates manufacturing, inventory, and disposition of industrial chemicals including hazardous materials as well as cleanup and disposal of media contaminated with polychlorinated biphenyls (PCB). This law's regulations are contained in 40 CFR Parts 700–799.

3.1.9 Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136)

The Federal Insecticide, Fungicide and Rodenticide Act regulates the manufacturing, distribution, sale, and use of pesticides. This law's regulations are contained in 40 CFR Parts 150–180.

3.1.10 Hazardous Materials Transportation Act (49 U.S.C. 5101 et seq.)

The Hazardous Materials Transportation Act regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft. It establishes procedures and policies on the proper handling of hazardous materials, requires material designations and labeling during transport, establishes packaging requirements, and establishes operational rules that govern the transportation process from pick-up to delivery. This law's regulations are contained in 49 CFR Parts 105–107, 109–110, and 171–180.

The rulemaking listed five broad categories of entities potentially affected by this designation, including manufacturers, processors, downstream users, products, waste management facilities, and wastewater treatment facilities. All citations to Comprehensive Environmental Response, Compensation, and Liability Act regulations in this environmental document refer to the pre-2024 version of 40 CFR Part 302.

3.1.11 Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101-615)

The Hazardous Materials Transportation Uniform Safety Act regulates the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials. This law's regulations are contained in 49 CFR Parts 100–185.

3.1.12 Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11001 et seq.)

The Emergency Planning and Community Right-to-Know Act regulates facilities that use hazardous materials in quantities that require reporting to emergency response officials. This law's regulations are contained in 40 CFR Parts 355–372.

3.1.13 Federal Compliance with Pollution Control (Executive Order 12088)

This order requires federal agencies to take necessary actions to prevent, control, and abate environmental pollution from facilities and activities under the control of federal agencies.

3.2 State

There are numerous state laws and regulations relating to the identification, generation, transport, storage, handling, treatment, and disposal of hazardous materials and wastes. The following list of laws and regulations is considered in this evaluation as likely to be applicable to the project.

3.2.1 California Environmental Quality Act (CEQA) (Section 21000 et seq.) and State CEQA Guidelines (Section 15000 et seq.)

CEQA requires state and local agencies to identify the significant environmental effects of their actions and to avoid or mitigate those effects, when feasible.

3.2.2 Well Safety Devices for Critical Wells (California Code of Regulations, Title 14, Section 1724.3)

This regulation includes California waste identification and classification requirements. California Code of Regulations, Title 22, Chapter 11, Article 3, "Soluble Threshold Limits Concentrations/ Total Threshold Limits Concentration Regulatory Limits," identifies the concentrations at which soil is determined to be a California hazardous waste.

3.2.3 Gas Monitoring and Control at Active and Closed Disposal Sites (California Code of Regulations, Title 27, Section 20917 et seq.)

The regulations within Article 6 set forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to active solid waste disposal sites and to proper closure, post-closure maintenance, and ultimate reuse of solid waste disposal sites to ensure that public health and safety and the environment are protected from pollution associated with the disposal of solid waste.

3.2.4 Well Safety Devices for Critical Wells (California Code of Regulations, Title 14, Section 1724.3)

This regulation governs safety devices required on "critical wells" within 100 feet of an operating railway.

3.2.5 Closure and Post Closure Maintenance of Landfills (California Code of Regulations, Title 27, Division 2, Chapter 3, Subchapter 5)

This regulation provides post-closure maintenance guidelines, including requirements for an emergency response plan and site security. Regulates post-closure land use, requiring protection

of public health and safety and the built environment, as well as the prevention of gas explosions. Construction on the site must maintain the integrity of the final cover, drainage and erosion-control systems, and gas monitoring and control systems. Post-closure land use within 1,000 feet of a landfill site must be approved by the local enforcement agency.

3.2.6 Construction Safety Orders (California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 4)

The California Division of Occupational Safety and Health, better known as Cal-OSHA, protects and improves the health and safety of working men and women in California and the safety of passengers riding on elevators, amusement rides, and tramways through the following activities: setting and enforcing standards; providing outreach, education, and assistance; and issuing permits, license, certifications, registrations, and approvals. California Health and Safety Code Section 39658(b)(1) establishes the Asbestos National Emissions Standards for Hazardous Air Pollutants as an airborne toxic control measure (California Health and Safety Code 1975). The Asbestos National Emissions Standards for Hazardous Air Pollutants protect the public and environment by minimizing the release of asbestos fibers during renovation and demolition activities.

3.2.7 California Assembly Bill 148 of 2021 (California Public Resources Code Section 21151.4)

This code requires the lead state agency for the environmental review process to consult with any school district with jurisdiction over a school within 0.25 mile of a proposed project. The consultation should address impacts on the school if the project might reasonably be anticipated to emit hazardous air pollutants or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

3.2.8 Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.) regulates water quality through the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB), including oversight of water monitoring and contamination cleanup and abatement.

3.2.9 Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code Section 25500 et seq.)

This section of the California Health and Safety Code requires facilities using hazardous materials to prepare Hazardous Materials Business Plans.

3.2.10 Hazardous Substance Account Act (California Health and Safety Code Section 25300 et seq.)

The Hazardous Substance Account Act is California's equivalent to CERCLA. It addresses hazardous waste sites and apportions liability for them. This law also provides that owners are responsible for the cleanup of such sites and the removal of toxic substances, where possible.

3.2.11 Hazardous Waste Control Law (California Health and Safety Code Section 25100 et seq.)

The Hazardous Waste Control Law, similar to the federal RCRA, regulates the identification, generation, transport, storage, and disposal of materials deemed hazardous by the State of California.

3.2.12 Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code, Section 25249.5 et seq.)

The Safe Drinking Water and Toxic Enforcement Act, similar to the Safe Drinking Water Act and Clean Water Act on the federal level, regulates the discharge of contaminants to groundwater.

3.2.13 Hazardous Waste and Substances Sites (Cortese) List (California Government Code Section 65962.5)

This section requires the Department of Toxic Substances Control (DTSC) to compile and maintain lists of potentially contaminated sites throughout the state (including the Hazardous Waste and Substances Sites List). This list is commonly referred to as the Cortese List, after the legislator who authored the original legislation.

3.2.14 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health And Safety Code, Division 20. Chapter 6.11. Section 25404 et seq.)

Senate Bill 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program (California Environmental Protection Agency 2012) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The California Environmental Protection Agency and other state agencies set the standards for their programs, while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies (CUPA) to regulate facilities within their jurisdiction that treat or generate hazardous waste, operate underground storage tanks, or store hazardous materials. For each county, the CUPA regulates/oversees the following:

- Hazardous materials business plans
- California accidental release prevention plans or federal risk management plans
- The operation of underground storage tanks and aboveground storage tanks
- Universal waste and hazardous waste generators/handlers
- On-site hazardous waste treatment
- Inspections, permitting, and enforcement
- Proposition 65 reporting
- Emergency response

The CUPAs, and CUPA Participating Agencies (PA), within Los Angeles County that would have jurisdiction over environmental matters associated with the Shared Passenger Track Alternatives consist of the following:

- Los Angeles County Fire Department – Health Hazardous Materials Division (HHMD), which is the lead CUPA for the county
- Los Angeles County Department of Public Works
- City of Los Angeles Fire Department
- City of Santa Fe Springs Fire Department
- City of Vernon Health Department

The CUPAs and CUPA PAs within Orange County that would have jurisdiction over environmental matters associated with the Shared Passenger Track Alternatives consist of the following:

- Orange County Health Care Agency – Environmental Health Division, which is the lead CUPA for the county
- City of Anaheim Fire Department
- City of Fullerton Fire Department

A business that handles a hazardous material or hazardous waste of quantities at any one time during a year equal to or greater than a total volume of 55 gallons, a total weight of 500 pounds, or a total volume of 200 cubic feet of compressed gas is a hazardous materials handler and must report Owner/Operator, Business Activities, Inventory, Site Map, and Emergency Response and Contingency Plan and Employee Training Plan information in the California Environmental Reporting System. Beyond the statewide regulations, CUPAs administer policies and regulations found in several local and regional plans (including general plans and municipal codes) that

address hazardous materials and wastes. These policies and regulations are intended as guides for the appropriate use of potentially hazardous materials, the cleanup of contaminated sites, and the preparation of emergency response plans.

3.3 Regional and Local

This section discusses relevant regional and local programs, policies, regulations, and permitting requirements. The project section would primarily be within Los Angeles and Orange Counties and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Anaheim and unincorporated Los Angeles County area of West Whittier. Local codes, plans, and policies that were identified and considered for analysis are listed in Table 3-1.

Table 3-1 Regional and Local Codes, Plans, and Policies

Policy Title	Summary
Los Angeles County	
Los Angeles County 2035 General Plan, Public Services and Facilities Element, Safety Element (2025)	The Public Services and Facilities Element contains the following policies: ▪ Policy PS/F 5.1: Maintain an efficient, safe and responsive waste management system that reduces waste while protecting the health and safety of the public. ▪ Policy PS/F 5.2: Ensure adequate disposal capacity by providing for environmentally sound and technically feasible development of solid waste management facilities, such as landfills and transfer/processing facilities. The Safety Element contains the following policies: ▪ Policy S 6.1: Assess public health and safety risks associated with existing oil and gas facilities in the unincorporated Los Angeles County. ▪ Policy S 7.8: Adopt by reference the County of Los Angeles All-Hazards Mitigation Plan, as amended.
Los Angeles County Operational Area Emergency Operations Plan (2023)	The Operational Area Emergency Operations Plan addresses the coordinated response to emergency situations associated with natural, human-made, and technological incidents in the operational area. The intent of the plan is to define responsibilities and to provide guidance to agencies/jurisdictions within the operational area on how to interface with the operational area coordinator during emergencies and disasters.
Los Angeles County All-Hazard Mitigation Plan (2020)	The All-Hazard Mitigation Plan sets strategies for coping with natural and human-made hazards faced by residents in the county including earthquake, flood, wildlife, and tsunami hazards as well as other nonsignificant hazards.
City of Los Angeles	
City of Los Angeles Municipal Code (2025)	▪ Section 57.105.6.17: Requires an operational permit to store, process, or use specific types of hazardous materials above ground. ▪ Section 57.105.7.1.1: Requires a Specific Action or Project Permit to erect, install or relocate any appliance, device, or system when such equipment is to be used in connection with hazardous materials, hazardous waste, or hazardous plastics. This applies to asbestos abatement.
City of Los Angeles General Plan, Safety Element (2024)	▪ Goal 1: A city where potential injury, loss of life, property damage and disruption of the social and economic life of the City due to hazards is minimized. – Policy 1.1.4: Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect City water supplies and resources from contamination resulting from release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation.

Policy Title	Summary
City of Vernon	
The Code of the City of Vernon (2024)	Section 13.59: Establishes the responsibility for proper storage, handling, treatment, and disposal of hazardous materials.
City of Vernon General Plan, Safety Element (2023)	▪ GOAL S-1: Minimize the risk to public health, safety, and welfare associated with the presence of natural and human-caused hazards. ▪ GOAL S-2: Provide a high degree of protection for all residents and workers from hazardous materials and the hazards associated with transport of such materials. ▪ Policy S-3.2: Require businesses handling, transporting, or producing materials considered acutely hazardous to prepare contingency plans for accidents involving these chemicals. ▪ Action S-8: Hazardous Waste. Continue to implement activities so that hazardous wastes generated by Vernon businesses are handled and disposed according to federal, state, and local regulations. Assist businesses and consultants in the preparation and oversight of site assessments and mitigation activities. To minimize present and future threats to human health and the environment, the program actively promotes waste reduction options for hazardous waste generators.
City of Vernon 2023 Local Hazard Mitigation Plan (2023)	The plan provides a set of action items to reduce risk from natural hazards through education and outreach programs and to foster the development of partnerships, and implementation of preventive activities such as land use programs that restrict and control development in areas subject to damage from natural hazards.
City of Commerce	
Commerce Municipal Code (2024)	Section 19.19.120: Sets forth the regulations and monitoring requirements for the use, storage, manufacture, and disposal of hazardous materials.
City of Commerce 2020 General Plan, Community Development Element, Health and Safety Element[1] (2008)	▪ Community Development Policy 1.8. The city of Commerce, in conjunction with the South Coast Air Quality Management District, the Environmental Protection Agency, the Los Angeles County Fire Department, and other public agencies, will work to reduce potential hazards and health risks associated with the use, storage, or manufacture of hazardous materials. ▪ Safety Policy 4.4. The city of Commerce will work with Federal, State, and County agencies, as well as the Industrial Council, to protect all city residents and workers from hazardous materials and the risks associated with the transportation of these materials. ▪ Safety Policy 4.7. The city of Commerce will establish an environmental review procedure that will assess the impact of new potentially hazardous industrial uses on adjacent residential neighborhoods. ▪ Safety Policy 4.9. The city of Commerce will encourage the proper disposal of hazardous waste materials produced, used, and stored within the city's limits.
City of Bell	
City of Bell Municipal Code (2024)	Section 13.08.110 (4,6, and 9): Regulates the discharge of hazardous materials into the municipal storm drain system.

Policy Title	Summary
City of Bell 2030 General Plan, Health and Safety Element (2022)	▪ Health and Safety Element Policy 9: The City of Bell shall identify areas of high risk (high densities, older structures, fire hazards) so that disaster response may be prioritized. The City will also focus on potential sources of contamination, including lead and asbestos containing materials found in older buildings. These areas of risk must be identified in the City's Emergency Preparedness Plan. ▪ Health and Safety Policy 11: The City of Bell shall establish and enforce standards that are designed to reduce the level of risk. The City shall work with the Los Angeles County Fire Department and other public agencies to discuss both risk and emergency preparation. Finally, the City shall work with the Fire Department and the larger community to review, and if necessary, develop new standards.
City of Montebello	
Montebello Municipal Code (2024)	Sections 15.32.310 and 17.08.580: Regulate leaks and spills of combustible liquids and proper disposal of demolition debris
City of Montebello General Plan, Our Safe Community (2024)	▪ Policy 6.6: Minimize damage and maximize resilience from emergencies. – Action A6.6a: Consult and collaborate with federal, state, and regional agencies to identify and regulate the disposal and storage of hazardous materials and prevent the illegal transportation and disposal of hazardous waste. – Action A6.6b: Collaborate with appropriate agencies to identify and inventory all users and handlers of hazardous materials to proactively mitigate potential impacts. – Action A6.6c: Determine the presence of hazardous materials and/or waste contamination prior to approval of new uses and require that appropriate measures be taken to protect the health and safety of site users and the community. – Action A6.6e: Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses.
City of Montebello Hazard Mitigation Plan (2017)	The plan provides a framework including identification of hazards, potential losses, mitigation needs, goals, and strategies for planning for natural hazards in the city.
City of Pico Rivera	
Pico Rivera Municipal Code (2025)	Section 10.60.030: Regulates the transport of hazardous materials

Policy Title	Summary
City of Pico Rivera General Plan, Community Facilities Element, Safety Element (2014)	The Community Facilities Element includes the following goal: ▪ Goal 6.7: Reduced solid waste generation and disposal, and increased recycling opportunities. The Safety Element includes the following goals and policies: ▪ Goal 9.3: Safe production, use, storage, and transports of hazardous materials. – Policy 9.3-1 Hazardous Materials Regulation. Coordinate with County, State and other applicable agencies to enforce pertinent laws, disclosures and siting requirements that regulate the production, use, storage, disposal, and transport of hazardous materials. – Policy 9.3-2 Hazardous Materials Uses. Ensure that land uses involved in the production, storage, transportation, handling, or disposal of hazardous materials are located and operated in a manner that minimizes risk to other land uses. – Policy 9.3-4 Site identification. Participate in efforts to identify sites previously used for hazardous materials handling, storage and disposal. – Policy 9.3-5 Known Areas of Contamination. Require new development in areas of known contamination to perform comprehensive soil and groundwater contamination assessments prior to development approvals. If contamination exceeds regulatory levels, require remediation procedures consistent with applicable regulations for the proposed use prior to any site disturbance. – Policy 9.3-6 Best Practices. Encourage industries, businesses and residents to utilize best practices and technologies that reduce the use of hazardous materials and generation of hazardous wastes.
City of Pico Rivera Hazard Mitigation Plan (2025)	The plan describes the process for reducing risk from hazards in the city by identifying resources, information, and strategies for risk reduction, and guides coordination of mitigation activities throughout the city.
City of Santa Fe Springs	
Code of Santa Fe Springs (2025)	Section 52.15 (4,10): Regulates nonstormwater discharges to the storm drain system
Re-Imagine Santa Fe Springs 2040 General Plan, Safety Element (2022)	▪ Goal S-3: Minimize exposure of residents, businesses, and habitats to hazardous materials and their deleterious effects. – Policy S-3.2: Hazardous Materials Locations. Monitor and evaluate commercial and industrial uses that generate, store, and transport hazardous materials to determine the need for buffer zones or setbacks to minimize risks to residential neighborhoods, schools, parks, and community facilities. – Policy S-3.5: Contamination Protection. Protect natural resources— including groundwater—from hazardous waste and materials contamination. – Policy S-3.7: Contamination Remediation. Consult with the U.S. Environmental Protection Agency and responsible State agencies on the ongoing remediation and cleanup of contaminated properties and groundwater, with aim to recondition sites for productive land uses. – Policy S-3.10: Proper Hazardous Materials Management. Promote the proper collection, handling, recycling, reuse, treatment, and long-term disposal of hazardous waste from households, businesses, and government operations. – Policy S-7.7: Fire Prevention Services. Provide effective fire prevention services through the review of proposed development projects, evaluation of industrial operations and facilities, examination of the transport of hazardous materials, and identification of oil and gas pipeline networks.

Policy Title	Summary
City of Santa Fe Springs Natural Hazards Mitigation Plan (2004)	The plan describes the potential effects of earthquakes and floods and includes an assessment of these natural hazards, a plan to mitigate them, and methods of monitoring, evaluating, and updating the plan.
City of Norwalk	
Norwalk Municipal Code (2024)	Sections 17.02.120 and 18.04.170 (4,10): Requires that land use decisions be consistent with the County of Los Angeles hazardous waste program, and regulates nonstormwater discharges to the storm drain system
Vision Norwalk – The City of Norwalk General Plan, Safety Element[1] (2023)	Safety Element Objective, Safety from Natural and Man-Made Hazards Objective: To avoid unnecessary exposure to hazards and continue operation of critical facilities after an emergency
City of La Mirada	
La Mirada Code of Ordinances (2024)	Sections 13.12.070 (4,10) and 21.70.030 (b, c): Regulates nonstormwater discharges to the storm drain system, and accidental or intentional release or use of hazardous materials.
City of La Mirada General Plan, Safety and Community Services Element, Open Space and Conservation Element (2003)	▪ Policy 3.1 Cooperate with federal, State, and County agencies to reduce risks associated with the use and transport of hazardous materials ▪ Policy 3.2 Continue to inventory and identify the source of all hazardous materials stored, used, or transported in the City. ▪ Policy 4.3 Encourage and support the proper disposal of household hazardous waste and hazardous wastes from businesses in La Mirada.
City of La Mirada Natural Hazards Mitigation Plan (2004)	Includes resources and information for planning for natural hazards; mitigation for reducing risk and preventing loss; and action items for multi-hazard issues including earthquakes, flooding, landslides, and wildfires to guide the city toward building a disaster resistant community.
Orange County	
Codified Ordinances of the County of Orange (2024)	Section 3-13-4 (9): Regulates the disposal of hazardous materials

Policy Title	Summary
County of Orange General Plan, Safety Element (2025)	▪ Hazardous Materials Policy 1: To provide consultation, assistance, and education to the public, industries, and other agencies regarding the applicable laws and regulations of hazardous materials (including underground storage tanks), hazardous waste, medical waste, and nuclear materials. ▪ Hazardous Materials Policy 2: To respond to all emergency incidents to oversee and ensure that these incidents involving hazardous waste, and medical waste are properly mitigated. ▪ Hazardous Materials Policy 6: To implement and administer all mandated laws, regulations, and ordinances relating to hazardous materials, hazardous waste, and medical waste. ▪ Hazardous Materials Policy 8: To provide training to designated personnel to keep them up-to-date, regarding new equipment and technology, on the reduction of risks of hazardous materials (including those stored in underground storage tanks) hazardous waste, and medical waste. ▪ Public Safety Goal 2: Minimize the effects of public safety hazards through implementation of appropriate regulations and standards which maximize protection of life and property.
Orange County Local Hazard Mitigation Plan (2021)	Includes resources and information to assist interested parties in planning for natural hazards. The plan provides a list of activities aimed at reducing risk and preventing loss, and mitigation action items covering multi-hazard issues and specific activities for flood/storm, wildland fire, earthquakes, dam failure, epidemic, urban fire, vector control, mud/landslide, tornado, and tsunami to guide the county toward building a safer more sustainable community.
City of Buena Park	
Buena Park Municipal Code (2025)	Section 8.32.070: Outlines the requirements for handling of hazardous materials
City of Buena Park 2035 General Plan (2022), Safety Element	▪ Goal SAF-4: Minimized threat to the public health and safety and to the environment posed by a release of hazardous materials. – Policy SAF-4.1: Strictly enforce Federal, State, and local laws and regulations relating to the use, storage, and transportation of toxic, explosive, and other hazardous and extremely hazardous materials to prevent unauthorized discharges.
City of Buena Park Hazard Mitigation Plan (2022)	Documents the city's mitigation planning process and identifies hazards, potential losses, mitigation needs, goals and strategies to reduce risk from hazards.
City of Fullerton	
Fullerton Municipal Code (2025)	Section 5.25: Outlines the city's process for hazardous materials cleanup
The Fullerton Plan, Integrated Waste Management Chapter (2025)	▪ P23.1.1 Regional Hazardous Waste Control. Support regional and subregional efforts to control and limit the amount of hazardous waste that is released into regional air basins and watersheds as well as limiting the transport of hazardous materials along certain corridors only. ▪ P23.2 Hazardous Waste Support projects, programs, policies and regulations to promote safe handling and disposal by households, businesses and City operations of solid waste which has specific disposal requirements. ▪ P23.3 Waste Reduction and Diversion Support projects, programs, policies and regulations to promote practices to reduce the amount of waste disposed in landfills.

Policy Title	Summary
Fullerton Local Hazard Mitigation Plan (2020)	The purpose of the plan is to reduce or eliminate long-term risk to people and property from hazards.
City of Anaheim	
Anaheim Municipal Code (2025)	Sections 6.11.080.030 and 6.11.100 (0.10, .0101, .0102, .0103, .070): Regulates the storing, handling, transporting, or release of hazardous materials
City of Anaheim General Plan, Safety Element (2025)	▪ Goal 4.1: A community better protected from the release and exposure to hazard materials and wastes. ▪ Goal 7.1: A city that can effectively respond and evacuate during hazard events. – Policy 3: Encourage businesses to utilize practices and technologies that will reduce the generation of hazardous wastes at the source. – Policy 4: Implement Federal, State and local regulations for the disposal, handling, and storage of hazardous materials. – Policy 5: Promote the recovery and recycling of hazardous materials.
Anaheim Local Hazard Mitigation Plan (2022)	Documents the city's mitigation planning process and identifies hazards, potential losses, mitigation needs, goals and strategies to reduce risk from hazards.

Sources: City of Anaheim 2022, 2025a, 2025b; City of Bell 2022, 2024; City of Buena Park 2022a, 2022b, 2025; City of Commerce 2008, 2024; City of Fullerton 2020, 2025a, 2025b; City of La Mirada 2003, 2004, 2024; City of Los Angeles 2024, 2025; City of Montebello 2017, 2024a, 2024b; City of Norwalk 2023, 2024; City of Pico Rivera 2014, 2025a, 2025b; City of Santa Fe Springs 2004, 2022, 2025; City of Vernon 2023a, 2023b, 2024; County of Los Angeles 2020, 2023, 2025; County of Orange 2024, 2025; County of Orange and Orange County Fire Authority 2021
[1] This plan is currently undergoing an update as of January 2025.

3.3.1 Regulatory Programs and Agencies

There are regional and local agencies that establish and implement regulatory programs to regulate, coordinate, and enforce the handling of hazardous waste and materials and spill response. They are described below.

3.3.1.1 County Offices of Emergency Services

The California Office of Emergency Services maintains the California Hazardous Materials Incident Report System, which contains information on reported hazardous material accidental releases or spills. This information can be used to assess whether affected media could be encountered as part of construction activities.

The Los Angeles County Office of Emergency Management is responsible for organizing and directing the preparedness efforts of the county Emergency Management Organization. The Office of Emergency Management is the day-to-day coordinator for the entire organization, whose responsibilities include planning and coordination, operations, training, and public education. Requirements of the Office of Emergency Management are considered when analyzing potential effects on emergency response.

The Orange County Emergency Operations Center is the communication and coordination center that provides a central point for coordinating the county's operational, administrative, and support needs. It also assists in coordination and communication with the state Office of Emergency Services during county- and statewide emergency response and recovery operations. Requirements of the Emergency Operations Center are considered when analyzing potential effects on emergency response.

3.3.1.2 County Emergency Response Team

The Los Angeles County Emergency Preparedness and Response Unit ensures that the Division of Environmental Health can protect the public from health hazards that occur after emergencies or disasters. The agency develops plans and establishes procedures to coordinate responses

with partner agencies. The agency provides training and conducts exercises to create a workforce that can manage the health effects of an emergency.

The role of the Orange County Environmental Health Hazardous Materials Team is to provide specialized emergency response to protect public health, the property of Orange County residents, and the environment. The Health Hazardous Materials Team responds to incidents county-wide involving a release or potential threat of hazardous materials and wastes that pose a physical, chemical, biological, or radiological hazard to the community. The Health Hazardous Materials Team provides emergency response support staffing 24 hours per day.

The primary duties of the Health Hazardous Materials Team are to provide regulatory guidance and technical expertise, to mitigate and oversee the removal of hazardous substances, and to investigate hazardous materials incidents. The Health Hazardous Materials Team responds to the following:

- Hazardous materials spills
- Clandestine drug lab operations
- Terrorism incidents
- Hazardous materials complaints

3.3.1.3 City Fire Department Hazardous Materials Response Team

As noted in Section 3.2.14, Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (California Health And Safety Code, Division 20. Chapter 6.11. Section 25404 et seq.), certain city fire departments within Los Angeles County have their own hazardous materials divisions and are, therefore, not necessarily under the jurisdiction of the HHMD with respect to hazardous materials issues. The cities of Los Angeles, Vernon, and Santa Fe Springs are those through which the Shared Passenger Track Alternatives would pass.

Certain city fire departments within Orange County also have their own hazardous materials divisions and are, therefore, not necessarily under the jurisdiction of the Orange County Health Hazardous Materials Team with respect to hazardous materials issues. These cities are Anaheim and Fullerton.

3.3.1.4 County Public Health Agencies

Los Angeles County Public Health Investigations is an enforcement agency operating as part of the County of Los Angeles's Department of Public Health. The agency's goal is to provide a healthy and sustainable environment for county residents. The agency assesses environmental conditions to reduce health risk exposures and educates the public on environmental risk sources. The Public Health Investigations agency serves the following:

- Los Angeles County residents and visitors
- Food industry
- Housing and institutions operators
- Water, sewage, and solid waste industries
- Other public and private industries

The Orange County Health Care Agency's Public Health Services Department promotes optimal health for Orange County residents and employees through assessment and planning, education, policy development, and regulatory activities. The Public Health Services Department includes Environmental Health, which protects the public from harmful environmental conditions by enforcing laws and regulations. The agency also provides community education and awareness related to food, safety, water quality, and hazardous materials issues. The aforementioned agencies are considered when analyzing the remediation status of affected sites.

3.3.1.5 County Enforcement Agencies for Solid Waste Disposal

The Los Angeles County Department of Public Works is the designated agency involved in solid waste disposal for Los Angeles County. The Orange County Board of Supervisors and the California Department of Resources Recycling and Recovery designated the Environmental

Health Division as the Local Enforcement Agency for Orange County. Hazardous material disposal is considered when analyzing the handling of hazardous materials.

4 METHODS FOR EVALUATING EFFECTS

The following sections summarize the resource study areas (RSA) and methods used to analyze impacts from hazardous materials.

4.1 Definition of the Resource Study Area

The potential area of disturbance associated with construction of the project includes the proposed project alignment and associated facilities, as well as the roadway changes necessary to accommodate them.

The environmental database review RSA extends up to 1 mile from the project footprint, consistent with ASTM International–specified minimum search distances for limited environmental due diligence (as noted in standard ASTM International Standards 1527-13 and 1528-14). Based on this review, potential environmental concern (PEC sites within the project footprint and 150-foot buffer (i.e., the PEC site RSA) were identified and evaluated to account for potential impacts from hazardous material issues on adjacent properties. For assessing impacts related to landfills, oil and gas wells, and schools, an RSA of the project footprint plus a 0.25-mile buffer is used. All RSAs, with the specific distances for each RSA from the project footprint, are summarized in Table 4-1.

Table 4-1 Definition of Hazardous Materials Resource Study Areas

Name of Resource Study Area	Resource Study Area Boundary (as applicable per ASTM Standard)
Environmental database review	Project footprint plus up to a 1-mile buffer to cover areas in the ASTM-specified minimum search distances for "limited environmental due diligence" (defined in ASTM Standard 1528-14), which is analogous to "all appropriate inquiries" per ASTM Standard 1527-13 and 40 CFR Part 312. Limited environmental due diligence is a process that evaluates possible or existing environmental contamination of a property.
PEC sites	Project footprint plus a 150-foot buffer from the project footprint[1] to account for hazardous material (including hazardous waste) issues on adjacent properties in addition to the margin of error of plotted points in online regulatory databases. Properties include general hazardous materials sites and sites from the *Burbank to Los Angeles Project Section Hazardous Materials and Wastes Technical Report*.[2] PEC sites also include a subset of sites on the Cortese List (California Government Code, Section 65962.5).
Landfills	Project footprint plus a 0.25-mile buffer to cover areas in the ASTM-specified minimum search distances for "limited environmental due diligence" (defined in ASTM Standard 1528-14), and to account for the CEQA significance threshold for schools' proximity to hazardous air pollutants and extremely hazardous substances.
Oil and gas wells	
Schools/educational facilities	

[1] The project footprint includes all areas required to build, operate, and maintain all permanent high-speed rail facilities, including permanent right-of-way, permanent utility and access easements, and temporary construction easements.
[2] The previous Los Angeles to Anaheim Project Section alignment extended farther north, including Los Angeles Union Station. As such, a number of sites that were discussed/identified in the *Burbank to Los Angeles Project Section Hazardous Materials and Wastes Technical Report* were also discussed/identified in the draft *Los Angeles to Anaheim Project Section Hazardous Materials and Wastes Technical Report*. The current alignment for the Los Angeles to Anaheim Project Section does not include Los Angeles Union Station, because that was encompassed by the final *Burbank to Los Angeles Project Section Hazardous Materials and Wastes Technical Report*.
ASTM = ASTM International; CFR = Code of Federal Regulations; CEQA = California Environmental Quality Act; PEC = potential environmental concern

The project footprint based on which the RSAs are defined is visualized in Figures 2 to 25 in Appendix F, Figures.

This analysis also considered the larger, regional geographic area within which hazardous materials and wastes would be transported to or from the project section during construction and operation, primarily via major transportation of freight corridors.

4.2 Methods for Impact Analysis

Many sources of information were used to establish baseline conditions within the RSAs where hazardous materials and wastes have or may have been released, and that could be disturbed during planned construction, operational, or maintenance activities. Public information regarding past use, transport, storage, disposal, and release of hazardous materials and wastes was obtained and reviewed to identify these properties.

Analysis of properties was conducted between 2015 and 2017 within and in proximity of the project footprint to identify PEC sites using aspects of the methodology provided in the California Department of Transportation Standard Environmental Reference, Chapter 10, Initial Site Assessment guidance document (2006); and the ASTM Standard Practice E 1528-14 (ASTM 2014). These sites were divided into the three categories listed below (all are depicted on figures in Appendix F):

- **Category A (High Priority):** Properties identified by Environmental Data Resources, Inc. (EDR), GeoTracker, or EnviroStor where a release of hazardous materials and wastes was reported within or adjoining areas of potential disturbance and an active assessment or remediation program is in progress or a “no further action” designation has not been granted by regulatory agencies.
- **Category B (Medium Priority):** Properties identified by EDR, GeoTracker, or EnviroStor where a release of hazardous materials and wastes was reported within or adjoining areas of potential disturbance and a “no further action” designation has been granted by regulatory agencies or where known/existing dry cleaner facilities are in the project footprint or within 150 feet of it. Contamination may still be present at Category B sites, but the closure was either risk based or predicated on the implementation of either engineering or administrative controls.
- **Category C (Low Priority):** Potential hazardous waste properties identified by EDR where a release of hazardous materials and wastes was not reported.

Additional PEC sites in Table B-3 of Appendix B were taken from and categorized consistent with the *Burbank to Los Angeles Project Section Hazardous Materials and Waste Technical Report* (Authority 2021) because they were identified in that report using different methodology (all of these properties are depicted on figures in Appendix F):

- **Category High Risk:** These properties will likely result in impacts on the Shared Passenger Track Alternatives because the review indicated that contamination is present and likely to be encountered during construction, or abatement of building materials may be required prior to construction.
- **Category Medium Risk:** These properties may result in impacts on the Shared Passenger Track Alternatives because the review indicated that contamination is or may be present but is not likely to be encountered during excavation.
- **Category Low Risk:** These properties may conceivably result in impacts on the Shared Passenger Track Alternatives because the review indicated that there is no contamination, and abatement of building materials would not be required.

Orphan properties, those potentially contaminated sites for which there is inadequate or inaccurate information to allow for the sites to be geocoded and mapped at their appropriate location, were evaluated to the extent practicable; these sites are noted on figures in Appendix F with the labeling of orphan site (“O”), followed by orphan site number (“O-XX”).

Federal and state regulations also identify by name specific hazardous wastes that USEPA has determined are hazardous and has designated as “listed wastes.” Prior to beginning construction activities, a review and evaluation of identified properties would be conducted. Criteria to be considered would include the following:

- The origin of the contamination (e.g., historical use of the site)

- The nature of the contaminants (i.e., contaminants of concern) and the resources contaminated (e.g., soil, groundwater, or both)
- The depth to contamination, with particular emphasis on this criterion where trenching or other invasive site preparation would be required
- The extent of contamination and distance from the outermost known reach of contamination to the boundary of proposed construction activities
- The current status of the case (e.g., under active remediation, nearing regulatory close-out)

Environmental database records were searched and evaluated along with other historical records, topographic maps and aerial photographs for potential effects of known or suspected hazardous material and waste at sites in the proximity of the project footprint. Sites where conditions that indicate the possibility of an existing release, a past release, or a threat of a release of the hazardous material or waste into structures on the property or into soil, groundwater, or surface water of the property and where hazardous vapor are or may be present were identified as PEC sites. The PEC designation includes sites where hazardous materials or wastes are handled and stored in compliance with laws and regulations (ASTM 2014). The California Department of Conservation's Geologic Energy Management Division (CalGEM) maps were also reviewed to determine the presence of oil fields and oil and gas wells near the project section. In addition, soil survey maps were reviewed to identify the types of naturally occurring rocks and soils in the project section to understand the likelihood of encountering naturally occurring hazardous materials (e.g., asbestos in serpentine rock formations).

The 2015 to 2017 analysis was updated in 2023 with an assessment of new data obtained from record searches via online sources (specifically GeoTracker and EnviroStor databases) and review of changed site conditions. Resulting PEC designations were modified, as applicable.

This methodology did not include interviewing property owners, performing reconnaissance at individual properties, or field sampling/analysis. This analysis performed was neither intended to be a parcel-level due diligence assessment for the purpose of property acquisition nor intended to satisfy the Phase I Environmental Site Assessment (ESA) requirements as defined by ASTM Standard E 1527-13 (ASTM 2013) or the "all appropriate inquiry" requirements, as defined in 40 CFR Part 312. A hazardous materials assessment of individual parcels potentially subject to property transfer/acquisition would occur after the NEPA/CEQA environmental review and final design/project implementation processes. The specific information obtained and reviewed is discussed in the following sections.

4.2.1 Regulatory Database Review

A review of federal, state, and other records, including a proprietary records summary provided by EDR; renamed to Lightbox EDR), a third-party provider of environmental and land use records, revealed thousands of records for properties within ASTM's standard search distances (EDR 2017). The EDR search was requested for an approximately 30-mile-long area centered on the Shared Passenger Track Alternatives. The width of the search area corresponds to the maximum search distance (1-mile buffer around the HSR project alignment) listed in Section 8.2.1 of ASTM Standard E1527-13 (ASTM 2013). The search area identified where nearby hazardous materials and wastes have or may have been released that could be disturbed during planned construction, operational, or maintenance activities.

Properties within the search area provided to EDR in August 2015—where hazardous material and wastes were used, stored, transported, disposed of, and released—are identified in the EDR reports (2015a, 2015b, 2015c). These data are generally still relevant because many land uses and business operations have not changed substantially in the project section since this time. Most of the listed properties were reviewed and not determined to be properties of potential concern based on the type of listing (e.g., listed only for permits), the information provided for the listing indicating no potential for spills or releases to the environment, the distance of the listed property from the project section footprint, and the estimated depth and direction of groundwater

flow (e.g., downgradient or cross-gradient) (refer to the *Los Angeles to Anaheim Project Section Hydrology and Water Resources Technical Report* [Authority 2025b]).

ASTM 2013 search distances included the project footprint and an area within 0.25, 0.5, and 1 miles of the footprint, depending on the particular government database from which the information was obtained. For example, a property listed in the National Priorities List Superfund database may affect large areas and, therefore, a 1-mile search distance is applied to searches of sites listed on the National Priorities List, whereas a property identified on the historical underground storage tank (UST) database may affect a more localized area, so a 0.25-mile search distance is applied to searches of UST databases. The EDR DataMap Environmental Atlas was reviewed to identify properties with street addresses within the project footprint or within 150 feet of the project footprint, which were classified as PEC sites that could affect the project.

A list, with descriptions, of government databases provided by EDR in August 2015 and December 2017 is included in Appendix A, EDR Databases – August 2015 and December 2017. The list was reviewed in 2023 and extents of three locations were identified as larger than in 2015 to 2017.

Properties where hazardous materials and wastes were used, transported, stored, disposed of, or released within or adjoining the areas of potential disturbance have the greatest likelihood of affecting the project.

The screening criteria used were: (1) to focus on those listed facilities within or on adjoining properties to the project footprint and (2) facilities within 150 feet of the project footprint where investigation and remediation activities were ongoing.

4.2.2 Agency Records Review

4.2.2.1 GeoTracker and EnviroStor Databases

No file reviews were conducted at the California RWQCB or California DTSC offices as part of this analysis. However, online records were reviewed on the SWRCB GeoTracker and DTSC EnviroStor databases to supplement information obtained for properties of potential concern identified during the EDR database records review (refer to Table B-3 in Appendix B).

4.2.2.2 Site Historical Use Information

Reasonably ascertainable, standard historical sources (i.e., aerial photographs and topographic maps provided by EDR) were reviewed to develop a history of the previous uses of the project section and surrounding areas to identify the likelihood of past uses that could have adversely affected the project from an environmental perspective. The historical sources were reviewed in 2017 to update data in Table B-3 (Appendix B) and other information in the report, as necessary.

Historical Aerial Photographs

Complete or partial aerial photographic coverage along the project alignment was available for 1928, 1938, 1948, 1963, 1972, 1974, 1986, 1989, 1990, 1994, and 2002 (EDR 2015b). These photographs were viewed from north to south to identify features that may indicate past use or storage of hazardous materials and wastes within the environmental database review RSA. Such features included agricultural lands where pesticides and herbicides may have been applied, aboveground storage tanks (AST) where petroleum products may have been used and stored, airports, drilling derricks and associated retention ponds where petroleum products could have been released, electrical stations, and industrial properties where solvents, petroleum products, and hazardous wastes may have been used, stored, or released. The aerial photograph review findings are summarized in Table B-1 (Appendix B) and Chapter 5, Affected Environment. Aerial photographs are provided in Appendix C, Aerial Photographs.

Sanborn Insurance Company Maps

For this phase of the project section, Sanborn fire insurance maps (EDR 2016) were requested from EDR for the HSR station (ARTIC) and proposed HSR station option locations:

Norwalk/Santa Fe Springs and Fullerton. The decision to request Sanborn fire insurance maps for the three proposed stations and not the entire 30-mile alignment was based on budget constraints and the stations being areas where anticipated substantial ground disturbance would take place. EDR reported that map coverage was not found for the Norwalk/Santa Fe Springs Station and ARTIC areas. However, maps were provided for the Fullerton Station area. The Sanborn map review findings are summarized in Section 5.5, Summary of Sanborn Map Findings. Copies of the Sanborn maps are included in Appendix D, Sanborn Maps.

Historical Topographic Maps

A review of the U.S. Geological Survey (USGS) topographic quadrangle maps (EDR 2015c) was performed to identify evidence of built structures, fill areas, ASTs, and oil drilling sites that may represent areas of hazardous materials and waste use or storage within the environmental database review RSA. Complete or partial USGS quadrangle map coverage was available for 1896, 1898, 1900, 1901, 1902, 1925, 1926, 1927, 1928, 1935, 1936, 1942, 1945, 1947, 1949, 1950, 1951, 1952, 1953, 1964, 1965, 1966, 1972, 1981, and 1994. The topographic map review findings are summarized in Table B-2 (Appendix B) and Chapter 5. Topographic maps are provided in Appendix E, Topographical Maps.

4.2.3 Previous Site Assessments

No prior published environmental assessment documents associated with the project section were reviewed in preparing this technical document.

4.2.4 Site Reconnaissance

A review of aerial photography (EDR 2015b) and project section CabCam footage[11] was performed to obtain a general overview of land use of properties along and nearby the project alignment. A summary of the property uses along the project alignment is presented in Chapter 5. Site reconnaissance along the entire project alignment was not conducted as of the writing of this report. Observations were made from publicly accessible areas (public rights-of-way) in August and September 2016 at properties listed on environmental databases and determined to be PEC sites, as discussed in Section 5.8, and in Table B-3 (Appendix B). The Authority conducted additional limited reconnaissance along distinct sections of the project alignment on September 26 and 27, 2023. The majority of land use was assessed throughout, and more details are provided in Section 5.7, Summary of Site Reconnaissance.

4.3 Evaluating Impacts Under NEPA

NEPA implementing procedures, regulations, and guidance provide the basis for evaluating project effects. The criteria of context and intensity are considered together when determining the severity of changes introduced by the project. Context means the affected environment in which a proposed project occurs. Intensity refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved, location and extent of the effect, duration of the effect (short or long term), and other considerations. Beneficial effects are identified and described. When there is no measurable effect, no effect would occur. The intensity of adverse effects is the degree or magnitude of a potential adverse effect, described as *negligible*, *moderate*, or *substantial*. Context and intensity are generally considered together when determining whether an effect is significant under NEPA.

4.4 Determining Significance Under CEQA

Consistent with Appendix G of the State CEQA Guidelines, a project is considered to have a significant effect on the environment if it results in one or more of the following conditions:

[11] A camera system mounted to a vehicle or train that records while the vehicle or train is moving.

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (the Cortese List) and, as a result, would create a significant hazard to the public or the environment
- Emits hazardous air emissions or handles extremely hazardous substances or mixtures containing extremely hazardous substances within 0.25 mile of a school and would pose a health or safety hazard to students or employees

Current conditions, including the hazardous material and waste sites identified in the available databases, provide the baseline against which the alternatives have been compared.

5 AFFECTED ENVIRONMENT

5.1 Physiography and Regional Geologic Setting

The project section would traverse a portion of the Los Angeles Basin, a geological structural trough, which is a northwest-trending alluvial plain of low topographic relief, approximately 50 miles long and approximately 20 miles wide. This physiographic basin is bounded on the north by the Santa Monica and San Gabriel Mountains of the Transverse Ranges geomorphic province; on the south and east by the San Joaquin Hills and the Santa Ana Mountains of the Peninsular Ranges geomorphic provinces, respectively; and on the west by the Pacific Ocean (Yerkes et al. 1965). The Los Angeles Basin is within the Peninsular Ranges geomorphic province of California, which is one of the 11 geomorphic provinces in California. Each province has distinct and unique landforms, topographic relief, climate, and geology (Harden 2004).

The Los Angeles Basin is characterized primarily by four sub-parallel structural blocks, comprising the Northeastern, Northwestern, Southwestern, and Central blocks, sliced longitudinally by the steeply dipping, northwest-trending Newport-Inglewood and Whittier fault zones. The project alignment traverses the Central Block. The Los Angeles Basin, at the northerly terminus of the Peninsular Ranges, is the site of active sedimentation, and the subsurface strata (deposited above basement rock) are interpreted to be as much as 31,000 feet thick in the center of the synclinal trough of the Central Block (Yerkes et al. 1965).

The Central Block is wedge-shaped in map view and extends from the Santa Monica Mountains on the northwest to, and including, the San Joaquin Hills to the southeast. The Central Block widens from approximately 10 miles in the northwest to more than 20 miles in the southeast. The southwestern margin of the Central Block is the northwest-trending line of low hills and mesas underlain by the Newport-Inglewood fault that extends from the mouth of the Santa Ana River to Beverly Hills. The northeastern margin of the Central Block underlies the Elysian and Puente Hills.

The project alignment is situated along a gently sloping alluvial plain of low relief referred to as the Central Plain (Yerkes et al. 1965) or the Coastal Plain (Poland et al. 1959). The Central Plain slopes gently southward from near the base of the Elysian, Puente, Coyote, and Peralta Hills. According to the Los Angeles, Southgate, Whittier, La Habra, Anaheim, and Orange, California 7.5-minute series quadrangle topographic maps (photo revised 1981), local surface water sheet flows toward the southwest and Pacific Ocean. The project alignment crosses several large drainages originating from the moderate highland topography to the north and east. Existing ground surface elevations along the project alignment vary from a topographic high of approximately 250 feet above mean sea level at the northern terminus at First Street in Los Angeles to approximately 165 feet above mean sea level at ARTIC. The topographic low of the project alignment is approximately 100 feet above mean sea level near the Norwalk/Santa Fe Springs Station.

5.2 Hydrology

Based on the subsurface data from prior investigations and published literature, groundwater depths along the project alignment could range from the ground surface in the vicinity of the rivers, percolation basins, and drainages to depths of greater than 100 feet below ground surface. The shallowest depths are in the vicinity of Norwalk and Santa Fe Springs and the deeper levels are near the I-710 and I-5 intersection. The depth to groundwater can vary seasonally based on precipitation, pumping practices, recharge, and irrigation.

5.3 Surface Water

In general, surface water flow occurs as sheet flow in the areas adjoining the project alignment because of the urban setting. The topography along the route generally slopes toward the south and southwest in the direction of the Pacific Ocean.

The project alignment crosses several important drainage features originating from the moderate highland topography at the north and east, including the Los Angeles River (Figure 4), Rio Hondo

(Figure 9), San Gabriel River (Figure 10), La Mirada Creek (Figure 15), Coyote Creek (Figure 14 and Figure 16), Brea Creek (Figure 17), Fullerton Creek (Figure 19), and Carbon Canyon Creek (Figure 21). All figures referenced are in Appendix F.

5.4 Summary of Aerial Photograph Findings

For the purposes of summarizing aerial photograph findings, the project section was divided into segments which were systematically evaluated as described in Section 5.4.1, Northern Terminus at U.S. Highway 101 to Redondo Junction, to Section 5.4.6, Fullerton Junction to ARTIC.

All aerial photographs reviewed and summarized here are included in Appendix C. The railroad right-of-way was visible in the aerial photographs reviewed; the descriptions are related to the properties adjoining or in proximity to the railroad right-of-way. These adjoining properties consisted of undeveloped and agricultural land that was developed during the years stated for each area. Previous agricultural usage is often identified in a review of historical sources. In absence of other evidence to the contrary, it is assumed that pesticides and herbicides were applied for their intended purposes in accordance with label directions and therefore do not meet the definition of a hazardous substance release, and are not considered PEC sites with respect to the project (Section 5.10.3, Pesticides). However, the persistent historical use of pesticides may have caused residual contaminants to be present in the soil, requiring special handling and disposal. Potential environmental concerns at each segment are described below.

5.4.1 Northern Terminus at U.S. Highway 101 to Redondo Junction

This subsection represents 2.9 miles of the project alignment between the U.S. Highway 101 (US 101) and Redondo Junction (Figures 2 to 4 of Appendix F). The northern terminus at US 101 is generally bounded by LAUS on the north, US 101 on the east and west, and the PEC site RSA on the south. In 1928, LAUS was occupied by commercial/light industrial buildings. In 1938, LAUS buildings were being built while approximately eight spur railroad tracks (for passenger loading/unloading) were already in existence on the east side of the buildings being built. No substantial changes to the LAUS property occurred until 1994 when the Metro Gateway Building was built. The LAUS configuration has remained substantially the same between 1994 and the present. Surrounding property uses have generally consisted of commercial/light industrial between 1928 and the present.

In 1928, the adjoining/nearby properties east of the RSA (across the Los Angeles River) were partially developed with commercial buildings while the adjoining/nearby properties west of the project alignment were fully developed with commercial/industrial buildings. Properties were substantially developed with primarily commercial/industrial buildings by the late 1930s/early 1940s. Areas of identified potential environmental concern consisted of ASTs (and associated operations) within the project alignment between northern terminus at US 101 and E Olympic Boulevard (refer to Figures 2, 3, and 4 in Appendix F). In addition, an AST and several basins (rectangular-shaped retention ponds) between the Los Angeles River and the Redondo Junction Roundhouse area were noted.

5.4.2 Redondo Junction to Rio Hondo

This area represents 6.7 miles of the project alignment from Redondo Junction to Rio Hondo (Figures 4 to 9 and 25 of Appendix F). Development consistent with urbanized areas exists on adjoining/nearby properties (primarily commercial/industrial) to the railroad right-of-way occurred during the 1920s and 1930s, primarily along the eastern portion of the project section in between the Los Angeles River and Eastern Avenue in the cities of Vernon and Commerce. Prior to this time period, these properties consisted of undeveloped (possibly agricultural) land. The remaining adjoining properties between Eastern Avenue and Rio Hondo were substantially developed by the 1950s. No specific PEC sites were identified. However, the project alignment passes through a heavily developed commercial and industrial area that is considered of general environmental concern.

5.4.3 Rio Hondo to Imperial Highway

This area represents 6.0 miles of the project alignment from Rio Hondo to Imperial Highway (Figures 9 to 13 and 25 of Appendix F). The adjoining/nearby properties to the railroad right-of-way between Rio Hondo and the project intersection with Norwalk Boulevard (Los Nietos Road area) generally consisted of undeveloped and agricultural land (orchards) through the late 1940s/early 1950s. These adjoining properties were primarily developed into residential neighborhoods with some commercial buildings during the 1950s. The adjoining/nearby properties between the project intersection with Norwalk Boulevard southward to south of Lakeland Road were heavily used for petroleum exploration and associated activities during the 1920s through the 1970s. Commercial/industrial buildings generally appeared in the 1960s. Areas of potential environmental concern consisted of oil wells, petroleum refineries, oil reservoirs/sumps, ASTs (petroleum products), and a large manufacturing facility (clay products plant) within approximately 1,000 to 1,500 feet of the project alignment.

5.4.4 Imperial Highway to Beach Boulevard

This area represents 4.4 miles of the RSA from Imperial Highway to Beach Boulevard (Figures 13 to 16 of Appendix F). The adjoining/nearby properties to the railroad right-of-way generally consisted of undeveloped and agricultural land (orchards) during the 1920s and 1930s. These properties to the northeast were developed into primarily residential neighborhoods by the early 1960s, while the properties to the southwest were developed with primarily commercial buildings in the 1960s and 1970s. Areas of potential environmental concern consisted of AST farms (petroleum products) on the adjoining properties northeast of the project alignment near Shoemaker Avenue and Carmenita Road.

5.4.5 Beach Boulevard to Fullerton Junction

This area represents 5.1 miles of the project alignment from Beach Boulevard to Fullerton Junction (Figures 16 to 20 of Appendix F). The adjoining/nearby properties to the railroad right-of-way generally consisted of undeveloped and agricultural land (orchards), except for the downtown Fullerton area, through the 1950s. The downtown Fullerton area was substantially developed by the 1920s/1930s with residential and commercial buildings. These properties were developed with residential neighborhoods and commercial buildings by the early 1960s and continuing through the 1980s. Some properties on the northern side of the project alignment near Beach Boulevard were not developed until the mid- to late 1990s. These properties appeared to be undeveloped, nonagricultural land, and the aerial photography review did not reveal any potential environmental concerns in this area.

5.4.6 Fullerton Junction to ARTIC

This area represents 5.3 miles of the project alignment from Fullerton Junction to ARTIC (Figures 20 to 24 of Appendix F). The adjoining/nearby properties to the railroad right-of-way generally consisted of undeveloped and agricultural land (orchards) through the 1940s to 1950s. However, the segment through the main portion of Anaheim between La Palma Avenue and Cypress Street was mostly developed by the late 1930s. The adjoining/nearby properties between Fullerton Junction and La Palma Avenue were primarily developed with commercial buildings and some residential buildings by the 1960s. The adjoining properties to the project alignment between Cypress Street and ARTIC were primarily developed in the 1970s and 1980s. The aerial photography review did not reveal any potential environmental concerns in this area.

5.5 Summary of Sanborn Map Findings

For the purposes of summarizing Sanborn map findings, the project section was divided into segments that were systematically evaluated as described in Section 5.5.1, Northern Terminus at U.S. Highway 101, to Section 5.5.4, ARTIC Area.

For this phase of the project, Sanborn fire insurance maps (Appendix D and EDR 2016) were requested from EDR for the proposed HSR station (ARTIC) and HSR station option locations: Norwalk/Santa Fe Springs and Fullerton. The decision to request Sanborn fire insurance maps for

the three proposed stations and not the entire 30-mile alignment was based on budget constraints and the station areas where substantial ground disturbance would take place. EDR reported that map coverage was not found for the Norwalk/Santa Fe Springs and ARTIC Station areas. However, maps were provided for the Fullerton Station area. The Sanborn maps reviewed are included in Appendix D of this technical report.

5.5.1 Northern Terminus at U.S. Highway 101

EDR provided map coverage of the northern terminus at US 101 for the years of 1894 and 1906. The former uses on these parcels are summarized below:

- **1894:** Map provides partial coverage of area (southern/southwestern portions). The LAUS area is occupied by residential buildings (homes and boarding houses), retail stores, and some commercial businesses (including liveries and feed stores).
- **1906:** Maps provide coverage of most of the LAUS area, which was occupied by a mix of residences, stores, commercial/light industrial businesses (e.g., lumber yard), and stables/corrals/stockyards.

5.5.2 Norwalk/Santa Fe Springs Station Area

EDR stated that Sanborn map coverage was not found for the Norwalk/Santa Fe Springs Station area.

5.5.3 Fullerton Station Area

EDR provided map coverage for the following years: 1890, 1894, 1900, 1907, 1911, 1917, 1927, 1949, and 1959. The former uses on these parcels are summarized below:

- **1890:** Map provides only partial coverage of the station area (approximately 450 feet to the east of Spadra Road (now Harbor Boulevard). The area depicted on the map is undeveloped except for a freight house/ticket office/waiting room building adjacent to (and north of) the railroad tracks.
- **1894:** Map provides only partial coverage of the station area (from Spadra Road to approximately 350 feet east of Pomona Avenue). The area between Spadra Road and Pomona Avenue is occupied by the Southern California Railway Depot building (same building as depicted on the 1890 map), a park, a wood-planing mill, a fruit packing house, and a grain warehouse. The planing mill area notes include references to “power steam,” “boiler room,” “2,000-gallon tank [water?] on trestle,” and “glue pots heated by kerosene stove.” The area on the east side of Pomona Avenue is occupied by a lumber yard and a grain/fruit packing warehouse. A planing mill, feed mill, and mechanical rooms are in a structure at the northwest corner of the parcel.
- **1900:** Map provides only partial coverage of the station area (from Spadra Road to approximately 500 feet east of Pomona Avenue). The property uses are the same as those depicted on the 1894 map with the addition of a packing house on the property east of Pomona Avenue.
- **1907:** Map provides same coverage as the 1900 map. The property uses are very similar to those depicted on the 1900 map with some additional small buildings east of Pomona Avenue. Two steam boilers (boiler house) and an underground fuel oil tank are depicted on the mill property on the east side of Pomona Avenue.
- **1911:** Map provides same coverage as the 1907 map. The property uses are essentially the same as those depicted on the 1907 map with the addition of a grain warehouse in the location where Pomona Avenue terminates at the railroad tracks.
- **1917:** Map provides same coverage as the 1911 map. The property uses are essentially the same as those depicted on the 1911 map. Pomona Avenue no longer bisects the proposed station area boundaries (terminates at Santa Fe Avenue).

- **1927:** The map provides complete coverage of the proposed station area. The portion between Spadra Road and Pomona Avenue is similar to previous maps. However, an east/west-trending railroad spur crosses the northern portion of the parcel. The portion between Pomona Avenue and Harvard Avenue (now Lemon Street) remains in use as a lumber yard/planing mill facility with warehouse storage. A steel refuse burner is present next to the boiler house. However, the fuel oil tank is no longer depicted adjacent to the steam boiler house.
- **1949:** The map provides complete coverage of the proposed station area. The railway depot building appears to have been relocated approximately 250 to 300 feet to the east of its original location. The eastern portion of the proposed station area remains used as a lumberyard. The steel burner is still present, but the boiler warehouse has been removed.
- **1959:** The map provides complete coverage of the proposed station area. Conditions are very similar to those depicted on the 1949 map. One of the buildings in the lumberyard is identified as “S. & Paints.” The steel burner remains in place.

The former underground fuel oil tank noted on the 1907 Sanborn map (as described above) was likely removed as part of redevelopment activities on the property. However, this and the general use of the property for commercial/light industrial purposes are considered as PEC sites until further detailed investigation is conducted to better ascertain the history of the property.

5.5.4 ARTIC Area

EDR stated that Sanborn map coverage was not found for the ARTIC area.

5.6 Summary of Topographic Map Findings

For the purposes of summarizing topographic map findings, the project section was divided into segments that were systematically evaluated as described in Section 5.6.1, Northern Terminus at U.S. Highway 101 to Redondo Junction, to Section 5.6.6, Fullerton Junction to ARTIC.

The topographic maps reviewed are included in Appendix E.

5.6.1 Northern Terminus at U.S. Highway 101 to Redondo Junction

LAUS, adjacent to the northern terminus of the project footprint, was partially occupied by small buildings (likely residential) and streets in 1894. By the 1920s, LAUS was occupied by several large buildings (likely commercial/light industrial) and approximately six railroad spur tracks. The 1953 topographic map depicts the LAUS buildings and eight spur railroad tracks (for passenger loading/unloading) on approximately two-thirds of the site. The LAUS property has remained in a similar condition between 1994 and the present.

The project footprint between the northern terminus at US 101 to Redondo Junction was occupied by railroad tracks in 1896, and the RSA to Jackson Street appeared to be occupied by residential buildings in the same year. Development on adjoining/nearby properties (mix of primarily residential with some commercial/industrial) was limited. By the 1920s and 1930s, the adjoining/nearby properties were primarily developed with commercial/industrial buildings. Areas of potential environmental concern consisted of aboveground gasoline and oil storage tanks either within the project footprint (especially between the northern terminus at US 101 and Jackson Street) or within approximately 200 to 1,000 feet west of the project footprint.

5.6.2 Redondo Junction to Rio Hondo

The project footprint was occupied by railroad tracks as early as 1896. Development on adjoining/nearby properties (primarily commercial/industrial) was limited through the 1920s and 1930s, especially along the eastern portion of the project alignment in Commerce and Montebello. These adjoining/nearby properties were mostly developed with commercial/industrial buildings by the 1940s and 1950s. Areas of potential environmental concern consisted of ASTs (unknown contents) and oil wells within approximately 1,500 feet of the project footprint.

5.6.3 Rio Hondo to Imperial Highway

The project footprint was occupied by railroad tracks as early as 1896. The adjoining/nearby properties between Rio Hondo and the project intersection with Norwalk Boulevard generally consisted of undeveloped and agricultural land (orchards) through the late 1940s/early 1950s. These adjoining properties were primarily developed into residential neighborhoods with some commercial buildings during the 1950s. The adjoining/nearby properties from the project intersection with Norwalk Boulevard southward to Imperial Highway were used for petroleum exploration and associated activities at some point starting between 1900 and 1925. This area continued to be used for these purposes through at least 1981. Commercial/industrial buildings generally appeared in the 1960s. Areas of potential environmental concern consisted of oil wells, petroleum refineries, oil reservoirs/sumps, ASTs (petroleum products), and a clay products plant within approximately 1,000 to 1,500 feet of the project footprint.

5.6.4 Imperial Highway to Beach Boulevard

The project footprint was occupied by railroad tracks as early as 1896. The adjoining/nearby properties generally consisted of undeveloped and agricultural land (orchards) through the late 1950s. These properties to the northeast were developed with primarily residential neighborhoods in the 1950s and 1960s while the properties to the southwest were developed with primarily commercial buildings in the 1960s and 1970s. Areas of potential environmental concern consisted of AST farms (petroleum products) on the adjoining properties northeast of the project alignment near Carmenita Road.

5.6.5 Beach Boulevard to Fullerton Junction

The project footprint was occupied by railroad tracks as early as 1896. The adjoining/nearby properties generally consisted of undeveloped and agricultural land (orchards), except for downtown Fullerton, through the 1950s. The downtown Fullerton area was substantially developed by the 1920s/1930s with residential and commercial buildings. These remaining adjacent properties were developed with residential neighborhoods and commercial buildings primarily starting in the 1950s and 1960s and continuing through the 1980s. Areas of potential environmental concern were not identified other than a mining pit on the north side of the project alignment. However, this former mining pit is now occupied by a residential community.

5.6.6 Fullerton Junction to ARTIC

The project was occupied by railroad tracks as early as 1896. The adjoining/nearby properties generally consisted of undeveloped and agricultural land (orchards) through the 1940s to the 1950s except for where the project alignment passed through downtown Anaheim. Downtown Anaheim was already developed by the early 1900s with residential or commercial buildings. These remaining properties were developed with residential neighborhoods and commercial buildings primarily starting in the 1950s and 1960s. The adjoining properties to the project alignment between Ball Road and the Santa Ana River were primarily developed in the 1970s and 1980s. The topographical map review did not reveal potential environmental concerns in this area.

5.7 Summary of Site Reconnaissance

For the purposes of summarizing site reconnaissance findings, the project section was divided into segments that were systematically evaluated as described in Section 5.7.1, Northern Terminus at U.S. Highway 101 to Redondo Junction, to Section 5.7.6, Fullerton Junction to ARTIC.

Aerial photography (EDR 2015b), Google Earth imagery, and provided CabCam footage was reviewed to obtain a general overview of adjoining/nearby property usage along the project alignment. Additionally, in August and September 2016, properties listed in environmental databases were viewed from publicly accessible areas (public rights-of-way) to confirm addresses, locations, and site use (no interviews were conducted).

The Authority conducted additional site reconnaissance along the project alignment on September 26 and 27, 2023. The majority of land use was confirmed throughout the project alignment during this assessment. Notable observations from the site reconnaissance and addresses not listed on GeoTracker/EnviroStor areas follows:

- Demolition and grading identified along Washington Boulevard and Downey Street in Los Angeles
- A residential area not previously identified was observed in Commerce, south of Fidelia Avenue and between Washington Boulevard to the west and Sheila Street to the east (adjoining the train tracks)
- A sustainability educational center being built in Anaheim
- **704 East Broadway, Anaheim:** Occupied by Firmenich – Flavours, a fragrances and aroma supplier. This address is within 150 feet of the project footprint and was not listed in EnviroStor/GeoTracker.
- **424 S Atchison Street, Anaheim:** Occupied by Firmenich – Flavours, a fragrances and aroma supplier. This address is within 150 feet of the project footprint to the south-southwest and was not listed in EnviroStor/GeoTracker.
- **13355/13315 Cambridge Street, Santa Fe Springs:** Occupied by Kenko Freight Systems warehouse. This address is within 150 feet of the project footprint and is not listed on GeoTracker/EnviroStor. Wells on the property are from an open site assessment and interim remedial action in connection with Golden West Refinery.
- **1901 Raymer Avenue, Fullerton:** Occupied by RPM Consolidated Service & Royal Hawaiian Express Trucking and freight yard. This address is within the 150-foot RSA to the north-northeast and is not listed on GeoTracker/EnviroStor.

A general description of the land uses along the project alignment is presented below.

5.7.1 Northern Terminus at U.S. Highway 101 to Redondo Junction

The concrete-lined Los Angeles River adjoins the eastern side of the project alignment. Properties on the east side of the Los Angeles River are occupied by commercial/light industrial buildings. The adjoining/nearby properties on the western side of the project alignment are also occupied by commercial/light industrial buildings.

5.7.2 Redondo Junction to Rio Hondo

The adjoining/nearby properties on the north/northeast side of the project alignment are occupied by commercial/light industrial buildings except for the portion between Greenwood Avenue and Rio Hondo, which consists of single-family residential neighborhoods. The adjoining/nearby properties on the south/southwest side of the project alignment are occupied by commercial/light industrial buildings. A few large railroad yards/spur track areas also adjoin the project alignment within this segment.

5.7.3 Rio Hondo to Imperial Highway

The adjoining/nearby properties on both sides of the project alignment between Rio Hondo and near Norwalk Boulevard are occupied by a mix of commercial and single-family residential properties. From near Norwalk Boulevard to Imperial Highway, the adjoining/nearby properties are developed with commercial/light industrial buildings with some vacant lots within the Santa Fe Springs area.

5.7.4 Imperial Highway to Beach Boulevard

The adjoining/nearby properties on the northeast side of the project alignment between Imperial Highway and Valley View Avenue are occupied by commercial/light industrial buildings. Between Valley View Avenue and near Coyote Creek (approximately 1,100 feet from Beach Boulevard), the adjoining/nearby properties on this side of the project alignment consist of single-family

residential neighborhoods. Commercial buildings occupy the adjoining/nearby properties on the northeast side of the project alignment between Coyote Creek and Beach Boulevard.

The adjoining/nearby properties on the southwest side of the project alignment between Imperial Highway and Carmenita Road are composed of commercial buildings, single-family residential neighborhoods, and greenspace (parks/athletic fields). Starting at Carmenita Road to Coyote Creek, these properties are occupied by commercial buildings. Single-family residential neighborhoods occupy the adjoining/nearby properties on the southwest side of the project alignment between Coyote Creek and Beach Boulevard.

5.7.5 Beach Boulevard to Fullerton Junction

The adjoining/nearby properties on both sides of the project alignment between Beach Boulevard and the Fullerton Junction are occupied by a mix of single-family residential and commercial buildings.

5.7.6 Fullerton Junction to ARTIC

The adjoining/nearby properties on both sides of the project alignment between the Fullerton Bend and Vermont Avenue are occupied by a mix of single-family residential and commercial buildings. From Vermont Avenue to the Santa Ana River, the adjoining/nearby properties on both sides of the project alignment are occupied by commercial buildings.

5.8 Sites with Potential Environmental Concerns

Properties that have the highest likelihood to result in potential effects through disturbance include properties in the PEC sites RSA and any nearby listed or proposed Superfund sites. PEC sites were identified based on the three categories and prioritization defined in Section 4.2:

- **Category A (High Priority):** 73 properties identified
- **Category B (Medium Priority):** 208 properties identified
- **Category C (Low Priority):** 19 properties identified

In addition to the 300 PEC sites listed above, 5 more PEC sites (property identification numbers 352, and 354 through 357) in Table B-3 (Appendix B) were taken from and categorized consistent with the *Burbank to Los Angeles Project Section Hazardous Materials and Waste Technical Report* (Authority 2021):

- **Category High Risk:** One property identified
- **Category Medium Risk:** Two properties identified
- **Category Low Risk:** Two properties identified

Table 5-1 lists the PEC sites associated with areas where more substantial soil disturbance is proposed in addition to areas humans would occupy and use during operations, including the LMFs and HSR station options. The total number of PEC sites and PEC sites that are on the Cortese List within the LMF and station footprints and 150-foot buffer are in Table 5-1. As summarized in Table 5-1, 22 PEC sites lie within the footprint and 150 feet of the potential LMF and station locations; four of these are on the Cortese List, a subset of PEC sites.

Table 5-1 Potential Environmental Concern Sites, and Subset of These Sites on the Cortese List

Location Name	Number of PEC Sites (within project footprint and 150-foot buffer from project footprint)	Number of PEC Sites (within project footprint)	Number of PEC Sites on the Cortese List (within project footprint and 150-foot buffer from footprint)	Number of PEC Sites on the Cortese List (within project footprint)
26th St LMF (Shared Passenger Track Alternative A)	8	5	1	1

Location Name	Number of PEC Sites (within project footprint and 150-foot buffer from project footprint)	Number of PEC Sites (within project footprint)	Number of PEC Sites on the Cortese List (within project footprint and 150-foot buffer from footprint)	Number of PEC Sites on the Cortese List (within project footprint)
15th St LMF (Shared Passenger Track Alternative B)	6	3	1	1
ARTIC HSR Platform and Station	0	0	0	0
Norwalk/Santa Fe Springs HSR Station Option	2	1	2	1
Fullerton HSR Station Option	6	2	0	0
Total	**22**	**11**	**4**	**3**

ARTIC = Anaheim Regional Transportation Intermodal Center; HSR = high-speed rail; LMF = light maintenance facility; PEC = potential environmental concern

Eight PEC sites are within and near the 26th Street LMF (Appendix F, Figures 5 and 6), with one of these being a PEC site on the Cortese List (map ID 46; Appendix F, Figure 5). Site number 46 is the Exide Technologies property at 2700 S Indiana Street, Vernon, CA 90058, a proposed Superfund site (discussed further in Section 5.9, Superfund Sites).

Six PEC sites are within and near the 15th Street LMF (Appendix F, Figures 3 and 4), with one of these being a PEC site on the Cortese List (map ID 17; Appendix F, Figure 4). Site number 17 is the City of Los Angeles Asphalt Plant Number 1 at 2484 E Olympic Boulevard, Los Angeles, CA 90021. The owner terminated the property's voluntary cleanup agreement 2017, and its current status is "needs evaluation." The City of Los Angeles has operated this asphalt plant since the 1940s. During this property's use by the City of Los Angeles, many USTs containing gasoline and diesel fuel were installed and removed.

There are no PEC sites within, or close to, ARTIC (Appendix F, Figures 23 and 24).

Two PEC sites are within and near the Norwalk/Santa Fe Springs HSR Station Option (Appendix F, Figures 13 and 14), with both of these being active PEC sites on the Cortese List. Site number 112 (map ID 112; Appendix F, Figure 13) is listed as the Neville Chemical Company. DTSC has been overseeing remediation of this site since 2006, and contaminants of concern in soil and groundwater include halogenated organic compounds, 2,4-dichlorophenol, and volatile organic compounds. The site has a land use restriction in place and, as of 2023, is undergoing groundwater monitoring. The depth to groundwater in this area is around 100 feet below grade. The second PEC site on the Cortese List is within 150 feet of the Norwalk/Santa Fe Springs HSR Station Option site (map ID 111; Appendix F, Figure 13); however, it is inactive, with the case related to historical gasoline impacts on soil closed and "no further action" determined to be required (1999).

Six PEC sites are within and near the Fullerton HSR Station Option; none are on the Cortese List (Appendix F, Figures 19 and 20). Map IDs 154, 155, 158, and 162 are within 150 feet of the station footprint; only map IDs 155 and 162 have documented releases and map ID 155 is potentially one of the responsible parties that contaminated groundwater in the Orange County North Basin Superfund site (discussed in Section 5.9). Map ID 162 had soil impacts from polyaromatic hydrocarbons but received a "Certificate of Completion" from DTSC in 2014. Two of the PEC sites are within the Fullerton HSR Station Option footprint (map IDs 160 and 161; Appendix F, Figures 19 and 20). Site 160 is listed as Southern California Gas/Fullerton Manufactured Gas Plant – 144 West Walnut Avenue with a "no further action" status for a cyanide and metals release to soil. Site 161 is listed as World Citrus West – 130 West Santa Fe and with a "case closed" status for a gasoline release to soil.

Table B-3 (Appendix B) provides a list of the 305 properties and potential associated releases of hazardous materials and wastes within and adjoining the areas of potential disturbance in the environmental database review RSA. Refer to Table B-3 for priority listings and EnviroStor/ GeoTracker findings. Figures 2 through 25 in Appendix F also provide locations for each of these properties.

Risks associated with conducting construction activities within or near PEC sites include direct and indirect exposure of the workforce and sensitive receptors in the vicinity to contaminants, the potential to exacerbate or spread existing environmental contamination, and the creation of environmental contamination as a result of incidental disturbance of previously unknown or currently contained environmental contamination (e.g., USTs).

5.9 Superfund Sites

The following Superfund sites are a subset of the PEC sites mentioned above. However, because of the extent of their potential impact, they are described in additional detail here. Additional research was conducted in EnviroStor and GeoTracker in 2025 for these two Superfund sites.

The Exide Technologies property at 2700 S Indiana Street, Vernon, CA 90058 (Table B-3 ID #46 and USEPA ID CAD097854541) is a proposed Superfund site (as of September 2024). Exide was a lead recycling facility that operated from 1922 to 2014. Groundwater beneath the site is contaminated with trichloroethylene at concentrations exceeding USEPA's Safe Drinking Water Act Maximum Contaminant Level. Moreover, lead contamination in soils has been found in on-site acid pits as well as in the residential neighborhoods around the site. DTSC has conducted extensive site characterization activities at the site and surrounding areas since 2013. In April 2025, DTSC approved the final closure of the facility under the RCRA and the Hazardous Waste Control Law, pursuant to the facility's DTSC-approved Closure Plan and Closure Implementation Plan to ensure that lead-containing dusts are safely removed from on-site structures prior to their deconstruction. Most on-site structures have been decontaminated, deconstructed, and removed as of April 2025, and any remaining structures would be addressed as part of future remedial actions under CERCLA and the Hazardous Substance Account Act; DTSC's continued oversight through CERCLA and the Hazardous Substance Account Act will ensure that above-grade and below-grade contamination is managed appropriately to protect human health and the environment. Because of the extensive nature of potential impacts associated with the Exide site and because groundwater monitoring and site characterization activities are ongoing, a timeline for completion of remediation activities associated with CERCLA and the Hazardous Substance Control Law compliance is currently unknown. Sampling to date suggests that the entire site may be covered by impacted fill, and the extent of future cleanup activities would be dictated by the results of the ongoing data gap investigation and subsequently prepared Remedial Investigation Report and Feasibility Study/Remedial Action Plan for the selected remedy. Groundwater monitoring wells on the property exist in the project alignment and more information about their location and extent of contamination is available on EnviroStor in the facility's annual groundwater monitoring reports.

The Orange County North Basin is a Superfund site (listed in September 2020) that features a contaminated groundwater plume originating from multiple sources in Orange County, California. The North Basin groundwater is contaminated with volatile organic compounds and other chemicals originating from industrial activities in the area. The plume extends to mixed residential, commercial, and industrial areas in Anaheim, Fullerton, and Buena Park. In the past, the plume was also partially beneath part of Placentia, but the plume has since moved southwest. The plume has affected the Orange County Groundwater Basin. In 2016, USEPA entered into an administrative agreement (Docket Number 2016-03) with the Orange County Water District in which the water district agreed to conduct a remedial investigation and feasibility study to further characterize areas with elevated contaminant concentrations and develop and evaluate alternatives for an interim remedy for parts of the plume that contain the highest volatile organic compound concentrations to hydraulically contain contaminated groundwater originating from the majority of known or suspected sources in the North Basin Study Area. The location of the Orange County North Basin's project area within the Superfund site (OCWD 2025) is depicted on

Figure 3-2 of the *Los Angeles to Anaheim Project Section Supplement to the Hazardous Materials and Wastes Technical Report* (Authority 2025c), and is beneath some of the project alignment and the Fullerton HSR Station Option footprint (OCWD 2025).

A limited number of groundwater monitoring wells have been installed by the Orange County Water District to characterize groundwater in the project area, but are not intended to characterize groundwater contamination throughout the full extent of the Superfund site. The Orange County Water District completed a remedial investigation report for its project area and a feasibility study report is currently in review with USEPA. Following completion of the feasibility study report, USEPA will prepare a proposed remedial action plan for an interim remedy and host a public meeting to inform the public of the proposed plan. For the overall Superfund site, USEPA completed the first phase of the comprehensive site-wide remedial investigation and feasibility study, which involved the installation of additional monitoring wells to further characterize the entire site. A report on the sampling was completed November 6, 2024.

DTSC and the Santa Ana RWQCB continue to actively initiate and oversee facility-led investigation and cleanup of surface contamination (soil and shallow groundwater) at several of the facilities identified as possible contributors to the plume. Among the multiple industrial sites within the North Basin area that appear to have contributed to the groundwater contamination are two PEC sites listed in Appendix 3.10-A as map ID 155 (Autonetics/Raytheon at 311 S Highland; USEPA ID CAN000900354) and map ID 166 (Fullerton Manufacturing/Raytheon at 310 E Walnut; USEPA ID CAN000900337). Past releases at these locations are likely to have contributed to the Orange County North Basin's groundwater contamination as a result of migration of contaminants from soil at these sites to groundwater and the operators of these sites are defined as "potentially responsible parties" in the National Priorities List support documentation.

Because of the extensive nature of potential impacts associated with the Orange County North Basin site and because groundwater monitoring and site characterization activities are ongoing, a timeline for completion of remediation activities associated with CERCLA and the Hazardous Substance Control Law compliance is currently unknown.

5.10 General Environmental Concerns

Certain hazardous materials/contaminants are common within railroad corridors and facilities associated with, or adjoining, railroad corridors. These materials can be found in ballast/ underlying soil, surface water/groundwater, air, or structures. Such constituents are considered to be harmful to human health or the environment. Potential constituents that may be present within the project section are discussed below.

5.10.1 Lead-Based Paint

Historically, lead was used as a pigment and drying agent in oil-based paint. In 1978, the federal government banned the consumer use of lead-based paint (LBP) (USEPA 2016a). Structures built before 1978 may contain LBP on both interior and exterior architectural surfaces. Additionally, LBP may have been used in commercial/industrial buildings subsequent to 1978, as well as in residential structures (paint purchased prior to 1978 but stored and used in subsequent years). A survey would be required to confirm the presence of LBP surfaces in structures slated for demolition or remodeling. The weathering and maintenance of paint (primarily exterior surfaces) at buildings on or adjoining the project alignment may have resulted in LBP impacts on the Shared Passenger Track Alternative's soils.

5.10.2 Asbestos-Containing Materials

Asbestos is a mineral fiber that was most commonly used prior to 1980 in various building construction materials (e.g., floor tiles, roofing materials, piping, thermal system insulation, mastics) for insulation, strength, and fire-retardant purposes. Such materials may have been used in construction well into the 1980s and 1990s and, because of the possible storage of surplus materials and supplies, could still be used at present day construction sites. Asbestos has also been used in manufactured items such as automobile brakes, heat-resistant fabrics, gaskets, and coatings. When repair, remodeling, or demolition activities damage or disturb asbestos-containing

materials (ACM), microscopic fibers become airborne and can be inhaled into the lungs (USEPA 2016b). A survey would be required to determine whether and where ACM is present in structures slated for demolition or remodeling.

5.10.3 Pesticides

Agricultural activities are commonly associated with the storage, handling, and application of pesticides (and herbicides) on row crops or orchards. Pest control in buildings and urbanized areas is also a common use of pesticide. Additionally, herbicide use to control vegetation is common in and near rail corridors. The routine application of such compounds may not accumulate to soil concentrations requiring regulatory oversight. However, the concentrations of such constituents in soil, and the necessity for remedial activities, are dictated by the planned use(s) of such properties beneath which the pesticides are found. The main areas of concern are handling and storage areas. Pesticides, which also include herbicides, prevent, destroy, repel, or mitigate a pest, or are a plant regulator, defoliant, desiccant, or nitrogen stabilizer (USEPA 2016c). In general, pesticides and herbicides are typically not extremely mobile in soils and are commonly found within approximately 3 feet of the ground surface. In absence of other evidence to the contrary, it is assumed that pesticides and herbicides were applied for their intended purposes in accordance with label directions and therefore do not meet the definition of a hazardous substance release, and are not considered PEC sites with respect to the project section. However, the persistent historical use of pesticides may have caused residual contaminants to be present in the soil, requiring special handling and disposal.

5.10.4 Polychlorinated Biphenyls

PCBs, classified as chlorinated hydrocarbons, were manufactured from 1929 until their production was banned in 1979. PCBs were used in hundreds of industrial and commercial applications because of their nonflammability, chemical stability, high boiling point, and electrical insulating properties. Equipment that might contain PCBs includes electrical transformers and capacitors, motor oil and hydraulic fluid, and thermal insulation material (e.g., fiberglass and felt) and building materials such as sealants, caulks, joint compounds (USEPA 2016d).

5.10.5 Aerially Deposited Lead

Leaded gasoline was used as a vehicle fuel in the United States through the 1980s. Lead emitted from vehicles during this time has adversely affected soils along roadways. The lead resulting from vehicle and industrial activities is termed *aerially deposited lead*. Because the project alignment is within an urbanized setting, numerous roadways and highways exist in the area. Surface and near-surface soils along heavily used roadways have the potential to contain elevated lead concentrations. There is also the potential for aerially deposited lead resulting from historical facility operations in the vicinity of properties identified in Table B-3 (including Exide) and near other properties along the project alignment.

5.10.6 Naturally Occurring Asbestos

Naturally occurring asbestos includes fibrous minerals found in certain types of rock formations (e.g., serpentinite, greenschist). Natural weathering or human disturbance can break naturally occurring asbestos down to microscopic fibers that are suspended easily in air. When airborne asbestos is inhaled, these thin fibers irritate tissues and resist the body's natural defenses. Asbestos causes cancer of the lung and the lining of internal organs, as well as asbestosis and other related diseases. Naturally occurring asbestos is not expected to be encountered during construction activities because the project section is underlain by alluvial soils and outcroppings of bedrock containing asbestos (e.g., serpentinite) are not known to be in proximity to the RSA.

5.10.7 Landfills

Although there are no active landfills in the environmental database review RSA, five Class III sites (nonhazardous solid waste materials) in Los Angeles County and three Class III sites in Orange County would serve the Shared Passenger Track Alternatives' construction and operational demands for disposal of solid wastes. There is also a potential for the presence of

unpermitted historical landfills or otherwise inactive landfills in the vicinity of the project alignment. A list of active landfills that accept Class III is included in Table B-4 (Appendix B). Note that this table only lists Class III landfills with the exception of two facilities that accept Universal Wastes (e.g., batteries, fluorescent bulbs, electronics). Two Class I landfills active in California are Buttonwillow Landfill Facility operated by Clean Harbors and Kettleman Hills Facility operated by Waste Management. These respective Class I landfills accept both hazardous and nonhazardous wastes and are approximately 30 miles west and 80 miles northwest of Bakersfield, which is more than 100 miles north-northwest of the northern terminus of the project at US 101.

5.10.8 Oil and Gas Wells

Most major oil fields in Southern California occur within Cenozoic formations in the vicinity of anticlines and faults. The oil fields were developed in the early 1900s. A review of the CalGEM maps determined that the project alignment traverses the abandoned Union Station (Figures 2 and 3, Appendix F), Bandini (Figures 6 and 7, Appendix F), and the Santa Fe Springs (Figures 11, 12, and 13, Appendix F) oil fields.

According to the database listing for oil and gas wells published by CalGEM's online mapping application (CalGEM 2023a, 2023b), there are 677 oil production wells and associated water flood/disposal wells within 0.25 mile of the project footprint (Table 5-2). An active oil-producing well is described as a well that is being actively used to produce oil. CalGEM well definitions for other well types listed in Table 5-2 are as follows:

- **Idle Well** is any well that for a period of 24 consecutive months has not either produced oil or natural gas, produced water to be used in production stimulation, or been used for enhanced oil recovery, reservoir pressure management, or injection.
- **Plugged and Abandoned:** Plugging and abandonment involves permanently sealing the well with a cement plug to isolate the hydrocarbon-bearing formation from water sources and prevent leakage to the surface.
- **Disposal injection well** means an injection well into which fluid is injected primarily for purposes of disposal rather than enhancing the recovery of hydrocarbons.
- **Waterflood injection well** means an injection well that injects water or water-based liquid into an underground formation for purposes of enhancing the hydrocarbon recovery of producing wells.

Table 5-2 Oil and Water Wells within or Near the Project Alignment

Type of Well		Location (in proximity to the project alignment)		
		Within 0.25 mile	Within 150 feet	Within the footprint
Oil production wells	Oil producing	21	4	0
	Plugged/abandoned	459	63	13
	Idle	132	7	2
	Canceled	5	0	0
Waterflood/disposal wells	Active	39	1	0
	Plugged/abandoned	4	0	0
	Idle	17	4	0
Unspecified/other		0	0	0
	Total	**677**	**79**	**15**

The accuracy of the CalGEM maps is typically within approximately 100 to 200 feet of the actual plotted location. Therefore, a former oil well that is depicted on an adjoining property may, in fact, be within or closer to the project footprint than indicated. Prior to ground-disturbing activities, field observations and additional research would be conducted to find and locate wells within 0.25 mile of the project footprint.

Subsurface methane gas is typically associated with oil exploration activities. Methane gas can migrate upward through faults and improperly abandoned oil wells. The presence of methane gas, as well as hydrogen sulfide gas, should be considered and addressed in areas along the project footprint where current/former oil exploration activities have been documented. The project footprint is above the Union Station oil field, the Bandini oil field, and the Santa Fe Springs oil field.

5.11 Educational Facilities

The Environmental Systems Research Institute geographic information systems database was searched to identify school sites within 0.25 mile of the project footprint. The search indicated that there are 40 educational facilities within 0.25 mile of the project footprint. Specific information associated with the identified school facilities is included in Table B-5. The listed school facility locations are also illustrated on Figures 2 through 25 in Appendix F.

5.12 Wildlands

The project alignment or study area does not cross through the wildland-urban interface or undeveloped hillside areas. Refer to Figures 2 through 25 in Appendix F for detailed locations.

6 PRELIMINARY EFFECTS ANALYSIS

Potential effects are evaluated per NEPA implementing procedures, regulations, and guidance. Refer to Section 4.3, Evaluating Impacts Under NEPA, for more information.

6.1 Introduction

This section describes the environmental consequences related to the storage, use, transport of hazardous materials, and generation, storage, transport, and disposal of hazardous wastes for Shared Passenger Track Alternatives A and B.

6.2 No Project Alternative

Under the No Project Alternative, the proposed project would not be built. Currently known programmed and funded improvements and recent development trends within the project section are anticipated to continue, including operation of the existing regional transportation systems. Other planned and committed projects would be built within the planning horizon for the HSR, which is 2040. These planned improvements and growth initiatives would require the storage, transport, use, and disposal of hazardous materials during construction and operation that would be comparable in type and quantity to similar past and ongoing transportation improvement projects when hazardous materials are present or used in project construction. These future improvements would generate a mix and varying quantities of hazardous wastes based on the magnitude of the improvements and contamination at any given site subject to development. PEC sites identified in the environmental database review RSA are associated with commercial and industrial facilities and uses, and operations and maintenance (O&M) of major highway and railway corridors in the project vicinity. No Project Alternative improvements within those same corridors could compound effects and contamination-related risks associated with these sites.

It is presumed that by 2040, some of the existing PEC sites may have undergone additional investigation and, if necessary, may have undergone remediation under appropriate regulatory agency oversight. However, investigation and remediation of potentially hazardous materials, including contaminated soil or groundwater, may not have occurred under the No Project Alternative, and the potential for future transportation improvements to result in impacts related to hazardous materials at PEC sites would continue. Upsets and accidents related to hazardous materials could occur with continued operation of commercial and industrial facilities or during transportation of hazardous materials, and such upsets and accidents may affect the environment.

Within the RSA, there are existing educational facilities, hospitals, parks, and other places of congregation close to these transportation systems. These facilities could be subjected to risks associated with the routine transport and handling of hazardous materials and wastes and the construction and operation of future transportation system improvements under the No Project Alternative. Based on forecast population growth in the region, existing and future transportation systems (including both highway and conventional rail) would experience more traffic and congestion under the No Project Alternative. A higher level of traffic and congestion would likely increase the risk of accidents and other incidents that could result in the release of hazardous materials or hazardous wastes to the environment and threaten or affect these facilities either directly (e.g., causing a structure fire) or indirectly (e.g., contaminating a potable water source).

6.3 Shared Passenger Track Alternatives

This section evaluates potential direct and indirect effects that would result from project construction and operation. Construction activities would require the temporary storage and use of hazardous materials (e.g., cleaning solvents), as well as the transport and disposal of both hazardous materials and wastes (e.g., waste oils), such as:

- Substances commonly used at construction sites, such as diesel fuel, welding materials, lubricants, paints, solvents, and cement products

- Waste materials generated during earthmoving, such as drilling fluids, and/or groundwater removed by dewatering
- Waste materials generated through the demolition of structures, such as ACM, LBP, and PCBs
- Existing soil or groundwater contaminated by volatile organic compounds, petroleum hydrocarbons, aerially deposited lead, pesticides, herbicides, asbestos, heavy metals, or other hazardous materials or wastes

Exposure to such materials during demolition and excavation and through accident conditions, spills, or mishandling could affect the health of construction workers and potentially people near the construction zone and the human environment.

Implementation of best management practices (BMP) (e.g., proper storage and containment) and compliance with regulations set forth to limit the potential for an accidental spill of hazardous materials would reduce the potential for negative environmental effects. Long-term storage and use of hazardous materials (e.g., routine use and disposal of hazardous materials and waste for HSR system operation and maintenance at a heavy maintenance facility) would be governed by state and local regulations that prescribe the proper use and disposal of such materials. Controls for work at contaminated or potential contaminated sites would also reduce the potential for negative effects on human health and the environment.

6.3.1 Shared Passenger Track Alternative A

6.3.1.1 Impact 1: Transport, Use, or Disposal of Hazardous Materials and Hazardous Wastes

Construction

Construction activities would temporarily introduce new hazardous materials (e.g., solvents) not currently present, used, or stored in the vicinity of staging areas and construction sites. This increase in the regional transport, use, storage, and disposal of hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paint and solvents, cement products containing strong basic or acidic chemicals) would result in a corresponding increase in the potential for inadvertent releases (i.e., spills) and associated environmental and public health and safety risks. These materials are commonly used at construction sites, and several BMPs have been developed to minimize and offset associated risks (e.g., requirements associated with storage, secondary containment, and supply chain management). Additionally, impact avoidance and minimization features (IAMF) are included as a part of the Shared Passenger Track Alternatives and establish conformance with state and federal regulations related to the transport of hazardous materials and SWRCB Construction General Permit conditions. Specifically, **HMW-IAMF#7, Storage and Transport of Materials**, to be incorporated prior to construction, establishes requirements for compliance with federal and state regulations during the storage and transport of hazardous materials. Transport and disposal requirements for such materials are clearly defined and aggressively regulated.

Similarly, hazardous wastes generated during construction would both increase in quantity (relative to existing local conditions) and would likely include waste streams not currently present or managed in the vicinity of staging areas and construction sites. Hazardous wastes likely to be generated during construction would consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals. Hazardous waste might also be generated during demolition (e.g., ACM, PCBs, and LBP in buildings scheduled for razing to clear land necessary to support staging and construction). Transport and disposal requirements for such wastes are clearly defined and enforced.

Construction activities involving inherent use of hazardous materials such as metal work/welding, vehicle and equipment maintenance, and use/storage/dispensing of fuel generate risks of fire that would have direct and indirect effects, such as:

- **Urban fire risk – direct and indirect:** hazardous materials or wastes igniting and resulting in fires within urban structures (e.g., buildings, roads, bridges). Fires could also adversely affect local transportation systems (e.g., fires jumping freeways and creating adverse public safety conditions)
- **Hazardous air pollutants:** fires release several hazardous air pollutants (e.g., nitrogen dioxide and polycyclic aromatic hydrocarbons) and can create additional airborne toxins, including lead and arsenic. Smoke from fires can contain these pollutants in the immediate vicinity and miles downwind.

Risks associated with hazardous materials and hazardous wastes are exacerbated when construction activities occur in proximity to sensitive receptors such as residential areas, educational facilities, hospitals, parks, playgrounds, clinics, and other locations where people are known to congregate. Based on early evaluations, there are 40 educational facilities in the project vicinity. Also of concern would be proximity to waters of the state, waters of the U.S., or sensitive habitat/species (e.g., Los Angeles River, Rio Hondo).

Compliance with applicable laws for safe storage, transport, and use of hazardous materials is required per **HMW-IAMF#7**. Additionally, contractors will develop hazardous materials plans per **HMW-IAMF#10, Hazardous Materials Plans**, and will be required to comply with the conditions of the SWRCB Construction General Permit to control the storage and use of hazardous materials during construction (**HMW-IAMF#8, Permit Conditions**, and **HYD-IAMF#3, Prepare and Implement a Construction Stormwater Pollution Prevention Plan [SWPPP]**) in a manner that eliminates or reduces—to the maximum extent feasible—discharges of potential hazardous pollutants to stormwater. Contractors will also be required to prepare a spill prevention plans, including spill prevention, control, and countermeasure (SPCC) plans, for managing storage of hazardous materials (**HMW-IAMF#6, Spill Prevention**). Small spills will be managed in accordance with these plans, with training provided to each individual prior to their work with hazardous materials and the appropriate types and amounts of spill cleanup materials and personal protective equipment immediately available as required by the State of California per the Hazardous Waste Control Law (California Health and Safety Code, Section 25100 et seq.). Additionally, CUPAs (Section 3.2, State) provide for the proper storage and management of hazardous materials, as well as for managing accidental spills and leaks; enforcement of these regulations prevents releases of hazardous materials to the environment. Examples of practices required per these IAMFs include storing hazardous materials in containers that are in good condition and not leaking; keeping containers closed except when adding or removing hazardous materials; locating hazardous materials storage and handling areas away from natural watercourses, storm drains, and sensitive receptors; and promptly cleaning up accidental spills of hazardous materials. Following mandated BMPs would effectively minimize direct risk to workers and the public as well as indirect risk to off-site resources because they prevent or require quick response to spills or accidental releases of hazardous materials during construction. The Authority is committed to identifying, avoiding, and minimizing hazardous materials used the during construction of the HSR system through a material selection process integrated into the project design (**HMW-IAMF#9, Environmental Management System**). An Environmental Management System will be used to track the full inventory of hazardous materials during construction of the HSR system and requires contractors to evaluate and substitute hazardous materials with nonhazardous materials when practicable.

The risks of exposure to hazardous materials would also temporarily increase during construction on sites with contaminated soil, soil vapor, and groundwater, as well as contamination from soil in airborne dust generated during excavation and during demolition of buildings with ACM, LBP, and PCBs. Requirements for safely handling contaminated soils and other contaminated media will be specified in a Construction Management Plan (CMP) based on an Authority-prepared soil management plan that would identify known or suspected contamination (**HMW-IAMF#4, Known, Suspected, and Unanticipated Environmental Contamination**) in addition to the IAMFs described above (**HMW-IAMF#7**, **HMW-IAMF#8**, **HYD-IAMF#3**) that will limit discharges of contaminants to the environment via BMPs. In addition, the Occupational Safety and Health Administration (29 CFR Part 1910.120 and California Code of Regulations Title 8, Section 5192)

requires training for workers engaged on cleanup sites, which serves to reduce hazards to workers by mandating hazard identification, monitoring, and implementation of hazard controls, including personal protective equipment. **HMW-IAMF#5, Demolition Plans**, requires demolition plans for safe dismantling and disposal of hazardous building components and debris.

Operation

Operations would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners for and generation of wastes from O&M of the LMF, tracks, stations, and railroad right-of-way as well as other systems required for HSR operations such as power systems, train control, signalizing, and communications. Operating trains would generate brake dust. However, dust would be primarily limited to track ballast areas. Additionally, **HYD-IAMF#1, Stormwater Management**, will help minimize the potential impacts associated with the release of hazardous brake dust. Pervious areas, biofiltration devices, infiltration devices, and media filters as part of **HYD-IAMF#1** are capable of removing both particulate and dissolved metals from runoff. Brake dust that flows through these stormwater treatment measures would be filtered out. Therefore, the use of hazardous materials and generation of hazardous waste would be limited mostly to the maintenance and repair of trains. Additionally, operations will require proper management of hazardous materials routinely used through development of an Environmental Management System pursuant to **HMW-IAMF#9**, which will annually replace new state- and federally listed hazardous materials with nonhazardous materials.

HMW-IAMF#7 requires the Authority to handle hazardous materials in compliance with applicable state and federal regulations during O&M activities, as described in Chapter 3, Laws, Regulations, and Orders. These regulations will apply throughout the project alignment and for any applicable transportation activities to avoid and prevent accidental release of hazardous materials during routine transport, storage, use, or disposal.

Prior to O&M activities, the Authority will prepare hazardous materials monitoring plans, pursuant to **HMW-IAMF#10**. Preparation of and compliance with these plans would minimize the potential for effects from hazardous materials used during O&M of Shared Passenger Track Alternative A.

Effects associated with project O&M would largely be a function of the size, location, and usage (frequency and type of activity) of hazardous materials and generation of hazardous waste as part of general O&M activities. As discussed for construction activities, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of sites associated with HSR tracks and crossings. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary. In addition to workers using appropriate personal protective equipment during project implementation, Safety Data Sheets for hazardous materials and hazardous wastes stored and used during standard O&M activities would be maintained on site, and details of health hazards and risks would be readily available. Workers would be appropriately trained to keep them up to date on Safety Data Sheets and O&M equipment to reduce risks of handling hazardous materials and waste, in accordance with state and local requirements.

6.3.1.2 Impact 2: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

Construction

The risk of upset and related potential for accidental release of hazardous materials and hazardous wastes into the environment would be directly related to the vigilance of construction crews and contractors and their ability to appropriately manage the transport, storage, use, and disposal of these materials. Potential effects (e.g., fire, environmental/ecological damage) would be similar to those described for Impact 1.

It is anticipated that more quantitative modeling may be conducted during the development of the project. Potential high-risk scenarios may be evaluated via the completion of a Human Health Rick Assessment or an Ecological Risk Assessment, both of which would include a discussion of

risks associated with hazardous materials and hazardous wastes, as well as other risk factors that have the potential to adversely affect the health of human populations and other ecosystems.

Various IAMFs will be incorporated as part of the project design, including **HMW-IAMF#4** and **GEO-IAMF#3, Gas Monitoring**, which require the preparation of a CMP to minimize releases of hazardous materials or disruption of contaminated areas, to provide protocols for the disturbance and handling of unanticipated contamination and to address implementation of gas monitoring during construction; **HMW-IAMF#6**, which includes the preparation of an SPCC plan that introduces BMPs to prevent hazardous materials releases (including cleanup procedures should a release occur); **HYD-IAMF#3**, which will avoid release of hazardous materials in stormwater flow by requiring that the contractor prepare and implement a construction SWPPP; **HMW-IAMF#7**, which requires compliance with applicable regulations during construction; **HMW-IAMF#8**, which requires compliance with applicable permit requirements; and **HMW-IAMF#9**, which requires the Authority to identify, avoid, and minimize hazardous materials to the extent feasible and thereby minimizes the effect of an accidental release of hazardous materials. In addition, BMPs for hazardous materials storage and handling will be followed, procedures for spill prevention will be in place prior to construction, and the full inventory of hazardous materials in use during construction of the Shared Passenger Track Alternatives will be available to first responders.

Other IAMFs will reduce risks associated with excavation, storage, transport, and release of contaminants or contaminated media during construction: **HMW-IAMF#1, Property Acquisition Phase I and Phase II ESAs, Additional Preconstruction Investigations, and Associated Actions to Control Site Contamination**; **GEO-IAMF#1, Geologic Hazards**; and **HYD-IAMF#1**. **HMW-IAMF#1** reduces the potential for exposure to contaminated media by requiring ESAs prior to construction and during the right-of-way acquisition phase. **GEO-IAMF#1** reduces the risk of contaminant release caused by erosion or airborne dust generation into the environment, and **HYD-IAMF#1** reduces the risk of contaminant releases as a result of leaks and spills by requiring implementation of a SWPPP during construction.

Operation

Effects related to accidental releases of hazardous materials and wastes associated with the HSR project would be a function of the size, location, and usage (frequency and type of activity) of hazardous materials and generated of hazardous waste during general O&M activities. As discussed under Impact 1, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of sites associated with HSR tracks and crossings. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary.

The design of the project includes measures (**HMW-IAMF#10**) to minimize the risk of accidental releases of hazardous materials during operations, including a requirement to develop a Hazardous Materials Business Plan and SPCC plan for long-term operations. The SPCC plan for long-term operations will identify emergency contact information in the event of a release, site-specific chemical inventories, and vicinity and facility maps (the SPCC plan applies to materials including oil or oil products, such as diesel fuel, gasoline, lube oil, and hydraulic oil). This information will allow emergency responders to more quickly and adequately respond in the event of an inadvertent release of hazardous materials and minimize effects of exposure to humans and the environment. In addition, the Authority is committed to minimizing the use of hazardous materials through the material selection process and the use of an Environmental Management System to track the full inventory of hazardous materials used for O&M with **HMW-IAMF#9**. **HMW-IAMF#7**, which requires compliance with established state and federal regulations during O&M activities, requires proper handling of materials and wastes to prevent accidental releases and spillage or minimize impacts of such releases should they occur. With incorporation of these measures, the risks of upsets and accident conditions will be limited.

6.3.1.3 Impact 3: Inadvertent Disturbance of Unknown Hazardous Materials and Waste

Construction

During construction, trenching and other ground-disturbing activities could encounter or disturb previously undocumented soil or groundwater contamination within the project section. Impacts can also occur through the inadvertent dispersal of affected media into the environment. Dewatering activities at a site containing previously undocumented contamination, for example, may result in the release of contamination currently contained in groundwater into nearby waterways or farther in the groundwater table. Construction activities may also disturb ACM during demolition of roadways or other structures built prior to 1980 or potentially during the 1990s, resulting in the airborne release of asbestos fibers. Building demolition would increase the potential risk related to release of airborne asbestos fibers. Also, ACM, PCBs, and lead could be encountered during demolition of other structures or roadway modifications in yellow tape or paint as well as lead in soils along roadways. PCBs could be encountered during the handling of utility infrastructure. Track modifications could disturb wood preservatives, heavy metals, and ACM in ties, ballast rock, and soils, because these materials are common in railroad corridors. These types of materials, if encountered, would need to be cleaned up, transported, and disposed of at a Class I/II facility.

Compliance with regulations that control the transport, use, storage, and disposal of hazardous materials will limit the potential for an inadvertent release of hazardous materials during construction as part of the project design (**HMW-IAMF#7**), as described in Impact 1.

If soil, groundwater, or other environmental media with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining or by unearthing underground storage tanks, abandoned drums, or other hazardous materials or wastes), work will cease in the vicinity of the suspect material, the area will be secured as necessary, and appropriate measures will be taken to protect human health and the environment per the CMP. Appropriate measures include notifying regulatory agencies (the contractor would notify the Authority and the Authority would notify the appropriate agency if contamination is discovered) and complying with relevant agencies' laws, regulations, and policies. As part of **HMW-IAMF#4**, the Authority will work with these agencies if undocumented contamination is encountered during construction. These provisions would minimize the potential for hazardous materials to be released into the environment as a result of inadvertent disturbance of undocumented contamination. Project design also includes **HMW-IAMF#5**, which outlines measures intended to ensure the safe dismantling and removal of roadway components or other structures and debris and prevents the accidental release of PCBs, lead, and asbestos, thereby protecting workers and the public from potential exposure to hazardous materials during demolition and preventing discharge of these materials to the environment.

Operation

Effects related to inadvertent disturbance of hazardous materials and wastes associated with the HSR project would not occur because O&M would not inadvertently disturb previously undocumented contamination because no ground disturbance is proposed during O&M.

6.3.1.4 Impact 4: Construction Within or Near Sites of Potential Environmental Concern

Construction of Shared Passenger Track Alternative A would occur near 305 PEC sites (refer to Appendix B). Of these facilities, 300 properties were classified into one of three categories: A, B and C. 73 for Category A and 208 for Category B (high and medium priority, respectively), and 19 Category C (Appendix B) within 150 feet of the project footprint are listed as active (8) or historical (76) on the Cortese List. In addition to the 300 PEC sites listed as Category A, B, and C, 5 more PEC sites (property identification numbers 352 and 354 through 357 [one Category High, two Category Medium, and two Category Low]) were taken from and categorized consistently with the Burbank to Los Angeles Project Section EIR/EIS. Risks associated with construction

within or near sites with contamination include direct and indirect exposure of the workforce and local sensitive receptors to contaminants, the potential to exacerbate or spread existing environmental contamination, and the creation of environmental contamination via incidental mobilization of unknown or contained environmental contamination (e.g., nonleaking USTs).

As part of the project design, during property acquisition for project construction, a Phase I ESA corridor study will be conducted to characterize the properties in the project section proposed for acquisition, and other properties within on-site contamination that can affect the project to be incorporated into project plans before construction activities begin (**HMW-IAMF#1**). The Phase I ESA would be conducted for all properties, regardless of the PEC site category (A, B, or C), but would be especially critical for those characterized as Categories A and B, because they are the most likely to result in recognized environmental conditions and thereby potential impacts during construction. The Phase I ESA corridor study will be conducted per ASTM International standards with parcel-level details, and a written report will present results, conclusions, and recommendations. Additional phases of ESAs could be conducted, depending on the findings of the initial Phase I ESA:

- Phase II. If the Phase I ESA uncovers potential for contamination, a Phase II ESA that includes site testing will be required. Site testing may include testing of soil, groundwater, or other potentially contaminated media. A written report will be prepared to describe:
  - The origin of the contamination (e.g., historical use of the site)
  - The nature of the contaminants (i.e., contaminants of concern) and the resources contaminated (e.g., soil, groundwater, surface water)
  - The depth to contamination relative to depths required for trenching or other invasive site preparation activities
  - The extent of contamination, if detected (e.g., the distance from the outermost known reach of contamination to the boundary of proposed construction activities)
  - Screening levels, data gaps, and recommendations for contaminants of concern
- Phase III. If the Phase II ESA concludes that the site is contaminated, a Phase III ESA will be prepared. A Phase III ESA will describe the design and implementation of required mitigation or remediation measures. Remediation could include excavation, bioremediation, or other measures required to clean up the site.

Because of the potential for off-site migration of contaminants, PEC sites outside the project footprint could pose potential risks of exposure to contaminants for construction workers, the public, or the environment in the vicinity of the site. Construction crews may encounter soil and soil vapor affected by contaminants and may work in areas with existing vapor barriers, wells, and associated infrastructure that may be damaged during construction (**HMW-IAMF#3**). Interference with ongoing remediation activities could interrupt cleanup, increase the risk of a release of contaminants, and adversely affect groundwater treatment system operation, and consequently affect the public water supply. It may be feasible to avoid disturbing contaminants during construction on most off-site PEC sites by following the stipulations in the CMP prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, which would incorporate information (including the review of existing documents for known contamination, extent of contamination, contaminants, and land use restriction requirements) regarding known and suspected contamination and includes requirements for protection of human health and the environment to be implemented on sites that maybe contaminated. Work at PEC sites (including sites subject to cleanup) would require coordination with regulatory agencies such as DTSC before construction could advance. Project construction activities close to PEC sites may require disturbance of existing or potential contamination. Activities involving track construction would only disturb shallow soils, and activities involving construction at larger project features, such as stations and grade separations, would require substantial soil disturbance.

Depending on the nature, extent, and duration of project activities (e.g., the need for subsurface ground disturbance, the extent and type of contamination), requirements for building at PEC sites

could include further evaluation of the level of contamination and associated potential risks to human health (including risks to children in nearby educational facilities and other sensitive receptors) and the environment, as well as site remediation. ESA reports would detail specific parcels with observed and measured contamination to be incorporated into project design.

Two PEC sites warranting listing on the National Priorities List would be disturbed and developed as part of project construction. These two sites are the Orange County North Basin Superfund site (groundwater plume covering approximately 8 square miles that overlaps with portions of the project alignment) and Exide site in Vernon (located where the 26th Street LMF would be built), proposed for listing as a Superfund site.[12] These two sites present potentially extensive impacts because of the nature of their contamination, lack of full characterization, and complexity of remedial approaches.

For additional details, including contaminants of concern, documented extent of contaminants, and current environmental status related to the Exide and Orange County North Basin sites, refer to Section 5.9. Groundwater monitoring and site characterization to delineate the respective boundaries of these Superfund sites are currently ongoing and being performed under oversight of DTSC and USEPA. The potential extent of impacts associated with the Superfund sites and remediation completion are currently unknown.

LMF construction under Shared Passenger Track Alternative A would involve construction of several support buildings, as well as water storage, power supply, and stormwater treatment infrastructure on the Exide site in Vernon. Under Shared Passenger Track Alternative A, the entire Exide property would be developed for construction of the LMF. Most excavation on this property would be shallow (i.e., not expected to encounter groundwater) and be limited to roadway realignment, new tracks, and building foundations, but encountering existing contaminated soil on site is expected.

Only excavation associated within the Fullerton Trench under Shared Passenger Track Alternative A (and Shared Passenger Track Alternative B) near the Fullerton Municipal Airport is expected to encounter groundwater, which is outside the boundary of the Orange County North Basin. Within the Orange County North Basin, earthwork activities in proximity to map ID 155 (potentially one of the responsible parties that contaminated groundwater in the Orange County North Basin) would likely encounter contaminated soil. In lieu of remediating contaminated sites, project design and engineering controls could be implemented to avoid contaminated sites if the extent of the contamination or the logistics of remediation are prohibitive. Engineering controls as part of the project design such as redesigning aboveground spans to avoid contaminated locations could be implemented if the extent of the contamination or the logistics of remediation are prohibitive. Engineering controls as part of the project design such as redesigning aboveground spans to avoid contaminated locations could be implemented and will reduce the potential for exposure to contamination.

For PEC sites subject to remediation, construction activities would be coordinated with remediation activities to avoid damaging or interfering with soil containment, vapor barriers, groundwater remediation infrastructure, or other remedial systems. Protection of existing vapor barriers is required by **HMW-IAMF#3**, and a CMP will be developed in accordance with **HMW-IAMF#4** to address work at contaminated sites and per **GEO-IAMF#3**, for work in underground construction areas and facilities where subsurface gases are present at PEC sites. Monitoring and response protocols for exposure of personnel to constituents of concern will also be included in the CMP, along with procedures for preventing the spreading of contamination and migration of hazardous materials to soil or groundwater. Practices required by **GEO-IAMF#3** will include using safe and explosion-proof equipment during construction and testing for gases regularly. Installation of passive or active gas venting systems, gas collection systems, and active monitoring systems and alarms will be required in underground construction areas and facilities

[12] The Exide site's listing on the National Priorities List has been proposed and is pending.

where subsurface gases are present. Once installed, active monitoring systems will detect if unsafe levels of gas accumulate in construction areas and will establish the effectiveness of gas venting systems.

HMW-IAMF#4 reduces the potential for effects associated with the areas of known contamination and discovery of unanticipated contamination by requiring preparation of a soil management plan prior to completion of 30 percent design and a CMP prior to construction. The soil management plan will include requirements for protection of human health and the environment to be implemented by the Authority-designated construction contractor during construction at sites where contamination is or may be present. The soil management plan will also provide protocols for protection of existing remedial systems and contamination controls where construction could damage such systems, thereby minimizing potential unanticipated releases. The CMP requires the development and implementation of site-specific health and safety protocols that address potential site hazards in compliance with California Division of Occupational Safety and Health regulations for handling contaminated media. Discovery of contamination may require oversight by the applicable regulator to ensure sufficient cleanup processes are implemented.

In addition, per **HMW-IAMF#6**, procedures for spill prevention at PEC sites will be addressed in the CMP, which will require handling and storing containers and drums in a manner that prevents spills; secondary containment for hazardous liquids; and a spill response/containment kit to be maintained on site. Spill prevention would apply to documented contamination as well as discovery of unanticipated contamination. Incorporation of **HMW-IAMF#6** will minimize impacts during construction.

Furthermore, incorporation of **HMW-IAMF#9** includes use of an Environmental Management System and materials selection process that will be employed by the Authority-designated contractor during decontamination or treatment of contaminated media, which will further preclude the spread of contamination from affected PEC sites by reducing the risk of spills or further releases and creation of contaminated media. Therefore, **HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **GEO-IAMF#3** will minimize impacts for most PEC sites. However, because of the extensive nature of potential impacts associated with the two Superfund sites discussed above and because the exact nature of the remediation, specifically the remedy, is not yet known, significant exposure to contaminants associated with these sites could occur during construction of Shared Passenger Track Alternative A. The two Superfund sites are being investigated, monitored, and remediated under the purview of USEPA, DTSC, and the RWQCB and, therefore, construction activities in areas affected by these sites would also require coordination with the applicable oversight agencies. With implementation of **HMW-MM#2, Coordination of HSR Design and Construction with Remediation of Exide Site and Orange County North Basin Superfund Site**, the Authority will be required to coordinate directly with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option. For the Exide site, coordination will include DTSC, USEPA, Los Angeles RWQCB, South Coast Air Quality Management District, and City of Vernon. For the Orange County North Basin Superfund site, these agencies include USEPA, DTSC, Orange County Water District, and Santa Ana RWQCB. **HMW-MM#2** also requires the Authority to engage with public interested parties at specific design milestones. As such, potential controls intended for the protection of human health and the environment and compliance with applicable cleanup requirements would be implemented as necessary.

6.3.1.5 Impact 5: Increased Exposure to Asbestos, Lead, and Polychlorinated Biphenyls as a Result of Building Demolition

Construction

Given the nature of the project section, a demolition program would be required to establish the space needed within the right-of-way to facilitate both staging (e.g., storage of equipment and materials) and construction. Furthermore, considering the history and timeline of development within the project corridor, it is likely that many of the buildings and other facilities that would be demolished would have features and other structural components that are coated in or otherwise

contain asbestos, lead, or PCBs. For example, the inappropriate handling or prolonged exposure to ACM—specifically asbestos fibers—has been linked to mesothelioma and other serious health problems.

If ACM, LBP, and equipment containing PCBs are handled appropriately from removal/demolition through disposal, risks associated with exposure can be successfully minimized and adverse effects can be avoided. To address potential impacts associated with these materials, the Authority will prepare a demolition plan per the project design that will include proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). Incorporation of a hazardous materials and waste plan as part of the project design, including procedures for hazardous waste transport, containment, storage, and disposal (**HMW-IAMF#7**), will also minimize potential health impacts on workers and the public.

Operation

Existing risks associated with ACM, LBP, and PCBs would be addressed during construction. With regard to O&M, risks associated with ACM, LBP, and equipment containing PCBs would be minimal because most modern construction materials anticipated to be involved in the project do not include these materials. Safety Data Sheets for hazardous materials and hazardous wastes stored and used during standard O&M activities would be maintained on site, and details of health hazards and risks would be readily available.

6.3.1.6 Impact 6: Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile (0.40 Kilometer) of an Existing or Proposed School

Construction

Transport and storage of hazardous materials will be consistent with state and federal regulations (**HMW-IAMF#7**), and project design measures and permit conditions for transport, labeling, containment, cover, and other BMPs for storage and handling of hazardous materials during construction will be implemented via **HMW-IAMF#8** as part of the project design. Regulatory and permit requirements will apply near school sites to prevent accidental release of hazardous materials during transport, use, storage, or disposal. In addition, prior to construction, the Authority will prepare a soil management plan and provide it to the contractor to facilitate development of a CMP that addresses spill prevention and a response plan identifying response measures to be deployed in the event of an accidental release with **HMW-IAMF#6**. This plan will prescribe BMPs to prevent hazardous materials releases and to minimize the effect of a release were it to occur. BMPs include measures such as making sure containers used to store hazardous materials are in good condition and not leaking; keeping containers closed except when adding or removing hazardous materials; locating hazardous materials storage and handling areas away from natural watercourses, storm drains, and other sensitive receptors; and following recommended procedures for cleaning up accidental spills. Additionally, the Authority will prepare a demolition plan during project design that would address proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). These measures avoid the potential for an inadvertent release of hazardous materials and minimize the effects should a release occur in proximity to educational facilities. However, these standard procedures would not obviate the potential for the accidental release of an extremely hazardous substance within 0.25 mile of a school (as defined in Section 21151.4 of the California Public Resources Code) in a quantity equal to or greater than the state threshold specified in subdivision (j) of Section 25532 of the Health and Safety Code.

Operation

With regard to O&M, long-term risks associated with the handling of hazardous materials and substances in the vicinity of educational facilities would be relatively minor. Hazardous materials and wastes would be newly introduced and used in the region to support upkeep of the HSR and associated facilities. Compliance with established state and federal regulations during O&M activities through **HMW-IAMF#7** will minimize the potential for improper handling of materials and wastes during routine transport, storage, use, or disposal of hazardous materials and wastes.

Preparation and implementation of a Hazardous Materials Business Plan, SPCC plan, and Environmental Management System will be required. With incorporation of **HMW-IAMF#9** and **HMW-IAMF#10**, there would be limited potential risks that O&M within 0.25 mile of a school could potentially expose students or staff to hazardous materials.

6.3.1.7 Impact 7: Hazardous Material Sites Compiled Pursuant to Government Code Section 65962.5

Construction

Similar to conditions and practices described for Impact 4, there are various procedures established to reduce the potential for construction at sites of known contamination to result in effects on human health or the environment. Refer to the list of IAMFs provided in Chapter 7, Impact Avoidance and Minimization Features, for additional information. Construction at these sites would require prior coordination with and notification of regulatory agencies. Some of the identified contaminated sites would be in areas where construction of the new track and facilities would be elevated (e.g., grade separations). In these areas, if practical, construction could avoid effects on known contaminated sites by building the supporting columns outside of the limits of contamination.

Where construction within contaminated sites cannot be avoided, preconstruction activities would address requirements in coordination with the appropriate regulatory entities and in conformance to established plans. Depending on the nature of project activities (e.g., the need or lack thereof for ground disturbance) and the known extent and type of contamination, requirements for building at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health (e.g., risks to children in nearby educational facilities) and the environment, contamination control specifications, as well as site remediation before construction activities are initiated.

According to the EDR reports (2015a, 2015b, 2015c) queried in support of this technical report, there are 23 sites within the searched area (database search RSA) on the Cortese List with an active cleanup status or land use restrictions, and there are an additional 441 “HIST Cortese” sites in the area (Appendix A). The “HIST Cortese” database is no longer updated by the state as of 2001 and includes many legacy leaking UST sites that have been granted “no further action” status or similar. Of these active and historical Cortese List sites, approximately 84 are potentially within 150 feet of the project footprint; 8 are listed as active sites and 76 are historical ones. Risks associated with construction activities within or near known sites of contamination include direct and indirect exposure of the workforce and local sensitive receptors, the potential to exacerbate or spread existing environmental contamination, and the creation of environmental contamination as a result of incidental effects on previously unknown or currently contained environmental contamination (e.g., nonleaking USTs). Site preparation and construction activities to be implemented at sites of known contamination would require prior coordination with appropriate regulatory agencies (e.g., California Environmental Protection Agency, Los Angeles RWQCB). In locations and under circumstances where effects associated with contaminated sites cannot be avoided, preconstruction activities and site preparation measures would be required to address hazards of building at these sites in coordination with regulatory agencies.

Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1** (Section 7.1). It may be feasible to avoid disturbing contaminants during construction on most off-site Cortese List sites by following the stipulations in the CMP being prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, including those stipulations related to demolition procedures.

Operation

Similar to construction, O&M activities related to the project section would involve certain quantities of hazardous materials and, to a lesser extent, hazardous wastes. Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with

observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1**, rendering the potential disruption or exacerbation of a known or unknown site of contamination during operation to minor levels. Risks related to potential public safety effects with regard to sites of known contamination in the region would be essentially the same as those described for the construction phase. There is also the potential for soil vapor impacts in the vicinity of properties identified in Table B-3 and near other properties along the project alignment. **HMW-IAMF#3** has been identified to minimize impacts from vapor intrusion during long-term operations by requiring the design of vapor barriers and associated venting systems determined to be necessary to prevent intrusion of hazardous concentrations of volatile compounds into occupied project structures (e.g., stations, tunnels), along with review and acceptance by relevant stakeholders and regulatory agencies.

6.3.2 Shared Passenger Track Alternative B

Instead of the development of an LMF at 26th Street (associated with Shared Passenger Track Alternative A), there would be an LMF at 15th Street under Shared Passenger Track Alternative B. Overall, more impacts for Shared Passenger Track Alternative B would occur compared to Shared Passenger Track Alternative A because of the potential for higher contaminated soil volumes. As stated in the *Los Angeles to Anaheim Project Section Supplement to the Hazardous Materials and Wastes Technical Report* (Authority 2025c), Shared Passenger Track Alternative B would have an additional trench segment under Olympic Boulevard, which would account for the higher soil volumes. However, the rest of the analysis would apply to Shared Passenger Track Alternative B and result in similar conclusions.

The potential for the release of, and exposure to, hazardous materials during construction activities, transport, and handling of affected soils would still exist under both alternatives; however, because of the location of the Shared Passenger Track Alternatives in relation to PEC sites, the likelihood of encountering known contaminated soils is higher for Shared Passenger Track Alternative B than for Shared Passenger Track Alternative A (discussed in detail under Impact 4), so the potential volume of contaminated soils that may require disposal at hazardous waste or designated waste facilities would likely be higher under Shared Passenger Track Alternative B.

Therefore, construction of Shared Passenger Track Alternative B would result in more overall impacts from transport, storage, use, and disposal of hazardous materials. However, Shared Passenger Track Alternative A involves more soil disturbance on the Exide property, a proposed Superfund site identified in Section 5.9, which increases the potential severity of contaminated soil likely encountered under Shared Passenger Track Alternative A. Shared Passenger Track Alternative B will incorporate the same IAMFs as Shared Passenger Track Alternative A (**HMW-IAMF#1**, **HMW-IAMF#4**, **HMW-IAMF#5**, **HMW-IAMF#6**, **HMW-IAMF#7**, **HMW-IAMF#8**, **HMW-IAMF#9**, **HMW-IAMF#10**, **GEO-IAMF#1**, **GEO-IAMF#3**, **HYD-IAMF#1**, and **HYD-IAMF#3**), thereby minimizing impacts for Shared Passenger Track Alternative B.

Regarding inadvertent disturbance of hazardous materials, construction of Shared Passenger Track Alternative B could result in additional soil disturbance (compared to Shared Passenger Track Alternative A) because of additional land clearing required for the 15th Street LMF. Although the 26th Street LMF would not be built in Vernon, other project elements would be built in that area, including 26th Street relocation and shifting of freight tracks (these activities require soil disturbance and overlap with the aforementioned Exide Superfund site). The amount of land area disturbed would be greater for Shared Passenger Track Alternative B, so there would be a greater likelihood to encounter and inadvertently disturb undocumented contaminated media. This would be addressed by incorporating the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#4**, **HMW-IAMF#5**, and **HMW-IAMF#7**), thereby minimizing impacts, including for Shared Passenger Track Alternative B, which includes additional soil disturbance.

Shared Passenger Track Alternative B could also potentially release or disturb hazardous materials on or near PEC sites, similar to Shared Passenger Track Alternative A. Analysis of potential environmental impacts from PEC sites within the RSA for the 15th Street LMF indicates a minor to moderate likelihood of encountering hazardous waste–affected soils (compared to a

major likelihood of encountering affected soils under the 26th Street LMF). Under this alternative, none of the proposed excavation on the Exide site or in the boundary of the Orange County North Basin groundwater plume is expected to encounter groundwater.

Impacts associated with the Orange County North Basin and its potentially responsible parties would be the same as under Shared Passenger Track Alternative A. However, although the 26th Street LMF (that traverses the entire Exide site) would not be included under Shared Passenger Track Alternative B, construction associated with Hobart Yard modifications would still occur on a portion of the Exide site, which overlaps the project alignment (map ID 46). In contrast to Shared Passenger Track Alternative A, Shared Passenger Track Alternative B would only involve new tracks and roadway realignment traversing the northern portion of the Exide site, instead of locating LMF support buildings, water storage, power supply, and stormwater treatment infrastructure would be located on this proposed Superfund site. Although potential impacts associated with the Exide parcel would be reduced, Shared Passenger Track Alternative B would still overlap with a portion of the Exide parcel. Therefore, Shared Passenger Track Alternative B will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **GEO-IAMF#3**), which will minimize impacts for most PEC sites. However, construction on the two Superfund sites requires implementation of **HMW-MM#2** to ensure close coordination with the regulatory agencies and the responsible parties on the design of the project alternatives.

Impacts for Shared Passenger Track Alternative B would be similar to those of Shared Passenger Track Alternative A related to hazardous material exposure from building demolition. Although the 26th Street LMF would not be built, the buildings in that area would still be demolished under Shared Passenger Track Alternative B to build other project elements. Additional buildings would be demolished to build the 15th Street LMF; therefore, the amount of demolition waste would be greater for Shared Passenger Track Alternative B, which would increase the possibility of exposure to LBPs and ACMs. Shared Passenger Track Alternative B will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#5** and **HMW-IAMF#7**), which will reduce impacts.

Impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for handling of hazardous materials, including extremely hazardous materials, within 0.25 mile of schools. Shared Passenger Track Alternative B will incorporate the same IAMFs and would implement the same mitigation measures used for Shared Passenger Track Alternative A (**HMW-IAMF#5**, **HMW-IAMF#6**, **HMW-IAMF#7**, **HMW-IAMF#8**, and **HMW-MM#1, Limit Use of Extremely Hazardous Materials Near Schools During Construction**), which will minimize impacts.

Impacts for Shared Passenger Track Alternative B would be similar to those of Shared Passenger Track Alternative A for hazardous materials associated with unknown or undocumented landfill operations and oil and gas wells because not all contamination is known and mapped. Shared Passenger Track Alternative B will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#2, Landfill**; **HMW-IAMF#4**; **HMW-IAMF#6**; **GEO-IAMF#3**; and **SS-IAMF#4, Oil and Gas Wells**), which will minimize impacts.

Operational impacts under Shared Passenger Track Alternative B related to the transport, use, storage, and disposal of hazardous materials; upset and accident conditions; operation or maintenance near PEC sites; and handling of hazardous materials within 0.25 mile of schools would be the same as described for Shared Passenger Track Alternative A. Shared Passenger Track Alternative B will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#1**, **HMW-IAMF#7**, **HMW-IAMF#9**, **HMW-IAMF#10**, and **HYD-IAMF#1**), which will minimize impacts.

6.4 Station Sites

6.4.1 Project Effects

6.4.1.1 Impact 1: Transport, Use, or Disposal of Hazardous Materials and Hazardous Wastes

Construction

Construction activities would temporarily introduce new hazardous materials not currently present, used, or stored in the vicinity of staging areas and construction sites. This increase in the regional transport, use, storage, and disposal of hazardous materials and petroleum products (e.g., lubricants, paint and solvents, cement products containing strong basic or acidic chemicals) would result in a corresponding increase in the potential for inadvertent releases (i.e., spills) and associated environmental and public health and safety risks. These materials are commonly used at construction sites, and several BMPs have been developed to minimize and offset associated risks (e.g., requirements associated with storage, secondary containment, and supply chain management). Additionally, IAMFs are included as a part of Shared Passenger Track Alternatives and establish conformance with state and federal regulations related to the transport of hazardous materials and SWRCB Construction General Permit conditions. Specifically, **HMW-IAMF#7**, to be incorporated prior to construction, establishes requirements for compliance with federal and state regulations during the storage and transport of hazardous materials. Transport and disposal requirements for such materials are clearly defined and aggressively regulated.

Similarly, hazardous wastes generated during construction would both increase in their quantity (relative to existing local conditions) and would likely include waste streams not currently present or managed in the vicinity of staging areas and construction sites. Hazardous wastes likely to be generated during construction would consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals. Hazardous waste might also be generated during demolition (e.g., ACM and LBP in buildings scheduled for razing to clear land necessary to support staging and construction). Transport and disposal requirements for such wastes are clearly defined and aggressively regulated.

Other activities that would inherently generate risk factors include metal work/welding, general construction, vehicle use/maintenance, and use/storage/dispensation of fuel. Examples of risks include but would not be limited to the following:

- **Urban fire risk – direct and indirect:** hazardous materials or wastes igniting and resulting in fires within urban structures (e.g., buildings, roads, bridges). Fires could also adversely affect local transportation systems (e.g., fires jumping freeways and creating adverse public safety conditions)
- **Hazardous air pollutants:** fires release several hazardous air pollutants (e.g., nitrogen dioxide and polycyclic aromatic hydrocarbons) and can create additional airborne toxins, including lead and arsenic. Smoke from fires can contain these pollutants in the immediate vicinity and miles downwind.

Risks associated with hazardous materials and hazardous wastes are exacerbated when construction activities occur in proximity to sensitive receptors such as residential areas, educational facilities, hospitals, parks, playgrounds, clinics, and other locations where people are known to congregate. For example, there are no schools within 0.25 mile of ARTIC, but there are schools near the intermediary stations (refer to Section 6.4.1.6, Impact 6: Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile (0.40 Kilometer) of an Existing or Proposed School). John H. Glen High School is within 0.25 mile of Norwalk/Santa Fe Springs Station and Richman Elementary School, Maple Elementary School, Fullerton First United Methodist Preschool, and Wilshire Avenue Preschool are within 0.25 mile of Fullerton Station. Also of concern would be proximity to sensitive environments such as waters of the state, waters of the U.S., or sensitive habitat/species (e.g., Los Angeles River, Rio Hondo). Construction contractors will prepare hazardous materials plans based on an Authority-prepared soil management plan (including a CMP and SPCC plan) identifying the responsible parties and procedures for

hazardous materials transport, containment, and storage at the construction site (**HMW-IAMF#4**); prepare and implement a construction SWPPP to avoid release of hazardous materials into stormwater flow (**HYD-IAMF#3**); and comply with SWRCB Construction General Permit conditions related to the transport, storage, use, and disposal of hazardous materials (**HMW-IAMF#8**). **HMW-IAMF#5** requires demolition plans for safe dismantling and disposal of hazardous building components and debris. Contractors would also be required to prepare spill prevention plans, including SPCC plans, for managing storage of hazardous materials (**HMW-IAMF#6**) and hazardous materials monitoring plans per **HMW-IAMF#10**. The Construction General Permit regulates potential stormwater discharges (of pollutants) from construction sites and complying with Construction General Permit conditions minimizes or avoids the release of contaminants from construction sites to the maximum extent feasible. The Authority also is committed to identifying, avoiding, and minimizing the transport, storage, use, and disposal of hazardous materials through the material selection process during construction of the HSR system as part of the project design (**HMW-IAMF#9**). An Environmental Management System will track the full inventory of hazardous materials during construction of the HSR system and will substitute hazardous materials with nonhazardous materials when practicable.

Operation

Operations would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners for and generation of wastes from O&M of the stations, as well as other systems required for HSR operations such as power systems, train control, signalizing, and communications. Operating trains would generate brake dust. However, dust would be primarily limited to track ballast areas. Additionally, **HYD-IAMF#1** will help minimize the potential impacts associated with the release of hazardous brake dust. Pervious areas, biofiltration devices, infiltration devices, and media filters as part of **HYD-IAMF#1** are capable of removing both particulate and dissolved metals from runoff. Brake dust that flows through these stormwater treatment measures would be filtered out. Therefore, the use of hazardous materials and generation of hazardous waste would be limited mostly to the maintenance and repair of trains. Additionally, operations will require proper management of hazardous materials routinely used through development of an Environmental Management System pursuant to **HMW-IAMF#9**, which will annually replace new state- and federally listed hazardous materials with nonhazardous materials.

HMW-IAMF#7 requires the Authority to handle hazardous materials in compliance with applicable state and federal regulations during O&M activities, as described in Impact 1. These regulations will apply throughout the project alignment and for any applicable transportation activities to avoid and prevent accidental release of hazardous materials during routine transport, storage, use, or disposal.

Prior to O&M activities, the Authority will prepare hazardous materials monitoring plans, pursuant to **HMW-IAMF#10**. Preparation of and compliance with these plans would minimize the potential for effects from hazardous materials used during O&M.

Effects associated with project O&M would largely be a function of the size, location, and usage (frequency and type of activity) of general O&M activities and the selected station locations. As discussed for construction activities, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of station sites. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary.

6.4.1.2 Impact 2: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

Construction

The risk of upset and related potential for accidental release of hazardous materials and hazardous wastes into the environment would be directly related to the vigilance of construction crews and contractors and their ability to appropriately manage the transport, storage, use, and

disposal of these materials. Potential effects (e.g., fire, environmental/ecological damage) would be similar to those described for Impact 1.

It is anticipated that more quantitative modeling may be conducted during the development of the project. Potential high-risk scenarios may be evaluated via the completion of a Human Health Rick Assessment or an Ecological Risk Assessment, both of which would include a discussion of risks associated with hazardous materials and hazardous wastes, as well as other risk factors that have the potential to adversely affect the health of human populations and other ecosystems.

Various IAMFs will be incorporated as part of the project design, including **HMW-IAMF#4** and **GEO-IAMF#3**, which require the preparation of a CMP to minimize releases of hazardous materials or disruption of contaminated areas, to provide protocols for the disturbance and handling of unanticipated contamination and to address implementation of gas monitoring during construction; **HMW-IAMF#6**, which includes the preparation of an SPCC plan that introduces BMPs to prevent hazardous materials releases (including cleanup procedures should a release occur); **HMW-IAMF#7**, which requires compliance with applicable regulations during construction; **HMW-IAMF#8**, which requires compliance with applicable permit requirements; and **HMW-IAMF#9**, which requires the Authority to identify, avoid, and minimize hazardous materials to the extent feasible and minimize the effect of an accidental release of hazardous materials by ensuring that hazardous materials are transported in compliance with state and federal regulations. In addition, BMPs for hazardous materials storage and handling will be followed, procedures for spill prevention will be in place prior to construction, and the full inventory of hazardous materials in use during construction of the Shared Passenger Track Alternatives will be available to first responders.

Other IAMFs will reduce risks associated with excavation, storage, transport, and release of contaminants or contaminated media during construction: **HMW-IAMF#1, GEO-IAMF#1**, and **HYD-IAMF#1**. **HMW-IAMF#1** reduces the potential for exposure to contaminated media by requiring ESAs prior to construction and during the right-of-way acquisition phase. **GEO-IAMF#1** reduces the risk of contaminant release caused by erosion or airborne dust generation into the environment, and **HYD-IAMF#1** reduces the risk of contaminant releases as a result of leaks and spills by requiring implementation of a SWPPP during construction.

Operation

Effects related to accidental releases of hazardous materials and wastes associated with the HSR stations would be a function of the size, location, and usage (frequency and type of activity) of general O&M activities and the selected station locations. As discussed under Impact 1, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of station sites. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary.

The design of the project includes measures (**HMW-IAMF#10**) to minimize the risk of accidental releases of hazardous materials during operations, including a requirement to develop a Hazardous Materials Business Plan and SPCC plan for long-term operations. The SPCC plan for long-term operations will identify emergency contact information in the event of a release, site-specific chemical inventories, and vicinity and facility maps (the SPCC plan applies to materials including oil or oil products, such as diesel fuel, gasoline, lube oil, and hydraulic oil). This information will allow emergency responders to more quickly and adequately respond in the event of an inadvertent release of hazardous materials and minimize effects of exposure to humans and the environment. In addition, the Authority is committed to minimizing the use of hazardous materials through the material selection process and the use of an Environmental Management System to track the full inventory of hazardous materials used for O&M with **HMW-IAMF#9**. **HMW-IAMF#7**, which requires compliance with established state and federal regulations during O&M activities, requires proper handling of materials and wastes to prevent accidental releases and spillage or minimize impacts of such releases should they occur. With incorporation of these measures, the risks of upsets and accident conditions will be limited.

6.4.1.3 Impact 3: Inadvertent Disturbance of Unknown Hazardous Materials and Waste

Construction

During construction, trenching and other ground-disturbing activities could encounter or disturb previously undocumented soil or groundwater contamination within the project section. Impacts can also occur through the inadvertent dispersal of affected media into the environment. Dewatering activities at a site containing previously undocumented contamination, for example, may result in the release of contamination currently contained in groundwater into nearby waterways or farther in the groundwater table. Construction activities may also disturb ACM during demolition of roadways or other structures built prior to 1980 or potentially during the 1990s, resulting in the airborne release of asbestos fibers. Building demolition would increase the potential risk related to release of airborne asbestos fibers. Also, ACM, PCBs, and lead could be encountered during demolition of other structures or roadway modifications in yellow tape or paint as well as lead in soils along roadways. PCBs could be encountered during the handling of utility infrastructure. Track modifications could disturb wood preservatives, heavy metals, and ACM in ties, ballast rock, and soils, because these materials are common in railroad corridors. These types of materials, if encountered, would need to be cleaned up, transported, and disposed of at a Class I/II facility.

If soil, groundwater, or other environmental media with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining or by unearthing underground storage tanks, abandoned drums, or other hazardous materials or wastes), work will cease in the vicinity of the suspect material, the area will be secured as necessary, and appropriate measures will be taken to protect human health and the environment per the CMP. Appropriate measures include notifying regulatory agencies (the contractor would notify the Authority and the Authority would notify the appropriate agency if contamination is discovered) and complying with relevant agencies' laws, regulations, and policies. As part of **HMW-IAMF#4**, the Authority will work with these agencies if undocumented contamination is encountered during construction. These provisions would minimize the potential for hazardous materials to be released into the environment as a result of inadvertent disturbance of undocumented contamination. Project design also includes **HMW-IAMF#5**, which outlines measures intended to ensure the safe dismantling and removal of roadway components or other structures and debris and prevents the accidental release of PCBs, lead, and asbestos, thereby protecting workers and the public from potential exposure to hazardous materials during demolition and preventing discharge of these materials to the environment. Compliance with regulations that control the transport, use, storage, and disposal of hazardous materials will limit the potential for an inadvertent release of hazardous materials during construction as part of the project design (**HMW-IAMF#7**).

Operation

Effects related to inadvertent disturbance of hazardous materials and wastes associated with the HSR project would not occur because O&M would not inadvertently disturb previously undocumented contamination because no ground disturbance is proposed during O&M.

6.4.1.4 Impact 4: Construction within or Near Sites of Potential Environmental Concern

According to databases queried in support of this technical report, there are eight PEC sites within the station footprint and 150-foot buffer: zero near ARTIC, one within and near Norwalk Station/Santa Fe Springs Station, and five within and near Fullerton Station. Both optional station footprints contain PEC sites. Depending on proposed project activities, such as the need for subsurface ground disturbance, and the known extent and type of contamination, requirements for building at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health (including risks to children in nearby educational facilities) and the environment, as well as site remediation.

There are various established procedures to reduce the potential that construction at PEC sites would result in effects on human health or the environment. Given the previously developed setting of the station locations, it may be feasible for construction to avoid effects on most off-site PEC sites by following the stipulations in general construction, erosion control, and stormwater management permits, and other specific CMPs including demolition, spill prevention, and gas monitoring procedures. Refer to Section 6.3.1.4, Impact 4: Construction Within or Near Sites of Potential Environmental Concern, for more information about the analysis of impacts associated with the Exide parcel and the Orange County North Basin.

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. The construction area for the HSR platform, facilities, and parking would be within a larger area and would include more extensive excavations than what would be modified under the Shared Passenger Track Alternatives. There are two additional PEC sites (map IDs 154 and 155 on Figure 19 of Appendix 3.10-A) within the Fullerton HSR Station Option footprint, compared to the area that would be modified under the Shared Passenger Track Alternatives. One of the PEC sites is listed as Oscar Cleaners (map ID 154) and is categorized as a Category B site with no releases, and the other is listed as Fullerton Manufacturing/Raytheon (map ID 155) and is categorized as a Category A site with contaminant releases to both soil and groundwater. However, these two additional PEC sites are not on the Cortese List. Because the construction area for the Fullerton HSR Station Option is larger and includes more extensive excavations than those required for implementation of the Shared Passenger Track Alternatives (where most excavations would be shallow and limited to roadway realignment, new tracks, and building foundations), there would be greater potential for encountering hazardous wastes from PEC sites.

Where effects on PEC sites cannot be avoided, preconstruction activities would address the requirements for building at PEC sites in coordination with regulatory agencies. Preconstruction activities and site preparation measures would be required to address construction hazards in coordination with regulatory agencies as appropriate, such as CalGEM and the California DTSC, regarding known areas of concern. Depending on the nature, extent, and duration of proposed project activities (e.g., the need for subsurface ground disturbance, the extent and type of contamination), requirements for building at PEC sites could include further evaluation of the level of contamination and associated potential risks to human health (including risks to children in nearby educational facilities and other sensitive receptors) and the environment, as well as site remediation. Subsequent Phase I ESA and Phase II ESA reports for a corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1** (Section 7.1). Cortese List sites are discussed further in Section 6.4.1.7, Impact 7: Hazardous Material Suites Compiled Pursuant to Government Code Section 65962.5. It may be feasible to avoid disturbing contaminants during construction on most off-site PEC sites by following the stipulations in the CMP being prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, including those stipulations related to demolition procedures. The HSR station options will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **GEO-IAMF#3**), which will minimize impacts. Implementation of **HMW-MM#2** would also be required with inclusion of the Fullerton HSR Station Option because construction within the Orange County North Basin Superfund project area would potentially cause a significant hazard associated with encountering hazardous wastes from the site.

6.4.1.5 Impact 5: Increased Exposure to Asbestos, Lead, and Polychlorinated Biphenyls as a Result of Building Demolition

Construction

Given the nature of the proposed project, a demolition program would be required to establish the space needed in the vicinity of the stations' footprints to facilitate both staging (e.g., storage of equipment and materials) and construction. Furthermore, considering the history and timeline of development within the project corridor, it is likely that the buildings and other facilities that would

be demolished would have features and other structural components that are coated in or otherwise contain asbestos, lead, or PCBs. For example, the inappropriate handling or prolonged exposure to ACM—specifically asbestos fibers—has been linked to mesothelioma and other serious health problems.

If ACM, LBP, and equipment containing PCBs are handled appropriately from removal/demolition through disposal, risks associated with exposure can be successfully minimized and adverse effects can be avoided. To address potential impacts associated with these materials, the Authority will prepare a demolition plan per the project design that will include proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). Incorporation of a hazardous materials and waste plan as part of the project design, including procedures for hazardous waste transport, containment, storage, and disposal (**HMW-IAMF#7**), will also minimize potential health impacts on workers and the public.

Operation

With regard to O&M, risks associated with ACM, LBP, and equipment containing PCBs would be minimal, because most modern construction materials anticipated to be involved in the project do not include these materials. Safety Data Sheets for hazardous materials and hazardous wastes stored and used during standard O&M activities would be maintained on site, and details of health hazards and risks would be readily available.

6.4.1.6 Impact 6: Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile (0.40 Kilometer) of an Existing or Proposed School

Construction

Transport of hazardous materials will be consistent with state and federal regulations (**HMW-IAMF#7**), and project design measures and permit conditions for transport, labeling, containment, cover, and other BMPs for storage and handling of hazardous materials during construction will be implemented via **HMW-IAMF#8** as part of the project design. Regulatory and permit requirements will apply near school sites to prevent accidental release of hazardous materials during transport, use, storage, or disposal. In addition, prior to construction, the Authority will prepare a soil management plan and provide it to the contractor to facilitate development of a CMP that addresses spill prevention and a response plan identifying response measures to be deployed in the event of an accidental release with **HMW-IAMF#6**. This plan will prescribe BMPs to prevent hazardous materials releases and to minimize the effect of a release were it to occur. BMPs include measures such as making sure containers used to store hazardous materials are in good condition and not leaking; keeping containers closed except when adding or removing hazardous materials; locating hazardous materials storage and handling areas away from natural watercourses, storm drains, and other sensitive receptors; and following recommended procedures for cleaning up accidental spills. Additionally, the Authority will prepare a demolition plan during project design that would address proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). These measures avoid the potential for an inadvertent release of hazardous materials and minimize the effects should a release occur in proximity to schools. However, these standard procedures would not obviate the potential for the accidental release of an extremely hazardous substance within 0.25 mile of a school (as defined in Section 21151.4 of the California Public Resources Code) in a quantity equal to or greater than the state threshold specified in subdivision (j) of Section 25532 of the Health and Safety Code. There are no schools within 0.25 mile of ARTIC, but there are five schools near the optional stations. John H. Glen High School is within 0.25 mile of Norwalk/Santa Fe Springs Station and Richman Elementary School, Maple Elementary School, Fullerton First United Methodist Preschool, and Wilshire Avenue Preschool are within 0.25 mile of Fullerton Station.

Operation

With regard to O&M, long-term risks associated with the handling of hazardous materials and substances in the vicinity of educational facilities would be relatively minor and be generally

consistent with hazardous materials used for existing railroad operations. O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of HSR stations. Compliance with established state and federal regulations during O&M activities through **HMW-IAMF#7** will minimize the potential for improper handling of materials and wastes during routine transport, storage, use, or disposal of hazardous materials and wastes. Preparation and implementation of a Hazardous Materials Business Plan, SPCC plan, and Environmental Management System will be required. With incorporation of **HMW-IAMF#9** and **HMW-IAMF#10**, there would be limited potential risks that O&M within 0.25 mile of a school could potentially expose students or staff to hazardous materials.

6.4.1.7 Impact 7: Hazardous Material Suites Compiled Pursuant to Government Code Section 65962.5

Construction

Similar to conditions and practices described for Impact 4, there are various procedures established to reduce the potential for construction at sites of known contamination to result in effects on human health or the environment. Construction at these sites would require prior coordination with and notification of regulatory agencies.

Where construction within contaminated sites cannot be avoided, preconstruction activities would address requirements in coordination with the appropriate regulatory entities and in accordance with established plans. Depending on the nature of project activities (e.g., the need or lack thereof for subsurface ground disturbance) and the known extent and type of contamination, requirements for building at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health (e.g., risks to children in nearby educational facilities) and the environment, as well as site remediation before construction activities are initiated.

According to the EDR reports (2015a, 2015b, 2015c) queried in support of this technical report, there is one active PEC site on the Cortese List within the Norwalk/Santa Fe Springs HSR Station Option footprint. This site (map identification number 112; Appendix F, Figure 13) is the Neville Chemical Company, a 6.28-acre property DTSC has been cleaning up since 2006 for the following contaminants of concern: halogenated organic compounds, 2,4-dichlorophenol, and volatile organic compounds. The site has a land use restriction in place and, as of 2023, is undergoing groundwater monitoring. The depth to groundwater in this area is around 100 feet below grade.

Two PEC sites on the Cortese List are within the Fullerton HSR Station Option footprint and neither are on the Cortese List (map identification numbers 160 and 161; Appendix F, Figure 19). Site 160 is listed as Southern California Gas/Fullerton Manufactured Gas Plant – 144 West Walnut Avenue with a *No Further Action* status for a cyanide and metals release to soil. Site 161 is listed as World Citrus West – 130 West Santa Fe and with a *Case Closed* status for a gasoline release to soil.

Risks associated with construction activities within or near known sites of contamination include direct and indirect exposure of the workforce and local sensitive receptors, the potential to exacerbate or spread existing environmental contamination, and the creation of environmental contamination as a result of incidental effects on previously unknown or currently contained environmental contamination (e.g., nonleaking USTs).

Site preparation and construction activities to be implemented at sites of known contamination would require prior coordination with appropriate regulatory agencies (e.g., California Environmental Protection Agency, Los Angeles RWQCB). In locations and under circumstances where effects associated with contaminated sites cannot be avoided, preconstruction activities and site preparation measures would be required to address hazards of building at these sites in coordination with regulatory agencies.

Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans

before construction activities begin, as detailed further in **HMW-IAMF#1** (Section 7.1). It may be feasible to avoid disturbing contaminants during construction on most off-site Cortese List sites by following the stipulations in the CMP being prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, including those stipulations related to demolition procedures.

Operation

Similar to construction, O&M activities related to the project section would involve certain quantities of hazardous materials and, to a lesser extent, hazardous wastes. Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1**, rendering the potential disruption or exacerbation of a known or unknown site of contamination during operation to minor levels. Risks related to potential public safety effects with regard to sites of known contamination in the region would be essentially the same as those described for the construction phase; however, because the relatively small level of invasiveness associated with O&M would render the potential disruption or exacerbation of a known site of contamination to minor levels, risks would be correspondingly reduced when compared to those anticipated during construction activities.

6.5 Maintenance Facility and Freight Yards

Based on the project footprint at the time of this report, there are two options for the Shared Passenger Track Alternatives with the LMF to be in one of two locations in the cities of Los Angeles and Vernon. The LMF for Shared Passenger Track Alternative A, would be a 50-acre Level III facility at 26th Street near Hobart Yard in Vernon. This LMF would hold 24 single trainsets, with a shop building and six tracks, and would require the restriping of BNSF Lot 11 to maintain BNSF operations.

The LMF for Shared Passenger Track Alternative B would be a Level III facility at 15th Street along the west bank of the Los Angeles River in Los Angeles. This LMF would hold 20 single trainsets, with four shop tracks, and would be built to the west of Amtrak's current Eighth Street Yard. Only one LMF would ultimately be needed; however, both alternatives are evaluated below.

6.5.1 Project Effects

6.5.1.1 Impact 1: Transport, Use, or Disposal of Hazardous Materials and Hazardous Wastes

Construction

Construction activities would temporarily introduce new hazardous materials not currently present, used, or stored in the vicinity of staging areas and construction sites. This increase in the regional transport, use, storage, and disposal of hazardous materials and petroleum products (e.g., diesel fuel, lubricants, paint and solvents, cement products containing strong basic or acidic chemicals) would result in a corresponding increase in the potential for inadvertent releases (i.e., spills) and associated environmental and public health and safety risks. These materials are commonly used at construction sites, and several BMPs have been developed to minimize and offset associated risks (e.g., requirements associated with storage, secondary containment, and supply chain management). Additionally, IAMFs are included as a part of the Shared Passenger Track Alternatives and establish conformance with state and federal regulations related to the transport of hazardous materials and SWRCB Construction General Permit conditions. Specifically, **HMW-IAMF#7**, to be incorporated prior to construction, establishes requirements for compliance with federal and state regulations during the storage and transport of hazardous materials. Transport and disposal requirements for such materials are clearly defined and aggressively regulated.

Similarly, hazardous wastes generated during construction would both increase their quantity (relative to existing local conditions) and would likely include waste streams not currently present or managed in the vicinity of staging areas and construction sites. Hazardous wastes likely to be generated during construction would consist of welding materials, fuel and lubricant containers,

paint and solvent containers, and cement products containing strong basic or acidic chemicals. Hazardous waste might also be generated during demolition (e.g., ACM and LBP in buildings scheduled for razing to clear land necessary to support staging and construction). Transport and disposal requirements for such wastes are clearly defined and aggressively regulated.

Other activities that would inherently generate risk factors include metal work/welding, general construction, vehicle use/maintenance, and use/storage/dispensation of fuel. Examples of risks include but would not be limited to the following:

- **Urban fire risk – direct:** hazardous materials or wastes igniting and resulting in fires within urban structures
- **Urban fire risk – indirect:** urban fires that could adversely affect local transportation systems (e.g., fires jumping freeways and creating adverse public safety conditions)
- **Wildland fire risk:** sparks or urban fires spreading to natural areas/corridors, leading to risks and damage to sensitive habitat and species, general environmental damage (e.g., to waterbodies), damage to private property, and other damage.

Risks associated with hazardous materials and hazardous wastes are exacerbated when construction activities occur in proximity to sensitive receptors such as residential areas, educational facilities, hospitals, parks, playgrounds, clinics, and other locations where people are known to congregate. Based on evaluations, there are 40 educational facilities in the project vicinity. No educational facilities are within 0.25 mile of the proposed LMF locations. Also of concern would be proximity to sensitive environments such as waters of the state, waters of the U.S., or sensitive habitat/species (e.g., Los Angeles River, Rio Hondo). Construction contractors will prepare hazardous materials plans based on an Authority-prepared soil management plan (including a CMP and SPCC plan) identifying the responsible parties and procedures for hazardous materials transport, containment, and storage at the construction site (**HMW-IAMF#4**); prepare and implement a construction SWPPP to avoid release of hazardous materials into stormwater flow (**HYD-IAMF#3**); and comply with SWRCB Construction General Permit conditions related to the transport, storage, use, and disposal of hazardous materials (**HMW-IAMF#8**). **HMW-IAMF#5** requires demolition plans for safe dismantling and disposal of hazardous building components and debris. Contractors would also be required to prepare spill prevention plans, including SPCC plans, for managing storage of hazardous materials (**HMW-IAMF#6**) and hazardous materials monitoring plans per **HMW-IAMF#10**. The Construction General Permit regulates potential stormwater discharges (of pollutants) from construction sites and complying with Construction General Permit conditions minimizes or avoids the release of contaminants from construction sites to the maximum extent feasible. The Authority also is committed to identifying, avoiding, and minimizing the transport, storage, use, and disposal of hazardous materials through the material selection process during construction of the HSR system as part of the project design (**HMW-IAMF#9**). An Environmental Management System will track the full inventory of hazardous materials during construction of the HSR system and will substitute hazardous materials with nonhazardous materials when practicable.

Operation

Operations would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners for and generation of wastes from O&M of the LMF, as well as other systems required for HSR operations such as power systems, train control, signalizing, and communications. Operating trains would generate brake dust. However, dust would be primarily limited to track ballast areas. Additionally, **HYD-IAMF#1** will help minimize the potential impacts associated with the release of hazardous brake dust. Pervious areas, biofiltration devices, infiltration devices, and media filters as part of **HYD-IAMF#1** are capable of removing both particulate and dissolved metals from runoff. Brake dust that flows through these stormwater treatment measures would be filtered out. Therefore, the use of hazardous materials and generation of hazardous waste would be limited mostly to the maintenance and repair of trains. Additionally, operations will require proper management of hazardous materials routinely used through development of an Environmental Management System pursuant to **HMW-IAMF#9**,

which will annually replace new state- and federally listed hazardous materials with nonhazardous materials.

HMW-IAMF#7 requires the Authority to handle hazardous materials in compliance with applicable state and federal regulations during O&M activities, as described in Impact 1. These regulations will apply throughout the project alignment and for any applicable transportation activities to avoid and prevent accidental release of hazardous materials during routine transport, storage, use, or disposal.

Prior to O&M activities, the Authority will prepare hazardous materials monitoring plans, pursuant to **HMW-IAMF#10**. Preparation of and compliance with these plans would minimize the potential for effects from hazardous materials used during O&M.

Effects associated with project O&M would largely be a function of the size, location, and usage (frequency and type of activity) of general O&M activities and the selected LMF location. As discussed for construction activities, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of sites associated with the LMFs. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary.

6.5.1.2 Impact 2: Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

Construction

The risk of upset and related potential for accidental release of hazardous materials and hazardous wastes into the environment would be directly related to the vigilance of construction crews and contractors and their ability to appropriately manage the transport, storage, use, and disposal of these materials. Potential effects (e.g., fire, environmental/ecological damage) would be similar to those described for Impact 1.

It is anticipated that more quantitative modeling may be conducted during the development of the project. Potential high-risk scenarios may be evaluated via the completion of a Human Health Rick Assessment or an Ecological Risk Assessment, both of which would include a discussion of risks associated with hazardous materials and hazardous wastes, as well as other risk factors that have the potential to adversely affect the health of human populations and other ecosystems.

Various IAMFs will be incorporated as part of the project design, including **HMW-IAMF#4** and **GEO-IAMF#3**, which require the preparation of a CMP to minimize releases of hazardous materials or disruption of contaminated areas, to provide protocols for the disturbance and handling of unanticipated contamination and to address the implementation of gas monitoring during construction; **HMW-IAMF#6**, which includes the preparation of an SPCC plan that introduces BMPs to prevent hazardous materials releases (including cleanup procedures should a release occur); **HMW-IAMF#7**, which requires compliance with applicable regulations during construction; **HMW-IAMF#8**, which requires compliance with applicable permit requirements; and **HMW-IAMF#9**, which requires the Authority to identify, avoid, and minimize hazardous materials to the extent feasible and minimize the effect of an accidental release of hazardous materials by ensuring that hazardous materials are transported in compliance with state and federal regulations. In addition, BMPs for hazardous materials storage and handling will be followed, procedures for spill prevention will be in place prior to construction, and the full inventory of hazardous materials in use during construction of the Shared Passenger Track Alternatives will be available to first responders.

Other IAMFs will reduce risks associated with excavation, storage, transport, and release of contaminants or contaminated media during construction: **HMW-IAMF#1, GEO-IAMF#1**, and **HYD-IAMF#1**. **HMW-IAMF#1** reduces the potential for exposure to contaminated media by requiring ESAs prior to construction and during the right-of-way acquisition phase. **GEO-IAMF#1** reduces the risk of contaminant release caused by erosion or airborne dust generation into the environment, and **HYD-IAMF#1** reduces the risk of contaminant releases as a result of leaks and spills by requiring implementation of a SWPPP during construction.

Operation

Effects related to accidental releases of hazardous materials and wastes associated with the HSR project would be a function of the size, location, and usage (frequency and type of activity) of general O&M activities and the selected LMF location. As discussed under Impact 1, O&M would potentially introduce new hazardous materials and wastes not currently present, used, or stored in the vicinity of sites associated with the LMFs. A primary difference between construction and O&M is that effects and associated management challenges for O&M would not be temporary.

The design of the project includes measures (**HMW-IAMF#10**) to minimize the risk of accidental releases of hazardous materials during operations, including a requirement to develop a Hazardous Materials Business Plan and SPCC plan for long-term operations. The SPCC plan for long-term operations will identify emergency contact information in the event of a release, site-specific chemical inventories, and vicinity and facility maps (the SPCC plan applies to materials including oil or oil products, such as diesel fuel, gasoline, lube oil, and hydraulic oil). This information will allow emergency responders to more quickly and adequately respond in the event of an inadvertent release of hazardous materials and minimize effects of exposure to humans and the environment. In addition, the Authority is committed to minimizing the use of hazardous materials through the material selection process and the use of an Environmental Management System to track the full inventory of hazardous materials used for O&M with **HMW-IAMF#9**. **HMW-IAMF#7**, which requires compliance with established state and federal regulations during O&M activities, requires proper handling of materials and wastes to prevent accidental releases and spillage or minimize impacts of such releases should they occur. With incorporation of these measures, the risks of upsets and accident conditions will be limited.

6.5.1.3 Impact 3: Inadvertent Disturbance of Unknown Hazardous Materials and Waste

Construction

During construction, trenching and other ground-disturbing activities could encounter or disturb previously undocumented soil or groundwater contamination within the project section, particularly in proximity to the proposed Exide Superfund site in Vernon. Impacts associated with LMF construction can also occur through the inadvertent dispersal of affected media into the environment. Dewatering activities at a site containing previously undocumented contamination, for example, may result in the release of contamination currently contained in groundwater into nearby waterways or farther in the groundwater table. Construction activities may also disturb ACM during demolition of roadways or other structures built prior to 1980 or potentially during the 1990s, resulting in the airborne release of asbestos fibers. Building demolition would increase the potential risk related to release of airborne asbestos fibers. Also, ACM, PCBs, and lead could be encountered during demolition of other structures or roadway modifications in yellow tape or paint as well as lead in soils along roadways. PCBs could be encountered during the handling of utility infrastructure. Track modifications could disturb wood preservatives, heavy metals, and ACM in ties, ballast rock, and soils, because these materials are common in railroad corridors. These types of materials, if encountered, would need to be cleaned up, transported, and disposed of at a Class I/II facility.

If soil, groundwater, or other environmental media with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining or by unearthing underground storage tanks, abandoned drums, or other hazardous materials or wastes), work will cease in the vicinity of the suspect material, the area will be secured as necessary, and appropriate measures will be taken to protect human health and the environment per the CMP. Appropriate measures include notifying regulatory agencies (the contractor would notify the Authority and the Authority would notify the appropriate agency if contamination is discovered) and complying with relevant agencies' laws, regulations, and policies. As part of **HMW-IAMF#4**, the Authority will work with these agencies if undocumented contamination is encountered during construction. These provisions would minimize the potential for hazardous materials to be released into the environment as a result of inadvertent disturbance of

undocumented contamination. Project design also includes **HMW-IAMF#5**, which outlines measures intended to ensure the safe dismantling and removal of roadway components or other structures and debris and prevents the accidental release of PCBs, lead, and asbestos, thereby protecting workers and the public from potential exposure to hazardous materials during demolition and preventing discharge of these materials to the environment. Compliance with regulations that control the transport, use, storage, and disposal of hazardous materials will limit the potential for an inadvertent release of hazardous materials during construction as part of the project design (**HMW-IAMF#7**).

Operation

Effects related to inadvertent disturbance of hazardous materials and wastes associated with the HSR project would not occur because O&M would not inadvertently disturb previously undocumented contamination because no ground disturbance is proposed during O&M.

6.5.1.4 Impact 4: Construction within or Near Sites of Potential Environmental Concern

According to databases queried in support of this technical report, there are 10 PEC sites within 150 feet of the LMFs: 5 near the 26th Street LMF and 5 near the 15th Street LMF. One of these PEC sites is identified as being within the project footprint of the 26th Street LMF and three are within the footprint of the 15th Street LMF. Depending on proposed project activities, such as the need for subsurface ground disturbance, and the known extent and type of contamination, requirements for building at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health (including risks to children in nearby educational facilities) and the environment, as well as site remediation.

There are various established procedures to reduce the potential that construction at PEC sites would result in effects on human health or the environment. Given the previously developed setting of the proposed LMF locations, it may be feasible for construction to avoid effects on most off-site PEC sites by following the stipulations in general construction, erosion control, and stormwater management permits, and other specific CMPs including demolition, spill prevention, and gas monitoring procedures. Refer to Section 6.3.1.4 for more information about the analysis of impacts associated with the Exide parcel and the Orange County North Basin.

Where effects on PEC sites cannot be avoided, preconstruction activities would address the requirements for building at PEC sites in coordination with regulatory agencies. Preconstruction activities and site preparation measures would be required to address construction hazards in coordination with regulatory agencies as appropriate, such as the Department of Conservation's CalGEM and the California DTSC, regarding known areas of concern. Depending on the nature, extent, and duration of proposed project activities (e.g., the need for subsurface ground disturbance, the extent and type of contamination), requirements for building at PEC sites could include further evaluation of the level of contamination and associated potential risks to human health (including risks to children in nearby educational facilities and other sensitive receptors) and the environment, as well as site remediation. Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1** (Chapter 7). Cortese List sites are discussed further under Section 6.5.1.7, Impact 7: Hazardous Material Suites Compiled pursuant to Government Code Section 65962.5. It may be feasible to avoid disturbing contaminants during construction on most off-site PEC sites by following the stipulations in the CMP being prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, including those stipulations related to demolition procedures. The LMFs will incorporate the same IAMFs used for Shared Passenger Track Alternative A (**HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **GEO-IAMF#3**), which will minimize impacts.

6.5.1.5 Impact 5: Increased Exposure to Asbestos, Lead, and Polychlorinated Biphenyls as a Result of Building Demolition

Construction

Given the nature of the proposed project, a demolition program would be required in order to facilitate both staging (e.g., storage of equipment and materials) and construction of the LMFs. Furthermore, considering the history and timeline of development within the LMF sites, it is likely that buildings and other facilities that would be demolished would have features and other structural components that are coated in or otherwise contain asbestos, lead, or PCBs. For example, the inappropriate handling or prolonged exposure to ACM—specifically asbestos fibers—has been linked to mesothelioma and other serious health problems.

If ACM, LBP, and equipment containing PCBs are handled appropriately from removal/demolition through disposal, risks associated with exposure can be successfully minimized and adverse effects can be avoided. To address potential impacts associated with these materials, the Authority will prepare a demolition plan per the project design that will include proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). Incorporation of a hazardous materials and waste plan as part of the project design, including procedures for hazardous waste transport, containment, storage, and disposal (**HMW-IAMF#7**), will also minimize potential health impacts on workers and the public.

Operation

With regard to O&M, risks associated with ACM, LBP, and equipment containing PCBs would be minimal, because most modern construction materials anticipated to be involved in the development of the project do not include these materials. Safety Data Sheets for hazardous materials and hazardous wastes stored and used during standard O&M activities would be maintained on site, and details of health hazards and risks would be readily available.

6.5.1.6 Impact 6: Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile (0.40 Kilometer) of an Existing or Proposed School

Construction

Transport of hazardous materials will be consistent with state and federal regulations (**HMW-IAMF#7**), and project design measures and permit conditions for transport, labeling, containment, cover, and other BMPs for storage and handling of hazardous materials during construction will be implemented via **HMW-IAMF#8** as part of the project design. Regulatory and permit requirements will apply near school sites to prevent accidental release of hazardous materials during transport, use, storage, or disposal. In addition, prior to construction, the Authority will prepare a soil management plan and provide it to the contractor to facilitate development of a CMP that addresses spill prevention and a response plan identifying response measures to be deployed in the event of an accidental release with **HMW-IAMF#6**. This plan will prescribe BMPs to prevent hazardous materials releases and to minimize the effect of a release were it to occur. BMPs include measures such as making sure containers used to store hazardous materials are in good condition and not leaking; keeping containers closed except when adding or removing hazardous materials; locating hazardous materials storage and handling areas away from natural watercourses, storm drains, and other sensitive receptors; and following recommended procedures for cleaning up accidental spills. Additionally, the Authority will prepare a demolition plan during project design that would address proper handling, transport, and disposal of hazardous waste that could result from project demolition (**HMW-IAMF#5**). These measures avoid the potential for an inadvertent release of hazardous materials and minimize the effects should a release occur in proximity to educational facilities. However, these standard procedures would not obviate the potential for the accidental release of an extremely hazardous substance within 0.25 mile of a school (as defined in Section 21151.4 of the California Public Resources Code) in a quantity equal to or greater than the state threshold specified in subdivision (j) of Section 25532 of the Health and Safety Code.

Operation

With regard to O&M, long-term risks associated with the handling of hazardous materials and substances in the vicinity of educational facilities would be relatively minor. Hazardous materials and wastes would be newly introduced and used in the region to support upkeep of the HSR and associated facilities. No educational facilities are within 0.25 mile of the proposed LMFs. Compliance with established state and federal regulations during O&M activities through **HMW-IAMF#7** will minimize the potential for improper handling of materials and wastes during routine transport, storage, use, or disposal of hazardous materials and wastes. Preparation and implementation of a Hazardous Materials Business Plan, SPCC plan, and Environmental Management System will be required. With incorporation of **HMW-IAMF#9** and **HMW-IAMF#10**, there would be limited potential risks that O&M within 0.25 mile of a school could potentially expose students or staff to hazardous materials.

6.5.1.7 Impact 7: Hazardous Material Suites Compiled pursuant to Government Code Section 65962.5

Construction

Similar to conditions and practices described for Impact 4, there are various procedures established to reduce the potential for construction at sites of known contamination to result in effects on human health or the environment. Construction at these sites would require prior coordination with and notification of regulatory agencies.

Where construction within contaminated sites cannot be avoided, preconstruction activities would address requirements in coordination with the appropriate regulatory entities and in accordance with established plans. Depending on the nature of project activities (e.g., the need or lack thereof for subsurface ground disturbance) and the known extent and type of contamination, requirements for building at contaminated sites could include further evaluation of the level of contamination and associated potential risks to human health (e.g., risks to children in nearby educational facilities) and the environment, as well as site remediation before construction activities are initiated.

According to the EDR reports (2015a, 2015b, 2015c) queried in support of this technical report, there are Cortese List sites with an active cleanup status or land use restrictions and “HIST Cortese” sites near the LMF locations (Appendix A). There are no active Cortese List sites in either project footprint; however, one active Cortese List site is within 500 feet of the 15th Street LMF. This site is adjacent to the Amtrak Redondo Junction Facility, a 50-acre property DTSC has been cleaning up since 2003 for the following potential contaminants of concern: petroleum, polynuclear aromatic hydrocarbons, halogenated solvents, waste oil and mixed oil, and volatile organic compounds. There are an additional six “HIST Cortese” sites within 500 feet of the 15th Street LMF location, and three “HIST Cortese” sites within 500 feet of the 26th Street LMF. Risks associated with construction activities within or near known sites of contamination include direct and indirect exposure of the workforce and local sensitive receptors; the potential to exacerbate or spread existing environmental contamination; and the creation of environmental contamination as a result of incidental effects on previously unknown or currently contained environmental contamination (e.g., nonleaking USTs).

Site preparation and construction activities to be implemented at sites of known contamination would require prior coordination with appropriate regulatory agencies (e.g., California Environmental Protection Agency, Los Angeles RWQCB). In locations and under circumstances where effects associated with contaminated sites cannot be avoided, preconstruction activities and site preparation measures would be required to address hazards of building at these sites in coordination with regulatory agencies.

Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1** (Section 7.1). It may be feasible to avoid disturbing contaminants during construction on most off-site Cortese List sites by

following the stipulations in the CMP being prepared as part of **HMW-IAMF#4** and **GEO-IAMF#3**, including those stipulations related to demolition procedures.

Operation

Similar to construction, O&M activities related to the project section would involve certain quantities of hazardous materials and, to a lesser extent, hazardous wastes. Subsequent Phase I ESA and Phase II ESA reports for the corridor study would further detail specific parcels with observed and measured contamination to incorporate into project plans before construction activities begin, as detailed further in **HMW-IAMF#1**, rendering the potential disruption or exacerbation of a known or unknown site of contamination during operation to minor levels. Risks related to potential public safety effects with regard to sites of known contamination in the region would be essentially the same as those described for the construction phase; however, because the relatively small level of invasiveness associated with O&M would render the potential disruption or exacerbation of a known site of contamination to minor levels, risks would be correspondingly reduced when compared to those anticipated during construction activities.

6.6 Electric Power Utility Improvements

6.6.1 Sites with Potential Environmental Concerns

The project effects of electric power utility improvements would be the same as those in Section 6.3, Shared Passenger Track Alternatives, because the improvement locations are within the project footprint.

6.7 Cumulative Effects

Subsequent to this technical report, the Authority would develop the cumulative impacts analysis and present the information in the Draft EIR/EIS. The cumulative effects along the project alignment from development of future projects, in conjunction with the Shared Passenger Track Alternatives, could result in incidental improvement in environmental quality because of the discovery or required remediation of existing soil and groundwater contamination.

7 IMPACT AVOIDANCE AND MINIMIZATION FEATURES

The Shared Passenger Track Alternatives incorporate standardized HSR features to avoid and minimize impacts that are considered part of the project. These features are referred to as IAMFs. The Authority will incorporate IAMFs during project design and construction; therefore, the analysis of impacts of the Shared Passenger Track Alternatives factors in applicable IAMFs. IAMFs applicable to hazardous materials and wastes include the following.

7.1 HMW-IAMF#1: Property Acquisition Phase I and Phase II Environmental Site Assessments, Additional Preconstruction Investigations, and Associated Actions to Control Site Contamination

During the right-of-way acquisition phase, Phase I ESAs will be conducted in accordance with standard ASTM International methodologies, ASTM E 1527-21, or the most recent applicable requirements, to characterize each parcel, including parcels at potential environmental concern sites. Parcels that require a Phase II ESA (e.g., soil, groundwater, soil vapor subsurface investigations) will be identified using information and data obtained in the Phase I ESAs. Phase II and subsequent investigation may require coordination with federal, state, and local agency officials, as well as other stakeholders. Depending on the arrangement negotiated during property acquisition, potential environmental concern sites with known or suspected contamination may be remediated prior to construction on the site. For sites that are not remediated prior to acquisition, data obtained during the Phase I ESA will be used to evaluate the need for and the extent of additional investigation. The Phase II ESA and any additional characterization data collected will be used to inform aspects of detailed project design and actions required during construction and operation of the project to protect human health and the environment from contaminants present on the parcels (e.g., targeted removal of contamination, in-situ treatment, or soil capping). Project design details for construction at sites subject to cleanup or land use controls will be reviewed and approved by appropriate environmental oversight agencies. Design and other corrective actions required to protect human health and the environment will be coordinated with appropriate federal, state, and local agency officials and stakeholders (as necessary) and conducted in full compliance with recorded land use restrictions, applicable state and federal laws and regulations, and local ordinances. Controls necessary to protect workers, the public, and the environment from contamination discovered during the ESAs and preconstruction site investigations will be identified and are required to be implemented during construction in accordance with HMW-IAMF#4.

7.2 HMW-IAMF#2: Landfill

The Authority is committed to ensuring that methane protection measures will be implemented. Prior to construction (any ground-disturbing activities), the Authority-designated contractor will verify to the Authority through preparation of a technical memorandum that methane protection measures will be implemented for all work (including the development of new structures) within 1,000 feet of a landfill, including gas-detection systems and personnel training. This will be undertaken pursuant to State of California Title 27, Environmental Protection – Division 2, Solid Waste, and the hazardous materials BMP plan.

7.3 HMW-IAMF#3: Work and Vapor Barriers

Prior to construction (any ground-disturbing activities), the Authority-designated contractor will verify to the Authority through preparation of a technical memorandum the use of work barriers. Nominal design variances, such as the addition of a plastic barrier beneath the ballast material to limit the potential release of volatile subsurface contaminants, may be implemented in conjunction with site investigation and remediation. Vapor barriers and associated venting systems determined to be necessary to prevent intrusion of hazardous concentrations of volatile compounds into occupied project structures (e.g., stations, tunnels) will be designed in accordance with standard engineering practices and reviewed and accepted by relevant stakeholders and regulatory agencies. Existing vapor barriers for controlling vapor intrusion at PEC sites will be protected during construction and, if damaged, will be repaired or replaced in

accordance with discussions and coordination with relevant stakeholders and regulatory agencies.

7.4 HMW-IAMF#4: Known, Suspected, and Unanticipated Environmental Contamination

The Authority, or its Authority-designated design contractor, prior to completion of 30 percent design, will develop a soil management plan that incorporates information and data regarding known and suspected contamination obtained per HMW-IAMF#1. The plan will include requirements for protection of human health and the environment to be implemented by the Authority-designated construction contractor during construction on sites at which contamination is or may be present. The soil management plan will be reviewed and approved by appropriate agencies with oversight responsibilities for sites subject to cleanup or land use controls and will be provided to the construction Authority-designated contractor, who will be contractually obligated to meet the plan requirements.

Prior to construction, the Authority-designated construction contractor, in accordance with the soil management plan, will prepare a CMP addressing provisions for the disturbance and handling of known, suspected, and unanticipated contamination; and protection of existing remedial systems and contamination controls (e.g., vapor barriers) where construction may affect or damage such systems and controls. The plan requires that an environmental professional provide oversight of activities that may result in encountering known or suspected contamination. The CMP requires the Authority-designated contractor to develop and implement site-specific health and safety protocols that address site hazards in compliance with California Division of Occupational Safety and Health regulations for handling contaminated media, including training of construction workers in hazard recognition and monitoring for hazardous contaminants to which workers may be exposed in areas where contamination is known or suspected based on data obtained under HMW-IAMF#1. Use of field screening equipment will be specified as appropriate based on data obtained under HMW-IAMF#1 (e.g., for volatile organic vapors). The CMP will include specifications for controlling releases of contaminants or contaminated media during construction, including dust control, control of soil erosion and contaminated water runoff, vapor control, and testing and proper storage and disposal of excavated material. The CMP will include an effective monitoring and cleanup program for spills and leaks of any hazardous materials or contaminated media. Requirements for sampling and analysis of media suspected to be contaminated will be included in the CMP.

For work at sites subject to contaminant cleanup, the CMP will be submitted, as required, to regulatory agencies with oversight authority for the cleanup and to stakeholders. The CMPs include requirements for notification by the Authority-designated contractor to the Authority, which will notify appropriate stakeholders and agencies of newly discovered contamination. The Authority will work closely with the stakeholders and regulatory agencies to resolve any such encounters and address necessary cleanup or disposal. Recordkeeping requirements will be specified in the CMP. For operations in areas with known and suspected contamination, the Authority will prepare and implement emergency response procedures that address the unlikely potential of a major hazardous materials release close to or in the vicinity of the project as required by federal, state, and local regulations. The CMP will be submitted to the Authority for review and approval.

Copies of all documentation generated in accordance with the CMP, including monitoring and analytical results, will be provided to the Authority within 30 days of receipt of analytical results or encountering of apparent contaminated media (soil, groundwater, or vapor).

7.5 HMW-IAMF#5: Demolition Plans

Prior to construction that involves demolition, the Authority-designated contractor will prepare demolition plans for the safe dismantling and removal of building components and debris. The demolition plans will include a plan for PCB, lead, and asbestos abatement. The plans will be submitted to the project construction manager on behalf of the Authority for verification that appropriate demolition practices have been followed consistent with federal and state regulations regarding asbestos and lead paint abatement.

7.6 HMW-IAMF#6: Spill Prevention

Prior to construction (any ground-disturbing activities), the Authority-designated contractor will prepare a CMP addressing spill prevention. An SPCC (or spill prevention and response plan if the total aboveground oil storage capacity is less than 1,320 gallons in storage containers greater than or equal to 55 gallons) will prescribe BMPs to follow to prevent hazardous material releases that may occur. Example BMPs would be: all containers are to remain tightly covered unless removing contents/adding to them; drums and other containers are not to be stacked; all containers with liquids are to have secondary containment; and a spill response/containment kit is to be available in the area where hazardous materials are stored. The plans will be prepared and submitted to the project construction manager on behalf of the Authority and will be implemented during construction

7.7 HMW-IAMF#7: Storage and Transport of Materials

During construction and operations, the Authority-designated contractor will comply with applicable state and federal regulations, such as the RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, the Hazardous Materials Transportation Act, and the Hazardous Waste Control Law. Prior to construction and operations, the Authority-designated contractor will provide the Authority with a hazardous materials and waste plan describing responsible parties and procedures for hazardous materials storage and transport.

7.8 HMW-IAMF#8: Permit Conditions

During construction and operation, the Authority-designated contractor will comply with the SWRCB Construction Clean Water Act Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction and operation. Prior to construction and operation, the Authority-designated contractor will provide the Authority with a hazardous materials and waste plan describing responsible parties and procedures for hazardous materials transport, containment, and storage BMPs that will be implemented during construction and operation.

7.9 HMW-IAMF#9: Environmental Management System

To the extent feasible, the Authority is committed to identifying, avoiding, and minimizing hazardous materials in the material selection process for construction, operation, and maintenance of the HSR system. The Authority will use an Environmental Management System to describe the process that will be used to evaluate the full inventory of hazardous materials as defined by federal and state law employed on an annual basis and will replace hazardous materials with nonhazardous materials. The Authority-designated contractor will implement the material substitution recommendation contained in the annual inventory.

7.10 HMW-IAMF#10: Hazardous Materials Plans

Prior to O&M activities, the Authority will prepare hazardous materials monitoring plans. These will use a basis source, such as a hazardous materials business plan as defined in Title 19 California Code of Regulations and an SPCC plan.

7.11 Other Impact Avoidance and Minimization Features

In addition to the IAMFs described above, the following IAMFs are applicable to hazardous materials and wastes, including where these are naturally occurring, as noted. Please refer to applicable technical reports for full descriptions of each IAMF listed below:

- HYD-IAMF#1: Stormwater Management
- HYD-IAMF#3: Prepare and Implement a Construction Stormwater Pollution Prevention Plan
- SS-IAMF#4: Oil and Gas Wells
- GEO-IAMF#1: Geologic Hazards (applies to naturally occurring hazardous materials)
- GEO-IAMF#3: Gas Monitoring (applies to oil and gas field, landfills)

8 EFFECT SUMMARY

8.1 NEPA Effects Summary

The forecast growth in human population and urbanization in the Southern California region would result in increased hazardous materials use and hazardous waste generation, because new materials and wastes would be introduced, transported, stored, used, and disposed of during construction and operation of future infrastructure and development projects. As with any measurable development, these future improvements would involve the use of hazardous materials and would generate hazardous wastes proportional to the magnitude of the development.

8.1.1 Construction

Project construction would result in increased hazardous materials use and waste generation, including ACM and other hazardous building materials that would be encountered during demolition required to enable the development of the Shared Passenger Track Alternatives.

Staging and construction activities could inadvertently disturb sites with previously undocumented contamination or could affect previously identified sites with contaminated soil and groundwater, of which there are 305 PEC sites within the environmental database review RSA. Within the smaller PEC sites RSA, there are 210 PEC sites considered to be close enough to potentially affect the project alignment. Of these 210 PEC sites, there is one listed and one proposed Superfund site. To the extent feasible, project designs should avoid known sites (e.g., by elevating segments of the rail line). Known sites would include any properties with contamination at or above regulatory levels based on a Phase II ESA report, ongoing USEPA remedial actions at a proposed or listed Superfund site, the most recent Superfund Five-Year Review, or other applicable information from the USEPA Superfund Program or applicable regulatory agency (e.g., USEPA, Los Angeles Fire Department, DTSC, SWRCB). Where avoidance is not possible, coordination with regulatory entities, development of response plans, provision of monitors, and other measures would be implemented as appropriate. Impacts related to construction on or near Superfund sites (Orange County North Basin site and the Exide site) would potentially cause a significant hazard to the public or the environment from a release of hazardous materials. Even with implementation of **HMW-MM#2**, impacts would remain adverse.

8.1.2 Operations

With regard to O&M, long-term effects of the Shared Passenger Track Alternatives would be of lesser concern relative to those associated with site preparation and construction activities. Hazardous materials and wastes would be newly introduced and used during upkeep of the HSR and associated facilities.

8.2 CEQA Significance Conclusions

8.2.1 Construction

Similar to the NEPA summary above, project construction would result in increased hazardous materials use and waste generation, including ACM and other hazardous building materials that would be encountered during demolition required to enable the development of the Shared Passenger Track Alternatives.

Staging and construction activities could inadvertently disturb sites with previously undocumented contamination or could affect previously identified sites with contaminated soil, soil vapor, and groundwater, of which there are 210 PEC sites within 150 feet of the project alignment. To the extent feasible, project designs should avoid known sites (e.g., by elevating segments of the rail line). Where avoidance is not possible, coordination with regulatory entities, development of response plans, provision of monitors, and other measures would be implemented as appropriate. Impacts related to construction on or near Superfund sites (Orange County North Basin site and the Exide site) would potentially cause a significant hazard to the public or the

environment from a release of hazardous materials. Even with implementation of **HMW-MM#2**, impacts would remain significant and unavoidable under CEQA.

8.2.2 Operations

Similar to the NEPA summary above, long-term impacts of the Shared Passenger Track Alternatives would be of lesser concern relative to those associated with site preparation and construction activities with regard to O&M. Impacts under CEQA would be less than significant.

Table B-3 (Appendix B) provides details for each site within and adjoining areas of the project limits of disturbance.

9 WASTE DISPOSAL FOR HIGH-SPEED RAIL CONSTRUCTION AND OPERATION

During project construction, various wastes would be generated as a result of structure demolition and soil excavation activities, as described in the *Los Angeles to Anaheim Project Section Supplement to the Hazardous Materials and Wastes Technical Report* (Authority 2025c). Such wastes would include, but not be limited to, demolition debris (e.g., wood, glass, brick, concrete, asphalt, and steel), ACMs, LBP, PCBs, and Universal Wastes (e.g., batteries, fluorescent bulbs, electronics), soil, and groundwater. Section 5.10.7, Landfills, addresses Class I/II and Class III landfills that may be available for the disposal of wastes generated during project construction. Specific landfill information is included in Table B-4 (Appendix B). The landfill types, and wastes accepted, are as follows:

- Class I: hazardous and nonhazardous wastes
- Class II: designated and nonhazardous wastes
- Class III: nonhazardous inert wastes (includes universal/e-waste)

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11 PREPARER QUALIFICATIONS

Project Role	Name, Credential	Qualifications
WSP USA Environment & Infrastructure, Inc.		
Associate Geologist (former WSP employee)	Ana Paine, PG	12 years of experience MS, Environmental Toxicology and BA in Environmental Studies and Earth Sciences, UC Santa Cruz
Senior Environmental Planner	Joseph DeMarco	8 years of experience MPA, Environmental Science and Policy, Columbia University BS, Chemistry, Westmont College
Technical Professional Geologist	Ellen Smith	20 years of experience BS, Geology, Occidental College
QC Reviewer	Aaron Goldschmidt	35 years of experience MA, Geography, UC Santa Barbara
QC Reviewer	Doug McFarling	33 years of experience BA, Environmental Studies, UC Santa Barbara
Senior Associate Geologist (former WSP employee)	Matt Fraychineaud, PG	28 years of experience BS, Engineering Geology, UCLA
ICF		
Debra Einstein Leight	QA/QC Reviewer	23 years of experience B.A., Environmental Analysis and Design, University of California, Irvine
Technical Editor	Saadia Byram	32 years of experience
STV Incorporated		
QA/QC Reviewer	Cade Hobbick, AICP	25 years of experience M.U.P, Planning, University of Kansas, Lawrence B.A. Architectural Studies, B.A. Environmental Studies, University of Kansas, Lawrence
QA/QC Reviewer	Deborah Roberts	17 years of experience MS candidate, Regenerative Studies, California State Polytechnic University, Pomona
QA/QC Reviewer	Doreen Zhao, AICP	9 years of experience M.U.R.P., Urban and Regional Planning, University of California, Los Angeles B.S., Business Management, Arizona State University