

EXHIBIT B (TO ATTACHMENT F): DRAFT RECORD OF DECISION FOR THE PALMDALE TO BURBANK PROJECT SECTION

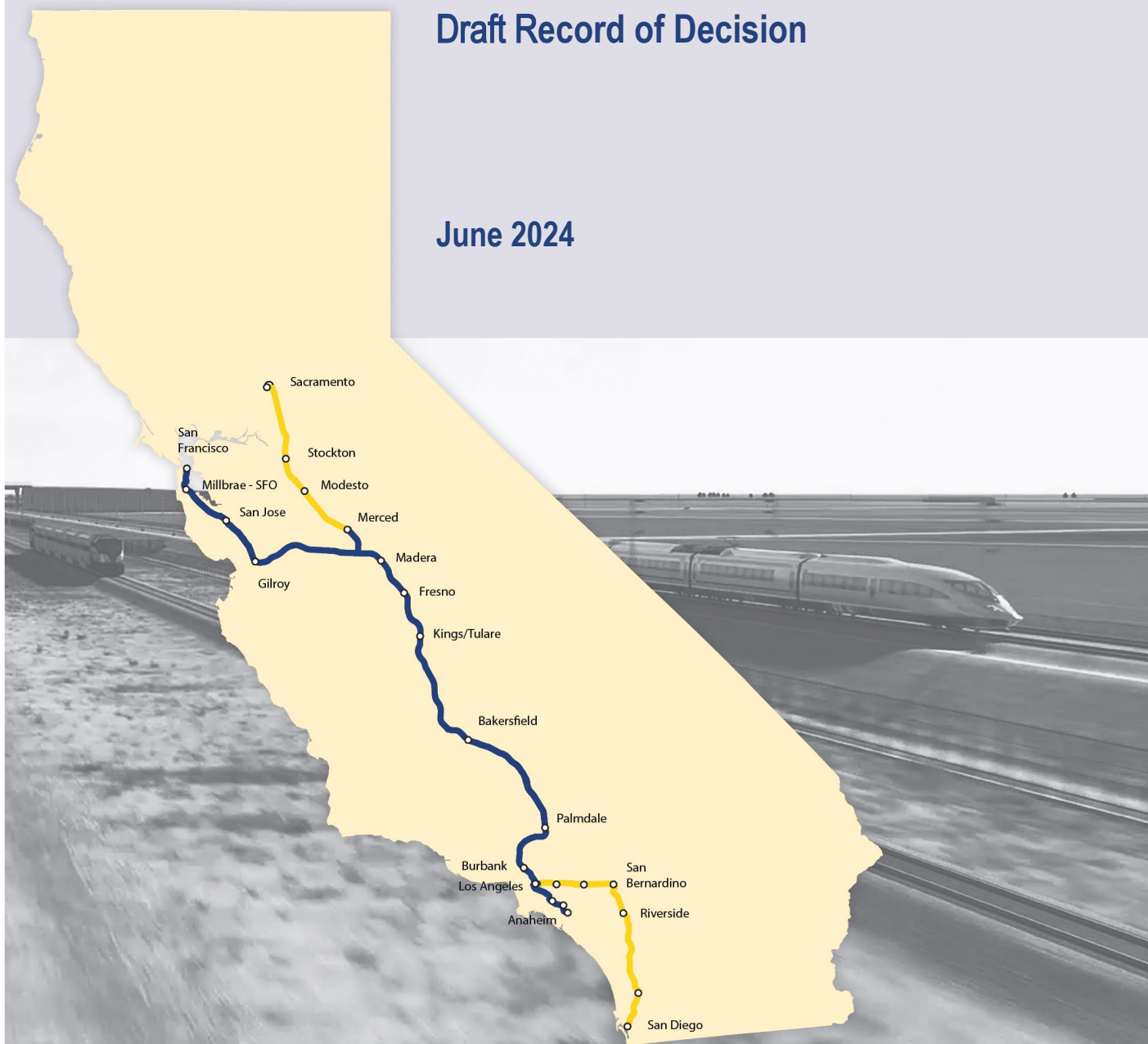
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California High-Speed Rail Authority

Palmdale to Burbank Project Section

Draft Record of Decision

June 2024



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

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ANF	Angeles National Forest
APE	Area of potential effects
Authority	California High-Speed Rail Authority
BA	Biological Assessment
BGPAA	Burbank-Glendale-Pasadena Airport Authority
BLM	United States Bureau of Land Management
BMP	Best management practice
BO	Biological opinion
Caltrans	California Department of Transportation
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
CMF	Central Maintenance Facility
CMP	Construction Management Plan
CO	Carbon monoxide
CWA	Clean Water Act
EIR	Environmental impact report
EIS	Environmental impact statement
EJ	Environmental Justice
EMF/EMI	Electromagnetic Fields/Electromagnetic Interference
FAA	Federal Aviation Administration
FESA	Federal Endangered Species Act
FOE	Finding of Effect
FRA	Federal Railroad Administration
GHG	Greenhouse gas
HSR	High-speed rail
I-5	Interstate 5
IAMF	Impact Avoidance and Minimization Features
KVP	Key Viewpoint
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of Service
MCY	Million cubic yards
MMEP	Mitigation Monitoring and Enforcement Plan

Acronym	Definition
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
OMM	Offsetting Mitigation Measure
PA	Programmatic Agreement
PAA	Preliminary Alternatives Analysis
PCT	Pacific Crest Trail
ROD	Record of Decision
RSA	Resource Study Area
SAA	Supplemental Alternatives Analysis
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SEA	Significant Ecological Area
SFHA	Special Flood Hazard Area
SGMNM	San Gabriel Mountains National Monument
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
SSMP	Safety and Security Management Plan
SSPP	System Safety Program Plan
STB	Surface Transportation Board
TBM	Tunnel boring machine
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDOT	U.S. Department of Transportation
USEO	U.S. Presidential Executive Order
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle miles traveled

CALIFORNIA HIGH-SPEED RAIL AUTHORITY PALMDALE TO BURBANK PROJECT SECTION DRAFT RECORD OF DECISION APPROVAL OF SR14A BUILD ALTERNATIVE

1 INTRODUCTION

This document is the California High-Speed Rail Authority's (Authority) Record of Decision (ROD), under the National Environmental Policy Act (NEPA), for the California High-Speed Rail (HSR) Palmdale to Burbank Project Section (Project Section, or project), which is part of the statewide HSR system. The Authority is the NEPA federal lead agency under what is commonly referred to as NEPA Assignment. More specifically, 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. Code (U.S.C.) Section 327 and a Memorandum of Understanding (MOU) effective July 23, 2019, and executed by the Federal Railroad Administration (FRA) and the State of California (NEPA Assignment MOU) (FRA and State of California 2019). The Authority is also the lead agency for state environmental reviews under the California Environmental Quality Act (CEQA).

This ROD approves the SR14A Build Alternative as described in the *Palmdale to Burbank Project Section Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Final EIR/EIS) dated May 24, 2024 (Authority 2024c) and reaffirms the selection of the Burbank Airport Station Subsection as part of the Selected Alternative. The Palmdale Station was evaluated and approved by the Authority as part of the adjacent Bakersfield to Palmdale Project Section on August 19, 2021, as described in that project's ROD. The Burbank Airport Station was evaluated and approved by the Authority as part of the adjacent Burbank to Los Angeles Project Section on January 20, 2022, as described in that project's ROD. As set forth in this ROD, the SR14A Build Alternative best serves the Purpose and Need for this project and minimizes economic, social, and environmental impacts. It is therefore the Selected Alternative.

The Authority proposes to construct and operate the project after receiving the required approvals from the appropriate federal agencies. These agencies include the federal cooperating agencies—the United States Forest Service (USFS), the U.S. Army Corps of Engineers (USACE), the Surface Transportation Board (STB) and the United States Bureau of Land Management (BLM) and the Federal Aviation Administration (FAA). To the extent practicable, this environmental document will serve as the environmental document for the cooperating and other federal agencies' evaluation of the Authority's proposals for federal agency authorizations. Multiple other federal agencies that are not cooperating agencies have been involved in and have contributed to the environmental review, including the FRA, U.S. Environmental Protection Agency (USEPA), and the U.S. Fish and Wildlife Service (USFWS). Refer to Table 1.1-1 for a list of major milestones related to compliance with NEPA and other federal environmental laws.

To comply with NEPA and CEQA, the Authority issued the *Palmdale to Burbank Project Section Draft Environmental Impact Report/Environmental Impact Statement* (Draft EIR/EIS) for the project on September 2, 2022. Following public review of the Draft EIR/EIS, the Authority considered and responded to public comments; revised the Draft EIR/EIS to address public comments as appropriate; incorporated minor design refinements to further reduce environmental impacts and improve safety; and published the Final EIR/EIS on May 24, 2024. Consistent with 40 Code of Federal Regulations (C.F.R.) Section 1506.2,¹ the Final EIR/EIS is one document that

¹ On April 20, 2022, CEQ issued Phase 1 Final Rule restoring regulatory provisions that were in effect before the 2020 rule modified them for the first time. On July 28, 2023, CEQ announced a Phase 2 Notice of Proposed Rulemaking—the "Bipartisan Permitting Reform Implementation Rule"—to revise its regulations for implementing the procedural provisions of the NEPA, including to implement the amendments to NEPA by the Fiscal Responsibility Act of 2023. CEQ issued the Phase 2 Final Rule on May 1, 2024, and the text of the regulation indicates the regulations apply to any NEPA process

covers both state and federal environmental requirements. However, because this ROD contains only the decision of the Authority under its assigned responsibilities for NEPA, the documents are henceforth referred to in this ROD as the “Draft EIS,” and “Final EIS.” In making its decision, the Authority considered the information and analysis contained in the 2022 Draft EIS and the 2024 Final EIS (collectively, “EIS Documents”). The Authority also considered public and agency comments received on the EIS Documents. Table 1.1-1 summarizes major NEPA milestones and completion dates for the EIS Documents.

Table 1.1-1 Summary of Major Milestones for Compliance with Federal Environmental Laws

Milestone	Date
Notice of Intent published in Federal Register (amended in 2014)	March 15, 2007
Public and Agency Meetings	June 2014 – March 2024 ¹
Notice of Intent Published in Federal Register	July 24, 2014
Public Scoping Meetings (7)	August 5, 2014 – August 19, 2014, and December 2, 2014 – December 14, 2014
Public and Agency Meetings	August 2014 – December 2014, November 2020, January 2021, April 2021
SHPO concurrence with Section 106 Finding of Effect Report	September 3, 2021
NMFS Issues Endangered Species Act Section 7 Concurrence Not Likely to Adversely Affect Determination	May 25, 2022
Notice of Availability Published and Issuance of Draft EIS and Section 4(f) Evaluation	September 2, 2022
Public Hearing to Receive Public Comment	October 18, 2022
Section 106 MOA executed by Authority and SHPO	December 14, 2023
USACE and USEPA Letters of Concurrence on Preliminary LEDPA Determination	January 5, 2024 (USACE) /January 9, 2024 (USEPA)
FRA Publication of Draft General Conformity Determination	April 2, 2024
Notice of Availability and Issuance of Final EIS and Section 4(f) Evaluation	May 24, 2024
U.S. Fish and Wildlife Service Biological Opinion Issued	Anticipated June 25, 2024
FRA Approval of Final General Conformity Determination	June 10, 2024
End of Waiting Period for Final EIS	June 23, 2024

¹ See Chapter 9, Table 9-5, in the Final EIS for certain organizational/individual meetings and dates held.

Authority = California High-Speed Rail Authority

EIS = Environmental Impact Statement

FRA = Federal Railroad Administration

LEDPA = Least Environmentally Damaging Practicable Alternative

NMFS = National Marine Fisheries Service

SHPO = California Historic Preservation Officer

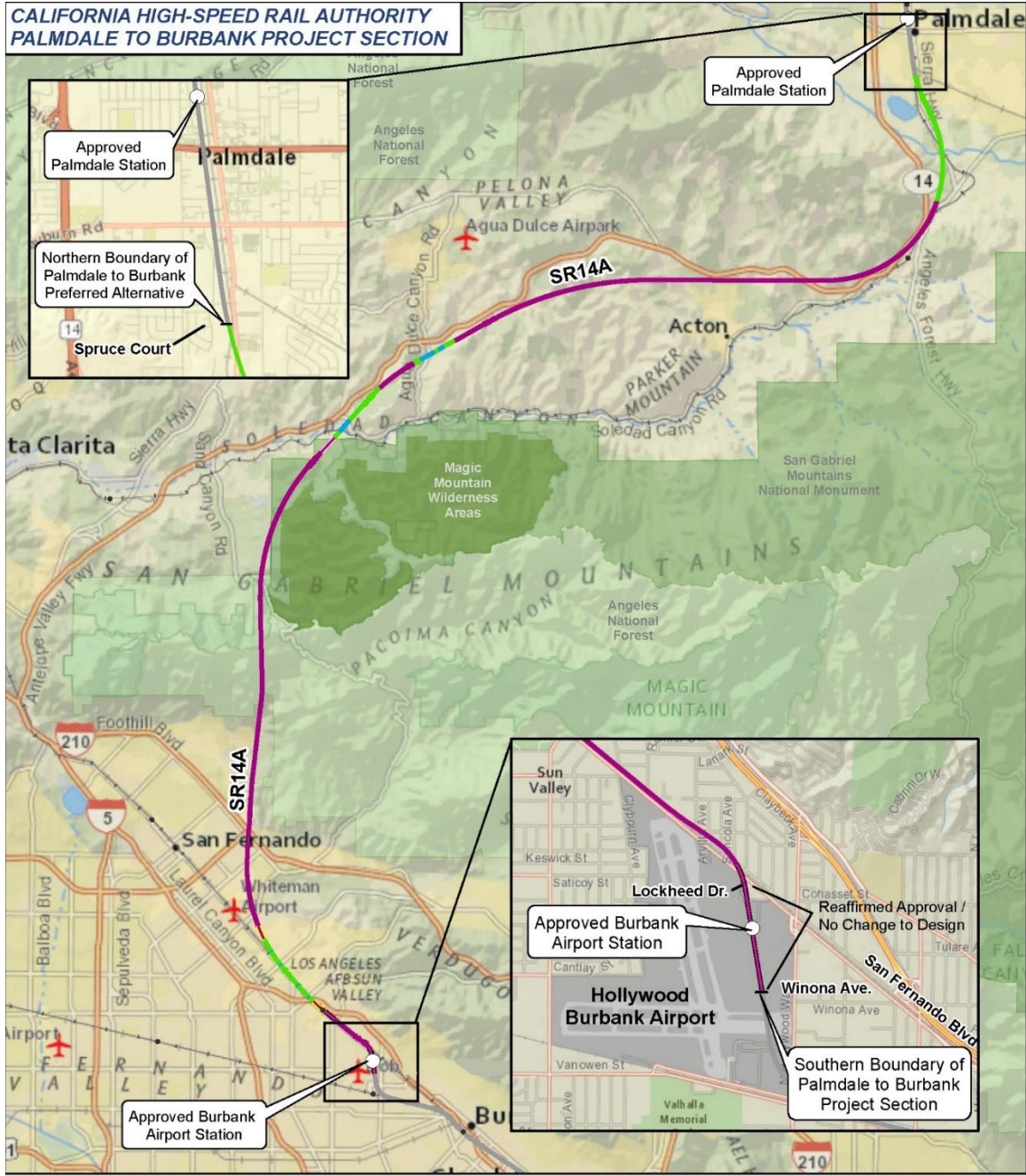
USACE = U.S. Army Corps of Engineers

USEPA = U.S. Environmental Protection Agency

begun after July 1, 2024 (40 CFR 1506.12). The NEPA process for the project was initiated before the effective date of the 2020, 2022, and 2024 CEQ regulations and is not subject to the current regulations, relying on the 1978 regulations [amended in 1986, 51 Federal Register 15618 (April 25, 1986)] as they existed prior to September 14, 2020. All subsequent citations to CEQ regulations in this environmental document refer to the 1978 regulations, pursuant to 40 C.F.R. 1506.13 (2020) and 40 C.F.R. 1506.12 (2024).

The Palmdale to Burbank Section will connect to the already approved portions of the HSR system between San Francisco and Palmdale and between Burbank and Los Angeles. This ROD outlines all relevant information used by the Authority, as the NEPA lead agency, for approval of the Selected Alternative (SR14A Build Alternative). The Selected Alternative includes both the Central Subsection and the Burbank Subsection, as defined in the Final EIS, including the previously approved Burbank Station (CHSRA Resolutions # HSRA 22-02 and HSRA 22-03). The northern terminus of the Selected Alternative is Spruce Court in the City of Palmdale, which connects the Palmdale to Burbank Project Section to the approved Bakersfield to Palmdale Project Section. The southern terminus of the Selected Alternative is north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank. With the decision to select the SR14A Alternative, the Authority updates its analysis to reflect Authority responses to comments received on both the Central Subsection and the Burbank Subsection during the Palmdale to Burbank Draft EIS comment period and reaffirms its prior approval of all HSR facilities in the Burbank Subsection, without any change to the previously approved Burbank Subsection design. This reaffirmation confirms that, even with the updated analysis for the Burbank Subsection in the Palmdale to Burbank Final EIS, the prior approval's conclusions and design remain unchanged.

As depicted in Figure 1.1-1 and described in further detail in Chapter 2, Alternatives, of the Final EIS, the Selected Alternative alignment would be approximately 38 miles in length. The northern portion of the alignment would continue south of Spruce Court at grade, curving eastward and traveling south approximately 300 feet east of Una Lake. South of Una Lake, the Selected Alternative alignment would curve westward, cross over the Southern California Regional Rail Authority Antelope Valley Line, Sierra Highway and the Soledad Siphon, and continue southwest and enter a tunnel portal near the Sierra Highway/Pearblossom Highway intersection. The Selected Alternative alignment would continue westward, in a tunnel before surfacing near Agua Dulce Canyon Road. The alignment would then transition between at-grade and elevated profiles closely paralleling the SR 14 freeway before entering an approximately 1-mile-long tunnel. Transitioning from tunnel to at-grade, the Selected Alternative alignment would extend at grade in the Bee Canyon area through to the Vulcan Mine site. The remaining Selected Alternative alignment south of the Vulcan Mine site would be situated under the Angeles National Forest (ANF) and then would transition above ground between Montague Street and Olinda Street in the San Fernando Valley, and then entering an approximately 1-mile-long cut-and-cover tunnel before reaching the Burbank Airport Station and ending with its southern terminus north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank, in the Burbank subsection. More detail on the Selected Alternative for the Palmdale to Burbank Project Section is provided in the Final EIS, including its Chapter 2, Alternatives.



Source: Authority, 2024; National Geographic, 2021

June 13, 2024

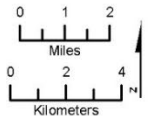
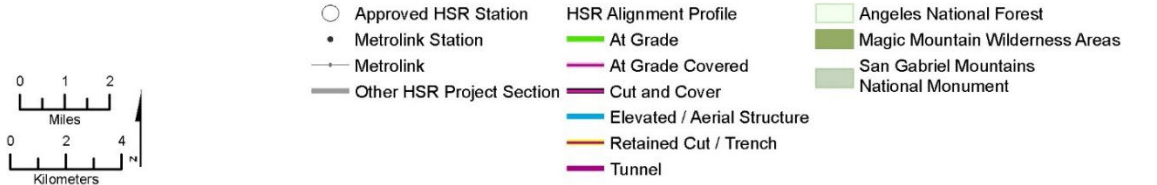


Figure 1.1-1 Palmdale to Burbank Project Section Selected Alternative and Station

In making its decision, the Authority considered the information and analysis contained in the EIS documents and the associated administrative record and input received from the public, tribes, and other agencies.

The Authority has prepared this ROD in accordance with applicable provisions of the NEPA Assignment MOU dated July 23, 2019; the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 C.F.R. §§ 1505.2 and 1506.10), 23 U.S.C. § 139, and FRA's Procedures for Considering Environmental Impacts (64 *Federal Register* [Fed. Reg.] 28545, May 26, 1999), as modified by 78 Fed. Reg. 2713 (January 14, 2013).

Specifically, this ROD:

- Provides background on the NEPA process leading to the Final EIS, including a summary of public involvement and agency coordination
- States and reaffirms the project's Purpose and Need
- Summarizes the process that led to the development of the alternatives for study in the Draft EIS and Final EIS
- Discusses agency roles and responsibilities
- Identifies the project alternatives considered in the EIS Documents
- Identifies the SR14A Build Alternative as the Selected Alternative
- Identifies the environmentally preferable alternative
- Summarizes environmental benefits and adverse effects of the Selected Alternative
- Discusses and/or makes determinations required under other relevant laws and guidance, including:
 - Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (54 U.S.C. §§ 306101–307106 et seq.)
 - Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. § 303)
 - Clean Air Act (42 U.S.C. §§ 7401–7671q)
 - Section 7 of the Endangered Species Act of 1973 (16 U.S.C. §§ 1531–1544)
 - Section 404 of the Clean Water Act (CWA) (33 U.S.C. §§ 1251–1387)
 - USEO 11990 (Protection of Wetlands, May 24, 1977)
 - USEO 11988 (Floodplain Management, May 24, 1977)
 - U.S. Presidential Executive Order (USEO) 12898 (Federal Actions to Address Environmental Justice in Minority and/or Low-Income Communities, February 11, 1994)
- Summarizes the comments received on the Final EIS and responds to substantive comments that have not been previously addressed
- Imposes impact avoidance and minimization features (IAMF) and mitigation measures that will avoid, minimize, and mitigate environmental harm and sets forth a binding monitoring and enforcement program for all such features and measures
- Presents the Authority's decision, determinations, and findings on the proposed project and identifies and discusses the factors that were balanced by the Authority in making its decision
- Summarizes the status of compliance with permitting and other environmental requirements
- The ROD also includes the following appendices:
 - Appendix A: Final General Conformity Determination, June 10, 2024

- Appendix B: Final U.S. Fish and Wildlife Service Biological Opinion, [anticipated June 25, 2024]
- Appendix C: Mitigation Monitoring and Enforcement Plan
- Appendix D: State Historic Preservation Officer Section 106 Concurrence Letter, September 3, 2021, and Memorandum of Agreement, December 14, 2023
- Appendix E: National Marine Fisheries Service Section 7 Concurrence Letter, May 25, 2022
- Appendix F: U.S. Army Corps of Engineers Preliminary Least Environmental Damaging Practicable Alternative (LEDPA) Concurrence Letter, January 5, 2024, and U.S. Environmental Protection Agency Preliminary LEDPA Concurrence Letter, January 9, 2024
- Appendix G: Section 4(f) Concurrence Letters
- Appendix H: Comments Received Between the Publication of the Final EIS and the June 26-27, 2024, Board Meeting
- Appendix I: Errata for the Final EIS
- Appendix J: Individual Section 4(f) Evaluation for Lang Station Open Space

1.1 California HSR System

The Authority is responsible for planning, designing, constructing, and operating the California HSR System. Its state 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 would provide intercity, high-speed service on more than 800 miles of track 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. The Authority and FRA prepared three programmatic (Tier 1) EIR/EIS documents to select preferred alignments and station locations to advance for project-level analysis in Tier 2 EIR/EISs. See Chapter 1, Project Purpose, Need, and Objectives, of the Final EIS for a detailed description of the HSR system and the history of Tier 1 documents. The HSR system would use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and automatic train-control systems that would incorporate positive train control infrastructure and be compliant with the requirements of 49 C.F.R. Part 236 Subpart I, with trains capable of operating up to 220 miles per hour in HSR project sections that are fully grade separated and on a dedicated guideway alignment.



Source: Authority 2021

Figure 1.1-2 Statewide High-Speed Rail System, Phase 1 and Phase 2—Project Sections

The Authority plans two phases of California HSR System development. The California High-Speed Rail Program 2024 Business Plan (Authority 2024a) describes in detail how the California HSR System would be implemented and recognizes current budgetary and funding realities. The California HSR System Phase 1, as approved through Tier 1 decisions, has been divided into eight individual sections for site-specific, Tier 2 analysis. The Authority and FRA defined HSR project sections so that they would have independent utility or independent significance (i.e., be usable even if later sections of the HSR system are not completed). As of May 2024, the following project sections are under construction:

- Merced to Fresno
- Fresno to Bakersfield

The Tier 2 environmental reviews (Final EIR/EIS and ROD) have been completed for the following project sections:

- Bakersfield to Palmdale (ROD issued September 2021)
- Burbank to Los Angeles (ROD issued March 2022)
- San Jose to Merced (ROD issued June 2022)
- San Francisco to San Jose (ROD issued September 2022)

1.2 Palmdale to Burbank Project Section

The Palmdale to Burbank Project Section is a component of the California HSR system and would serve as the system's connection between Palmdale and Burbank. It would connect HSR between the previously approved station in Palmdale to a station in Burbank, where it would connect to the Burbank to Los Angeles Project Section. The Palmdale to Burbank Project Section Final EIS studied six build alternatives that extend approximately 31 to 38 miles in length, depending on the alternative, from Spruce Court in the City of Palmdale to immediately north of Winona Avenue in the City of Burbank. The geography and topography of this section are extremely diverse—characterized by desert, foothill, and mountainous environments including rural, suburban, and urban communities.

The Authority and FRA received comments during scoping meetings held in August 2014, and open house meetings in December 2014.² As part of public outreach for the development of the Draft EIS, seven public and agency scoping meetings were held between August 5, 2014, and August 19, 2014, in Santa Clarita, Burbank, Palmdale, Acton/Agua Dulce, Sylmar, Lake View Terrace, and downtown Los Angeles. These meetings introduced the split of the alignment between Bakersfield to Palmdale and Palmdale to Burbank. Seven additional follow-up meetings were conducted between December 2, 2014, and December 14, 2014, in Santa Clarita, Sun Valley, Palmdale, Burbank, San Fernando, Sylmar, and Acton. The additional meetings introduced the potential for alignments to traverse the ANF.

Between 2014 and 2020, the Palmdale to Burbank Project Section initially evaluated three subsections: the Palmdale Subsection, which included the Palmdale HSR Station and an alignment extending to Spruce Court in Palmdale, the Central Subsection (between Spruce Court in Palmdale to Lockheed Drive in Burbank), and the Burbank Subsection (between Lockheed Drive and Winona Avenue in Burbank) including the Burbank Airport HSRA Station. Since 2014, the Authority hosted more than 450 meetings with the public, stakeholders, and agencies to provide project updates and obtain additional feedback on the proposed alternatives. Federal agencies consulted included the U.S. Army Corps of Engineers, Surface Transportation Board, U.S. Bureau of Land Management, U.S. Forest Service, Federal Aviation Administration, the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, the National Park Service, and the Advisory Council on Historic Preservation.

At its November 15, 2018, meeting, the Board concurred with the Authority staff recommendation to identify the Refined SR14 Alternative as the Authority's Preferred Alternative for the Palmdale

² In response to a number of stakeholder requests, the original comment submittal deadline was extended from August 31, 2014, to September 12, 2014.

to Burbank Project Section. Resolution #HSRA 18-19 can be found on the Authority's website ([2018 Board Meeting Schedule & Materials - California High Speed Rail](#)) (Authority 2018b). This identification was based on balancing the beneficial and adverse impacts of the project alternatives on the natural environment and community resources in the context of CEQA, NEPA, stakeholder input, and feasibility considerations. The Authority worked closely with federal, state, and regional agencies to meet regulatory requirements by refining the Selected Alternative to avoid and minimize impacts, and where necessary, to refine mitigation measures for adverse impacts that cannot be avoided.

The Authority refined its Preferred Alternative for the Palmdale to Burbank Project Section to the SR14A Alternative in August of 2020, as reflected in the minutes of the Authority Board of August 20, 2020. The new Preferred Alternative was proposed to avoid impacts to Una Lake south of Palmdale as well as to avoid and lessen impacts on communities and other natural resources south of Una Lake. The change in alignment for the SR14A, E1A, and E2A Build Alternatives would avoid direct impacts to Una Lake and reduce impacts to the Acton community. Following approval of the Palmdale Station and Alternative 2 with the Refined CCNM Design Option as part of the Bakersfield to Palmdale Project Section Final EIR/EIS and 2021 Record of Decision, the Palmdale Section was not further analyzed in the Palmdale to Burbank EIS. The Palmdale to Burbank Project Section, retained for continued and full evaluation in the Draft EIS and the Final EIS, includes only the Central Subsection and the Burbank Subsection.

The Draft EIS was released on September 2, 2022, for an initial 60-day public comment period that initially anticipated to be closed on November 1, 2022. Subsequently, the Authority notified USEPA that the review and comment period was being extended to end of December 1, 2022, and USEPA published the revised notice in the Federal Register on October 24, 2022. The Draft EIS presented the Purpose and Need for the project; a reasonable range of six build alternatives for the rail alignment; the existing setting; effects (both beneficial and adverse) from construction and operation of the alternatives; and project design features and mitigation measures to avoid, reduce, or mitigate adverse environmental effects.

The Authority received 2,489 individual, delimited comments on the Draft EIS. (A single comment letter may include multiple delimited comments.) The Authority considered the information presented in the comments received, and the Final EIS includes responses to all substantive comments on the Draft EIS. The Final EIS also includes minor design refinements to the project alternatives since publication of the Draft EIS to respond in part to concerns raised by stakeholders. Additionally, although the Burbank Subsection (as depicted in Figure 2-46 of the Final EIS) was previously approved as a part of the Burbank to Los Angeles Project Section EIR/EIS and 2022 Record of Decision, the Authority retained the Burbank Subsection in the Palmdale to Burbank Final EIS so as to provide responses to comments received on the Burbank Subsection during the Palmdale to Burbank DEIS comment period. As the Burbank Subsection designs have not changed since their 2022 approval and the Palmdale to Burbank Final EIS conclusions for the subsection remain consistent with the 2022 approval, the Burbank to Los Angeles Final EIR/EIS was also incorporated by reference to the Final EIS. Where applicable, specific content from these prior documents is summarized.

On May 24, 2024, the Authority published the Final EIS with a Notice of Availability in the Federal Register, on the Authority website, and with wide distribution to public libraries in the project area, individualized notices to every individual or entity who commented on the Draft EIS, notices to property owners within or adjacent to the project footprint, and notices in newspapers of general circulation.

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2 AGENCY ROLES AND RESPONSIBILITIES

The Authority is the NEPA lead agency, pursuant to the NEPA Assignment MOU. The STB, the BLM, the USFS, and the USACE are NEPA cooperating agencies. Multiple other federal agencies that are not cooperating agencies have been involved with and contributed to the environmental review, including the FRA, USEPA, USFWS, FAA, and the Advisory Council on Historic Preservation. The specific roles and responsibilities of the federal agencies involved in the Palmdale to Burbank Project Section including lead, cooperating, and permitting agencies, are further described below.

2.1 Federal Railroad Administration

The FRA's responsibilities for environmental review, consultation, and other actions required by applicable federal environmental laws, including NEPA, for the proposed Project are being carried out by the Authority, acting on behalf of the State of California pursuant to 23 U.S.C. Section 327 and the NEPA Assignment MOU. Under the MOU, FRA assigned federal environmental review responsibilities for the Project to the State of California. Since July 23, 2019, the Authority has performed as the lead NEPA agency in this program, known as NEPA Assignment.

As required by law and the NEPA Assignment MOU, the FRA has retained responsibility making air quality conformity determinations under the Clean Air Act (42 U.S.C. § 7506) and government-to-government consultation with Indian tribes (23 C.F.R. § 773.105(b)(4)). FRA issued the federal Clean Air Act General Conformity Determination on June 10, 2024 (see Appendix A).

The NEPA Assignment MOU also requires the Authority to consult with FRA prior to making any proposed constructive use determinations under Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. § 303); however, there are no such determinations associated with the Selected Alternative, as explained in Chapter 4, Section 4(f) and Section 6(f) Evaluations of the Final EIS.

Additionally, FRA also administers certain grant funds provided to the Authority under the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) and oversees the Authority's compliance with its grant agreement and relevant amendments for the CHSRA system.

2.2 Surface Transportation Board

The STB has authority over construction and operation of new rail lines (49 U.S.C. § 10901). As the STB explained in its June 13, 2013, decision authorizing construction of the 65-mile section of the California HSR System between Merced and Fresno (Docket No. FD_35724_0), 49 U.S.C. Section 10501(a)(2)(A) gives the STB jurisdiction over transportation by rail carrier in one state, as long as that intrastate transportation is carried out, "as part of the interstate rail network." The STB determined that the California HSR System will be constructed as part of the interstate rail network and therefore concluded that it has jurisdiction over the California HSR System.

The STB has participated as a cooperating agency in the environmental review process for the Palmdale to Burbank Project Section. Following completion of this process, the STB may adopt the Authority's EIS (or conduct additional review, as appropriate) and issue a separate ROD authorizing the Project.

2.3 U.S. Army Corps of Engineers

USACE is responsible for issuing permits under the CWA Section 404 (33 U.S.C. § 1344) (Section 404) and authorizations under the Rivers and Harbors Act of 1899, Section 14 (33 U.S.C. § 408) (Section 408). USACE is required to comply with NEPA and issue its own NEPA decision before it can issue a permit under Section 404 or grant permission under Section 408.

As an initial step in the environmental review and permitting processes for the project, the Authority, the FRA, USACE, and USEPA executed an MOU (NEPA/404/408 MOU) in November 2010 (FRA et al. 2010). The MOU outlines a process to coordinate the NEPA environmental review process with certain steps in the Section 404 and Section 408 permitting processes. The

purpose of the MOU is to facilitate USACE decision making under Section 404, Section 408, and NEPA.

Under Section 404, the USACE and USEPA regulate the discharge of dredged and fill materials into the waters of the U.S. Project sponsors must obtain a permit from the USACE for discharges of dredged or fill materials into waters of the U.S. Aquatic resources in the project vicinity include several types of wetlands as well as other waters (i.e., streams, lakes, and other open water features) as verified by the USACE under a preliminary jurisdictional determination issued on December 5, 2019. Based on the Authority's analysis of permanent impacts on waters of the U.S. and coordination with the USACE, the Authority anticipates seeking an individual permit under Section 404 for the Palmdale to Burbank Project Section.

The project alternatives that were considered in the EIS Documents incorporated various combinations of a range of design options for the project. Pursuant to the MOU, the Checkpoint B Summary Report identified the range of alternatives to be carried forward in the Draft EIS. USEPA and USACE concurred with the selection of these alternatives on December 16, 2020, and December 17, 2020, respectively (Authority 2024b). All six of these project alternatives are evaluated in the Final EIS.

The information contained in the Final EIS will provide information that will facilitate USACE's consideration and issuance of any necessary permits and approvals. Further, any USACE documents produced using information from the Final EIS can be used to assess proposed alterations/modifications of federal flood risk management facilities and any associated operation and maintenance activities.

2.4 U.S. Fish and Wildlife Service and National Marine Fisheries Service

Concurrently with the NEPA process, the Authority initiated consultation under the federal Endangered Species Act (FESA) Section 7 (16 U.S.C. § 1536), pursuant to 50 C.F.R. Part 402. Section 7 of FESA requires federal agencies to consult with USFWS and/or National Marine Fisheries Service (NMFS), depending on the type of species or habitat affected, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered fish, wildlife, or plant species or result in the destruction or adverse modification of designated critical habitat for any such species. Impacts associated with threatened and endangered species and habitat are addressed through a consultation process with USFWS and/or NMFS that is outlined under Section 7 of FESA and the implementing regulations. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.) requires federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat for species that are managed under federal fishery management plans in U.S. waters. Impacts associated with Essential Fish Habitat are addressed through a coordination process with NMFS that may be combined with FESA Section 7 consultation.

In April 2022, the Authority informally consulted with NMFS under Section 7 of the ESA by sending a letter requesting NMFS concur with the Authority's determination that the Proposed Action was not likely to adversely affect the Southern California steelhead (*Oncorhynchus mykiss*), with a Biological Assessment (BA) supporting that determination. In May of 2022, NMFS issued a concurrence letter stating that the project was not likely to adversely affect Southern California steelhead. Appendix E of this ROD contains the concurrence letter from NMFS.

Because the project may affect threatened or endangered species and critical habitat subject to USFWS jurisdiction, the Authority prepared a BA for the project and consulted with USFWS, as required under Section 7 of FESA. The Authority submitted a draft BA and initiated formal Section 7 consultation with USFWS in June 2023. The BA evaluates the potential adverse effects of the project on federally listed species and designated critical habitat. USFWS has confirmed issuance of a biological opinion (BO) [anticipated for June 25, 2024] concluding that the Selected Alternative is not likely to jeopardize the continued existence of the five listed wildlife and plant species and is not likely to adversely modify or destroy designated critical habitat for arroyo toad that occur in the action area. Appendix B of this ROD contains the USFWS BO.

2.5 Advisory Council on Historic Preservation

The Advisory Council on Historic Preservation is an independent federal agency that promotes the preservation, enhancement, and productive use of our nation's historic resources and advises the President and Congress on national historic preservation policy. Established by the National Historic Preservation Act in 1966, the Advisory Council on Historic Preservation has the legal responsibility to encourage federal agencies to factor historic preservation into federal project requirements (50 C.F.R. § 1502.25). The Advisory Council on Historic Preservation is a signatory to the Authority's Section 106 Programmatic Agreement.

2.6 Federal Aviation Administration

FAA agreed by letter dated March 4, 2021, to serve as cooperating agency. Regular meetings (quarterly) have been held between FAA and the Authority to specifically discuss FAA's requirements for this project segment. FAA has provided comments to the Authority regarding project components that may impact the Burbank Airport and its facilities. Coordination with FAA is required as a part of advanced design as outlined in SS-IAMF#5: Aviation Safety. For example, this mitigation measure requires that the Authority submit construction plans and/or information to the FAA as required by Code of Federal Regulations, Title 14, Part 77, and implement measures required by the FAA to ensure continued safety of air navigation during HSR construction and operation, pursuant to 14 C.F.R. section 77.5(c). Furthermore, SS-IAMF#6: Stakeholder Coordination for the Hollywood Burbank Airport requires that, as design of the Burbank to Los Angeles Project Section progresses, the Authority shall continue to coordinate with the FAA and Burbank-Glendale-Pasadena Airport Authority (BGPAA) to avoid conflicts due to overlapping construction schedules and future operations at the Hollywood Burbank Airport. The Authority's commitment to coordinate with the BGPAA has further been augmented through a November 2023 executed agreement between the Authority and BGPAA, where both parties made certain and mutual coordination commitments over the lifecycle of the proposed project from design through to long-term operations.

2.7 Bureau of Land Management

U.S Department of the Interior, BLM agreed by letter dated November 6, 2012, to serve as cooperating agency for the Project Section. The Selected Alternative traverses three BLM parcels in underground tunnels with no surface infrastructure. The Authority would apply for a grant of right-of-way for the three BLM properties crossed by the Selected Alternative.

2.8 United States Forest Service

USFS agreed by letter dated August 25, 2014, to serve as cooperating agency for the Project Section. The Authority will apply for a Special Use Authorization from USFS under the Federal Land Policy and Management Act. Such authorization will include conditions to avoid or minimize impacts on forest land or management of forest resources within the ANF, including the San Gabriel Mountains National Monument (SGMNM). A Special Use Authorization will be required because HSR tunnels and other facilities will be constructed in the ANF, including within portions of the SGMNM.

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3 PURPOSE AND NEED

3.1 Purpose of the High-Speed Rail System

The *Final Program EIR/EIS for the Proposed California High-Speed Train System* (Statewide Program EIS) established the purpose of the statewide HSR system, and identified and evaluated alternative HSR corridor alignments and stations as part of a statewide HSR system (Authority and FRA 2005).

The purpose of the statewide HSR system is to provide a reliable high-speed electrified train service that links the major metropolitan areas of the state and delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network and relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources.

3.2 Purpose of the Palmdale to Burbank Project Section

The purpose of the Palmdale to Burbank Section of the California HSR system is to provide the public with electric-powered HSR service that provides predictable and consistent travel times between the Antelope Valley and the San Fernando Valley, provide connectivity to airports, mass transit systems, and the highway network in the Antelope Valley and the San Fernando Valley; and to connect the northern and southern portions of the Statewide HSR system.

3.3 Statewide and Regional Need for the High-Speed Rail System in the Palmdale to Burbank Project Section

The approximately 31- to 38-mile-long Palmdale to Burbank Project Section is an essential component of the statewide HSR system. The Palmdale to Burbank Project Section would provide access to a new transportation mode and contribute to increased mobility throughout California. The Palmdale to Burbank Project Section would connect to both the Bakersfield to Palmdale and Burbank to Los Angeles Project Sections.

The need for an HSR system exists statewide, with regional demand contributing to this need. The Palmdale to Burbank Project Section would contribute considerably to filling the statewide need for a new intercity transportation service that would connect it with the major population and economic centers and to other regions of the state.

The capacity of California's intercity transportation system, including within the Palmdale and Burbank Project Section vicinity, is insufficient to meet existing and future travel demands. The current and projected future system congestion will continue to result in deteriorating air quality, reduced reliability, and increased travel times. The system has not kept pace with the tremendous increase in population, economic activity, and tourism in the state, including that in the project vicinity. The interstate highway system, commercial airports, and the conventional passenger rail system³ serving the intercity travel market are operating at or near capacity and will require large public investments for maintenance and expansion to meet existing demand and future growth over the next 25 years and beyond. Moreover, the feasibility of expanding many major highways and key urban airports is uncertain; some needed expansions may be impractical or may be constrained by physical, political, and other factors. The need for improvements to intercity travel in California, including intercity travel between the Palmdale and Burbank Project Section vicinity, greater Southern California, the San Francisco Bay Area, and Sacramento, relates to the following issues:

³ Conventional passenger rail systems include inter-regional commuter rail services such as Amtrak and Metrolink. These are not to be confused with local, light, and heavy rail transit systems that generally operate within a smaller sub-regional area (e.g., Los Angeles County's Metro Rail System).

- Future growth in demand for intercity travel, including the growth in demand within the Palmdale to Burbank Project Section corridor.
- Capacity constraints that will result in increasing congestion and travel delays, including those in the Antelope Valley (cities of Lancaster and Palmdale) and in the city of Los Angeles.
- Unreliability of travel stemming from congestion and delays, weather conditions, accidents, and other factors that affect the quality of life and economic well-being of residents, businesses, and tourism in California, including within the Palmdale to Burbank Project Section corridor.
- Increased frequency of accidents on intercity highways and passenger rail lines, including in the project vicinity.
- Reduced mobility as a result of increasing demand on limited modal connections between major airports, transit systems, and passenger rail in the state, including within the Palmdale to Burbank Project Section corridor.
- Poor and deteriorating air quality and increasing pressure on natural resources and agricultural lands due to the expansion of highways and airports, as well as continued urban development pressures, including those in the Palmdale to Burbank Project Section corridor.
- Legislative mandates to moderate the effects of transportation on climate change, including required reductions in greenhouse gas (GHG) emissions caused by vehicles powered by the combustion of carbon-based fuels.

4 ALTERNATIVES CONSIDERED

This section summarizes the Alternatives Analysis process, describes the alternatives evaluated in the EIS Documents, and identifies the Selected Alternative and environmentally preferable alternative.

The Authority undertook an extensive public screening process to identify and refine alternatives for study in the project-level EIS. The Authority prepared Alternatives Analysis reports to explore alignment alternatives in an iterative process from 2010 to 2016, and the continued refinement thereafter of alternatives and development of design options. The Preliminary Palmdale to Los Angeles Alternatives Analysis Report (PAA) was completed in 2010 (Authority and FRA 2010), the Supplemental Alternatives Analysis (SAA) Report (Authority and FRA 2012a, 2012b) was prepared in 2012, and the Palmdale to Burbank Project Section SAA Report was completed in 2016 (Authority and FRA 2016).

Although the Alternatives Analysis process considered multiple criteria, the project objective to maximize the use of existing transportation corridors and available rights-of-way to the extent feasible was emphasized as a way of minimizing impacts otherwise caused by creating an entirely new linear transportation corridor. Additionally, the engineering, geologic, and grade-requirement challenges in this project section have influenced the Build Alternatives. The following sections summarize the alternatives included in the Statewide Program EIR/EIS, the PAA Report, and the SAA Reports.

Based on the foundational efforts in the 2010 PAA Report, the 2012 SAA Reports, and the 2014 SAA Report, followed by the refinements and new alternatives evaluated in the 2015 SAA Report, the 2016 SAA Report, and the Una Lake Avoidance Alternatives, the alignment and station alternatives proposed within the limits of the Palmdale to Burbank Project Section (first defined in the 2014 SAA Report) eliminated from further study are described below. Generally, the alternatives that were not carried forward for detailed analysis had greater direct and indirect environmental impacts, were impracticable, or failed to meet the project's purpose and need. This section then describes the six Build Alternatives carried forward for evaluation in the EIS.

4.1 Alternatives Considered but Eliminated from Detailed Study

This section of the ROD describes alignment alternatives not carried forward, including a brief narrative to describe the alternatives eliminated during screening during the process described above.

4.1.1 Tier 2 Palmdale to Los Angeles Alternatives Analysis

In consideration of the varying setting and terrain covered in the 2010 PAA Report, the Palmdale to Los Angeles Project Section was divided into four subsections (described in Section 2.4.2.1 of the Draft EIS): Sylmar to Palmdale, SR 2 to Sylmar, Metrolink Central Maintenance Facility (CMF) to SR2, and LAUS to Metrolink. The Station Options considered included stations in Los Angeles, San Fernando Valley, and Palmdale.

Through the 2010 PAA Report, the Authority determined that several potential alignment and station alternatives did not merit continued consideration. Between Sylmar and Palmdale, the SR14 South and Soledad Canyon alignments were eliminated from further consideration based on greater environmental impacts, along with greater route mileage and journey time, as compared to the SR14 East and SR14 West alternatives that were carried forward (see Figure 2-34 in Chapter 2, Alternatives, of the Draft EIS). The Soledad Canyon alignments would traverse areas granted by the Bureau of Land Management for mineral extraction and negatively impact the ANF. The SR 14 South alignment would negatively impact the existing visual setting and also traverse areas granted by the Bureau of Land Management for mineral extraction. Additionally, USEPA and other resources agencies raised concerns regarding impacts on sensitive resources in the Soledad Canyon and Santa Clara River environments.

A potential station in Santa Clarita was eliminated from further consideration based on comparatively higher residential displacements. A potential station in Lancaster was eliminated

based on not sufficiently meeting the project purpose and objectives of providing transportation connectivity as compared to station sites in Palmdale. Between Sylmar and SR 2, alternatives that would have placed HSR outside the existing right-of-way to the east and west were eliminated from further consideration due to high displacement of residential, commercial, and industrial properties, and an alternative that would have required several long viaducts sharing the existing right-of-way was eliminated due to the complexity and visual intrusiveness of the long viaducts. The use of the existing right-of-way would also reduce train travel times. Non-HSR trains between Palmdale and downtown Burbank currently have a run time that varies from 1 hour 24 minutes to 1 hour 53 minutes. Proposition 1A travel time objectives for HSR travel from San Francisco to Los Angeles of 2 hours and 40 minutes would not be achievable if the section between Palmdale and Burbank required this much time to traverse.

Potential stations at Burbank North and South, Hollywood Way, Sunland Boulevard, and Sylmar North were eliminated from further consideration based on location/proximity to other stations, constructability issues and costs, and environmental impacts compared to the station alternatives carried forward.

4.1.2 2011 Los Angeles Supplemental Alternatives Analysis Report: LAUS to Sylmar (2011 SAA Report)

The 2011 SAA Report refined alignment corridors and station sites in the southern portion of the Palmdale to Los Angeles corridor between Sylmar and LAUS, utilizing the three separate “subsections” as presented in the 2010 PAA Report: Sylmar to SR 2, SR 2 to Metrolink CMF, and Metrolink CMF to LAUS (Authority 2011).

Within the SR 2 to Sylmar Subsection, the Authority Board requested evaluation of a station located in downtown Burbank at the existing Burbank Metrolink station. A nonstandard layout to bring the tracks closer to the existing right-of-way, reducing some of the impacts illustrated in the 2010 PAA Report, was considered. As a result of the remaining impacts of this station location on the surrounding area and the need to reconstruct the existing bridges over the alignment, this alternative was not recommended to be carried forward for evaluation. The seismic risk associated with the Verdugo Fault, the impacts on new development south of SR 118, and the construction challenges and visual impact associated with the elevated Pacoima Wash Station were reasons the LAUS to Sylmar alternative was no longer recommended to be carried forward. An alternative at-grade Pacoima Wash option was not recommended to be carried forward due to extensive adverse impacts on adjacent freeways and intersections.

4.1.3 2012 Palmdale to Los Angeles Supplemental Alternatives Analysis Report, Sylmar to Palmdale (2012 SAA Report)

The 2012 SAA Report split the Palmdale to Sylmar Subsection as previously included in the 2010 PAA Report into the Santa Clarita Subsection and the Palmdale Subsection and further evaluated potential alignment alternatives within these two new subsection limits. The 2012 SAA Report focused solely on the Santa Clarita and Palmdale Subsections (see Figure 2-36 in Chapter 2, Alternatives, of the Draft EIS) and made no other changes to the alignment or station options within other subsections carried forward from the previous 2012 SAA Report (Authority 2012a). The 2012 SAA Report refined the SR14 East and the SR14 West Alignments to create an East/West Hybrid option. The 2012 SAA Report recommended that certain alternatives (SR14 East Option, SR14 West Option, SR 14 East/West Hybrid Option, Sand Canyon Preliminary AA Option, Sand Canyon Metrolink 200 Option) be carried forward for further study.

4.1.4 2014 Palmdale to Los Angeles Supplemental Alternatives Analysis Report (2014 SAA Report)

The 2014 SAA Report recommended that the Palmdale to Los Angeles Project Section would be better advanced if divided into two project sections (Palmdale to Burbank and Burbank to Los Angeles) (Authority and FRA 2014). In addition, the 2014 SAA Report evaluated project alternatives from the 2012 SAA Report in light of California HSR System phasing in the Authority’s 2012 and 2014 Business Plans. Both Business Plans called for an Initial Operating

Segment with a temporary terminus station in the San Fernando Valley that would be fully integrated with the existing metropolitan rail infrastructure, to provide connections to all of Southern California while construction of the California HSR System to LAUS and beyond continued. The Business Plans' phased implementation strategy contained the following goals intended to make the best use of existing railroad infrastructure:

- A commitment to a blended system that focuses on new high-speed infrastructure development between the State's metropolitan regions while using, to the maximum extent possible, existing regional and commuter rail systems in urban areas.
- A commitment to blended operations at all phases of development that seeks to use new and existing rail infrastructure more efficiently through coordinated delivery of services, including interlining of trains from one system to another as well as integrated scheduling to create seamless connections.
- An Initial Operating Segment to connect the Central Valley to the Los Angeles Basin in the San Fernando Valley, integrating high-speed infrastructure with existing modes of transportation and closing the rail gap between Bakersfield and Palmdale.
- Making early investments in the "bookends", defined as San Francisco and the Los Angeles Basin, to upgrade existing services, build ridership, and lay the foundation for expansion of the California HSR System.

The 2014 SAA Report also considered new information that had developed since the 2012 SAA Report, including the emergence of the Brightline West HSR project (Brightline West Project) from Las Vegas to Victorville, the addition of the high-speed rail corridor of the High Desert Corridor project from Victorville to Palmdale, the incorporation of a Transit Village Specific Plan into the Palmdale General Plan, and planning for land use and transportation by the City of Burbank and the Burbank-Glendale-Pasadena Airport Authority around the Hollywood Burbank Airport. The 2014 SAA Report recommended certain alternatives for further investigation (mapped on Figure 2-37 in Chapter 2, Alternatives, of the Draft EIS) and eliminated others.

4.1.4.1 Santa Clarita Subsection

The 2014 SAA Report reevaluated and updated the Santa Clarita North profile to eliminate nonstandard alignment features and meet geometric standards for curvature and segment lengths.

4.1.4.2 San Fernando Valley Subsection

The San Fernando and Branford Street station options were eliminated from further consideration because of their lack of consistency with the 2012 and 2014 Business Plans' criteria and goals.

4.1.4.3 Los Angeles Subsection

The Surface Alternative and LAPT3 remained unchanged in the 2014 SAA Report. However, LAPT1 was refined to utilize a higher platform at LAUS.

4.1.5 Palmdale to Burbank Project Section Supplemental Alternatives Analysis Report (2015 SAA Report)

Informed by the 2014 scoping process, the Authority and FRA continued to refine and consider alternatives between Palmdale and Burbank, including refining the SR 14 corridor and introducing alternatives on the east corridor.

4.1.5.1 SR 14 Corridor

The 2015 SAA Report shifted the proposed station in Palmdale to begin near Avenue O, which would avoid Lake Palmdale (requiring relocation of Una Lake) and minimize impacts in the community of Acton. The report also refined the Santa Clarita North option (now known as Santa Clara Long Tunnel) to have the same horizontal location as the Santa Clarita South alignment and withdrew consideration of HSR tracks east of the Metrolink corridor in the San Fernando

Valley Subsection. Alignment alternatives along the SR 14 corridor were analyzed on an end-to-end basis by combining the Palmdale Subsection options (East, West, and Hybrid), the Santa Clarita Subsection options (Santa Clarita South and Santa Clara Long Tunnel), and the San Fernando Valley Subsection alignment options (HSR aligned west of the Metrolink corridor). The 2015 SAA Report recommended eliminating the following alternatives along the SR 14 Corridor: SR 14-3 (East/Santa Clara Long Tunnel/SCN/San Fernando West) and SR 14-4 (East/SCS /San Fernando West). SR 14-3 and SR 14-4 encountered the most schools located within a 1.25-mile radius of the alignment (21). In particular, these alignments passed near Vasquez High School and High Desert Middle School in the community of Acton with an at-grade profile. High Desert Middle School serves a variety of functions for the small, rural community of Acton, and thus, these alignments would result in substantial community impacts. As such, SR 14-3 and SR14-4 were not carried forward.

4.1.5.2 East Corridor

The 2015 SAA Report also introduced additional alignments that generally follow a second proposed corridor, the East Corridor, through a portion of the San Gabriel Mountains. The East Corridor alignments were introduced to reduce travel time, avoid surface impacts along the SR 14 Corridor, and respond to public comments for consideration of more direct routes between Palmdale and Burbank by way of the ANF, including the SGMNM. East of the community of Acton, these routes would enter a tunnel beneath the ANF, including the SGMNM, emerging at the surface in the northeast San Fernando Valley to share an aboveground corridor with the existing Metrolink Antelope Valley Line. These alignments were developed to use deep tunnels beneath the San Gabriel Mountains to avoid surface impacts within the ANF, including the SGMNM, and the Magic Mountain Wilderness Area. The 2015 SAA Report proposed six new East Corridor alignments: E1a, E1b, E2a, E2b, E3a, and E3b. The E3 alignments were proposed as the easternmost alignments, and the E1 alignments were proposed as the westernmost alignments. The East Corridor alignments would be constructed through the east side of the community of Acton, cross the ANF, including the SGMNM, and enter the northeast San Fernando Valley, eventually sharing the corridor with the existing Metrolink Antelope Valley Line.

4.1.5.3 Station Options

The 2015 SAA Report identified a Burbank Airport Station as the proposed station alternative within the San Fernando Valley. Station Option A shifted the station location northwest within the existing railroad right-of-way to improve connectivity with the Hollywood Burbank Airport.

4.1.6 Palmdale to Burbank Project Section Supplemental Alternatives Analysis Report (2016 SAA Report)

The 2016 Palmdale to Burbank Project Section SAA Report reevaluated all SR 14 Corridor and East Corridor alignment alternatives and station options carried forward from the 2015 SAA Report (see Figure 2-41 in Chapter 2, Alternatives, of the Draft EIS). The 2016 SAA Report incorporated alignment and station refinements originally presented in the 2015 SAA Report to reduce environmental impacts and improve operational performance and travel time. Furthermore, the SR 14 and East Corridor alignments were further refined to minimize surface encounters with sensitive community and environmental resources by tunneling in a more direct route between Palmdale and Burbank. In coordination with USFS, geotechnical investigations were completed within the ANF, including the SGMNM, to obtain subsurface field data to help evaluate potential environmental impacts (i.e., groundwater, hydrogeology, and surface water resources), design constraints, and construction considerations for the tunnel portions of alignments.

4.1.6.1 SR 14 Corridor

The 2016 SAA Report evaluated the two SR14 alternatives carried forward in the 2015 SAA Report (SR 14-1 and SR 14-2) and introduced the Refined SR14 Build Alternative. The Authority reviewed the critical environmental issues associated with SR 14-1 and SR 14-2, especially the strong potential for environmental justice effects on communities in the northeast San Fernando

Valley (including the city of San Fernando). Furthermore, adhering closely to the SR 14 freeway corridor through this area increased the mileage and travel time between Palmdale and Burbank, particularly relative to the Eastern Corridor alignments that took a more direct route underground. The 2016 SAA Report withdrew SR 14-1 and SR 14-2 and proposed SR14 Refined for further evaluation because SR14 Refined would tunnel under the ANF, including the SGMNM, resulting in fewer residential and business displacements, fewer impacts on minority or environmental justice communities, fewer noise and vibration effects on residential properties and schools, and fewer visual impacts than SR 14-1 or SR 14-2.

4.1.6.2 East Corridor

The E1 Refined alternative introduced in the 2016 SAA Report was designed to improve constructability by reducing tunnel grade and depths. Overall travel time would be reduced under E1 Refined in comparison to the SR14 alternatives proposed because of reduced track curvature (which would allow for higher travel speeds). The 2016 SAA Report withdrew E1a and E1b and proposed E1 Refined for further evaluation based on the following key criteria:

- E1 Refined would be approximately 1 mile longer than E1a or E1b. However, near the Arrastre Canyon area, E1 Refined would include an additional 4 to 6 miles of trackway within tunnels compared to the extent of tunnels in E1a and E1b. This would reduce the amount of at-grade or elevated alignment overall. E1 Refined would tunnel beneath the ANF, including the SGMNM, thereby reducing potential surface effects.
- In comparison to the E1a and E1b alignments, E1 Refined would avoid impacts on critical biological habitat of the arroyo toad. The number of miles of elevated and at-grade alignment within a floodplain or within 1 mile of perennial streams or springs would be reduced.
- Less of the E1 Refined alignment would fall within a fire hazard area, and E1 Refined would cross fewer faults in comparison to the E1a and E1b alternatives.

The E2 Refined alternative introduced in the 2016 SAA Report was designed to reduce surface impacts by increasing tunnel length and avoiding the Big Tujunga Wash Mitigation Area.⁴ The 2016 SAA Report withdrew E2a and E2b and proposed E2 Refined for further evaluation based on the following key criteria:

- The overall length of E2 Refined would be similar to the length of E2a and E2b. However, an additional 2 miles would be within tunnels near Arrastre Canyon in the E2 Refined alternative, reducing the amount of at-grade or elevated alignment overall. E2 Refined would also tunnel beneath the ANF, including the SGMNM, thereby reducing surface effects, including reduced impacts on critical biological habitat, wetlands, streams, creeks, and canals; it would also have fewer visual impacts due to less aboveground alignment.
- Less of the E2 Refined alignment would fall within a fire hazard area compared to the E2a and E2b alternatives.
- E2 Refined would optimize the Big Tujunga Wash crossing design to avoid crossing over a designated mitigation area within the wash that is owned by the Los Angeles County Flood Control District.
- Although E2 Refined would potentially displace more businesses than E2a and E2b, E2 Refined would potentially displace fewer residences than E2a and E2b.

During the refinement process, the Authority explored possible modifications to improve E3a and E3b. The potential E3 Refined alignment considered by the Authority had the same key design, constructability, and operational issues as the E3a and E3b alternatives. Although the potential E3 Refined alignment would have followed the most direct route of the alignments explored during the refinement process, it would have had the deepest tunnels, the most constrained

⁴ The Big Tujunga Wash Mitigation Area was purchased by the Los Angeles County Flood Control District in 1998 to compensate for habitat loss from regional projects. The Mitigation Area is approximately 210 acres and is located in the city of Los Angeles-Sunland area.

design, the longest construction schedule, major restrictions during operation, and increased maintenance costs. Therefore, the E3 corridor was not carried forward for further consideration.

4.2 Alternatives Carried Forward for Study in the EIS

As a result of a comprehensive alternative analysis process, the EIS evaluated six Build Alternatives: Refined SR14, SR14A, E1, E1A, E2, and E2A. The six Build Alternatives differ in linear mileage, location, and extent of tunnel, at-grade, and elevated sections of alignment. Table 4.2-1 summarizes key design metrics. Please refer to Chapter 2, Alternatives, of the Final EIS, for a more detailed discussion of the development of the six Build Alternatives, including the options previously considered for the Burbank Airport Station.

Table 4.2-1 Summary of Design Features for the Build Alternatives

Design Feature	SR14A (Selected Alternative)	Refined SR14	E1	E1A	E2	E2A
Total length (linear miles)	38.15	37.08	35.04	35.20	31.20	31.36
At-grade profile (linear miles)	6.91	6.80	7.15	6.47	5.55	4.85
At-grade covered tunnel (linear miles)	0.47	0.47	0	0	0	0
Cut-and-cover tunnel (linear miles)	1.52	1.52	2.61	1.60	1.85	0.85
Bored/Mined tunnel (linear miles)	27.95	25.58	24.64	26.31	22.48	24.14
Elevated profile (linear miles)	1.31	2.71	0.64	0.82	1.32	1.51
Number of straddle bents	2	1	1	2	1	2
Number of railroad crossings	5	3	3	5	2	5
Number of major water crossings	19	25	12	12	13	13
Number of at-grade road crossings	0	0	0	0	0	0
Approximate number of public and private roadway closures	5	9	13	12	11	10
Number of new roadway overcrossings and undercrossings	9	11	10	9	11	10

Source: Volume 1, Chapter 2, Alternatives, Table 2-12, page 2-87

Each of the six Build Alternatives would begin and end at the same locations. The northern terminus of the Build Alternatives is Spruce Court in the city of Palmdale, which connects the Palmdale to Burbank Project Section to the approved Bakersfield to Palmdale Project Section. The southern terminus of the six Build Alternatives is north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank .

The No Action Alternative (synonymous with the No Build Alternative) was also analyzed in the EIS Documents. The alternatives analyzed in the EIS Documents are the alternatives that the Authority identified as reasonable and potentially feasible and capable of meeting the project Purpose and Need.

The following sections describe the six Build Alternatives and associated facilities evaluated in the EIS Documents, which are described in detail in Chapter 2, Alternatives, of the Final EIS. As explained in Section S.13, Summary of Changes between Draft and Final EIS, in the Final EIS Summary, the Authority considered and incorporated a few minor engineering and design refinements after the publication of the Draft EIS. The refinements were considered and

incorporated for several reasons, including (1) in response to comments on the Draft EIS from agencies, stakeholders, and the public; and (2) to further minimize environmental impacts.

4.2.1 SR14A Build Alternative (Selected Alternative)

The SR14A Build Alternative would begin at grade in the vicinity of Spruce Court, crossing the current alignment of Sierra Highway just north of the East Avenue S, continuing south and curving eastward approximately 300 feet east of Una Lake. South of Una Lake, the SR14A Build Alternative would curve westward, cross over the Metrolink Antelope Valley line, Sierra Highway, and the Soledad Siphon, and continue southwest and enter a tunnel portal northeast of the Sierra Highway/Pearblossom Highway intersection. The SR14A Build Alternative would then continue westward in an approximately 13 mile-long tunnel before surfacing east of Agua Dulce Canyon Road. The alignment would transition between at-grade and elevated profiles closely paralleling SR 14 before entering an approximately 1-mile-long tunnel.

The alignment then transitions from tunnel to at grade, and then elevated profile as it passes over the Santa Clara River. Continuing from the Santa Clara River toward Lang Station Road, the SR14A Build Alternative would enter approximately short at-grade and covered twin tunnels south through the Vulcan Mine within the boundaries of the ANF, including areas within the SGMNM. On completion of the tunnels, the Vulcan Mine site will be regraded and restored to a condition better reflecting the surrounding topography.

After crossing the Vulcan Mine in at-grade and covered twin tunnels, the SR14A Build Alternative would enter approximately 12-mile-long twin tunnels with a maximum depth of approximately 2,080 feet. Construction of a portion of these tunnels would occur in the existing Vulcan Mine site and would pass underneath portions of the ANF.

South of Vulcan Mine, the SR14A Build Alternative would pass in twin tunnels beneath portions of the ANF. The SR14A Build Alternative would emerge from tunnels east of the existing Antelope Valley Metrolink Corridor near Montague Street in the Pacoima neighborhood of Los Angeles.

From Montague Street, the SR14A Build Alternative would continue south in a retained cut/trench, transitioning up to ground level, passing over the existing Hansen Spreading Grounds on embankment, before going over the Los Angeles County Flood Control Channel on a bridge and entering the existing Metrolink corridor near Sheldon Street. Continuing along the eastern side of the Metrolink Corridor, the SR14A Build Alternative would then continue south at grade, where it would cross over Tuxford Street and under the Interstate 5 (I-5) freeway. Continuing southeast from the I-5 undercrossing, the SR14A Build Alternative would transition below grade in an open trench to just north of Olinda Street. From just north of Olinda Street to just south of Sunland Boulevard, the SR14A Build Alternative would be below ground in a cut-and-cover box structure. Metrolink would remain on the surface and the Sun Valley Metrolink station would be reconstructed south of Olinda Street on the surface. South of Sunland Boulevard, the SR14A Build Alternative would continue in a mined or bored tunnel until reaching Lockheed Drive. Lockheed Drive represents the northern limit of the Burbank Subsection of the SR14A Build Alternative. From Lockheed Drive, the SR14A Build Alternative would continue in a cut-and-cover box until entering the Burbank Airport Station.

The Burbank Airport Station was also analyzed in the Burbank to Los Angeles Project Section Final EIR/EIS, and was approved by the Authority Board in January 2022 as part of its approval of the Burbank to Los Angeles Project Section. During the comment period on the Palmdale to Burbank Project Section Draft EIR/EIS, the Authority received comments specific to the Burbank Subsection, and the Final EIR/EIS includes updated analysis in response to those comments. Section 6 of this document describes updates to certain IAMFS and mitigation measures. The design for the Burbank Subsection has not changed from what was previously approved by the Authority Board, and the impact conclusions in the Palmdale to Burbank Project Section Final EIR/EIS are consistent with the conclusions in the Burbank to Los Angeles Project Section Final EIR/EIS for the Burbank Subsection (Authority 2024b).

The Burbank Airport Station will have both underground and aboveground facilities. Aboveground facilities will span approximately 70 acres and would include a station building (which would house ticketing areas, passenger waiting areas, restrooms, and related facilities), pickup/drop-off facilities for private automobiles, a transit center for buses and shuttles, surface parking areas, and stormwater capture/drainage facilities. Underground portions of the station, which include the train boarding platforms, would be beneath Cohasset Street, along which runs the boundary between the city of Los Angeles to the north and the City of Burbank to the south. There will be two HSR tracks at the Burbank Airport Station.

The Burbank Airport Station would be an underground station, beginning near Kenwood Street and extending to just north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank. South of the approved Burbank Airport Station, the Build Alternatives would join with the tunnel alignment that was studied in the Burbank to Los Angeles Project Section EIR/EIS.

4.2.2 Refined SR14 Build Alternative

The Refined SR14 alignment would begin at grade in the vicinity of Spruce Court, west of the current alignment of Sierra Highway near the intersection of Avenue S. The alignment would cross Una Lake on an embankment, requiring partial filling of the lake. North and south of Una Lake, the alignment would cross the San Andreas Fault Zone. Approximately 0.25 mile south of the current location of Una Lake, the Refined SR14 alignment would cross the current alignments of Sierra Highway and the Metrolink rail line, each of which would be relocated within the Refined SR14 Central Subsection.

As further described below, in the 19 miles between Una Lake and Lang Station, the Refined SR14 alignment would traverse a series of short tunnels, viaducts, and at-grade sections.

Continuing south from where the alignment would cross the current Sierra Highway and Metrolink corridor alignments, the Refined SR14 alignment would cross over Barrel Springs Road and continue for approximately 0.6 mile at grade before entering twin tunnels for 7.3 miles. These tunnels would have a maximum depth of 920 feet below ground surface. The tunnels would pass beneath the California Aqueduct, the SR 14 freeway, and various residential communities (including Peaceful Valley Road and other residential areas north of SR 14 freeway near the unincorporated Acton area of Los Angeles County).

After emerging from the tunnel east of Red Rover Mine Road, the Refined SR14 alignment would continue west at grade and on a viaduct over Red Rover Mine Road, Sierra Highway, the SR 14 freeway, and Escondido Canyon Road. The Refined SR14 alignment would then enter twin-bored tunnels approximately 3.1 miles long (maximum depth approximately 780 feet) and would emerge east of Big Springs Road.

Continuing southwest from Big Springs Road, the Refined SR14 alignment would be constructed at grade and on viaduct for approximately 1.5 miles before entering 0.5-mile-long twin tunnels (maximum depth approximately 250 feet). The alignment would emerge from the tunnels approximately 1.0 mile east of Agua Dulce Canyon Road. From this point, the Refined SR14 alignment would continue southwest at grade and on viaducts for approximately 1.5 miles, passing over Agua Dulce Canyon Road on a viaduct structure.

From a point about 0.5 mile west of Agua Dulce Canyon Road, the alignment would enter approximately 0.9-mile-long twin tunnels (maximum depth approximately 470 feet), following a southwesterly direction. On emerging from the tunnels, the alignment would continue at grade or on viaduct for approximately 1.7 miles, crossing the Santa Clara River, Soledad Canyon Road, and the existing Metrolink rail alignment on viaduct structures.⁵ Bents and columns of the

⁵ Following public circulation of the Draft EIS and through consultation with resource agencies, the Authority developed a design refinement in the vicinity of Bee Canyon that minimized the temporary and permanent footprint for the Refined SR14 and SR14A Build Alternatives. The temporary footprint for both Build Alternatives was eliminated between Agua

viaducts would be placed to avoid/minimize disturbance within ecologically sensitive portions of the river.

Continuing from the Santa Clara River toward Lang Station Road, the Refined SR14 Build Alternative would enter approximately 0.5-mile-long, at-grade, covered twin tunnels that would be constructed to the south through the Soledad Canyon Mining Operations (Vulcan Mine), California Mine Identification Number 91-19-0038, which is almost entirely within the boundaries of the ANF, including the SGMNM. All features south of Vulcan Mine for the Refined SR14 Build Alternative, including alignment, ancillary features, and station sites, would be identical to the features described for the SR14A Build Alternative.

4.2.3 E1 Build Alternative

The 2015 SAA Report introduced several East Corridor alignments to make a more direct connection between Palmdale and Burbank than previous options, by incorporating long tunnels beneath portions of the ANF, including the SGMNM. The E1 Build Alternative was one of several options introduced in the 2015 SAA Report, substantially refined in the 2016 SAA Report, and recommended in the Checkpoint B Summary Report for further analysis in the Final EIS. The E1 Build Alternative was intended to provide a shorter, faster, less disruptive route to connect Palmdale and Burbank compared to a corridor along the SR 14 freeway.

The E1 Build Alternative is more fully described in Chapter 2, Alternatives of the Final EIS, but some features are highlighted here. The E1 alignment would require relocation of an approximately 0.9-mile-long portion of the California Aqueduct. This alternative would also cross an unnamed wash area northwest of the existing Vincent Substation. After crossing beneath Little Tujunga Canyon Road and the San Gabriel fault, the E1 alignment would continue in a more southwesterly direction, in tunnels approximately 0.3 mile east of the Pacoima Reservoir, and would exit the ANF (remaining underground) beneath the Sylmar neighborhood of the city of Los Angeles. The E1 alignment would continue underground, crossing the Sierra Madre Fault Zone, and then passing beneath the I-210/SR 118 interchange in the Pacoima neighborhood of the city of Los Angeles, where the alignment would curve from a southerly to southeasterly direction. The E1 alignment would emerge from the tunnels immediately after passing beneath Montague Street in Pacoima.

From Montague Street, the E1 alignment would follow the same routing as described for the Selected Alternative (and the Refined SR14 Build Alternative) from the alignment's emergence near Montague Street to the end of the Central Subsection at Lockheed Drive.

Lockheed Drive represents the northern limit of the E1 Burbank Subsection. South of Lockheed Drive, all E1 Build Alternative, ancillary features, and station sites within the Burbank Subsection would be identical to the features described for the Selected Alternative.

4.2.4 E1A Build Alternative

The Authority developed the E1A Build Alternative to reduce impacts on aquatic resources south of the city of Palmdale. Because the E1A Build Alternative was developed based on the E1 Build Alternative, the above description of the E1 Build Alternative applies to the E1A Build Alternative, except as follows.

The E1A Build Alternative would begin at grade in the vicinity of Spruce Court, crossing the current alignment of Sierra Highway just north of East Avenue S, continuing south and curving eastward approximately 300 feet east of Una Lake. In contrast to the E1 Build Alternative, the E1A Build Alternative would include elevated structures to cross over the California Aqueduct before entering a tunnel portal approximately 1,900 feet southwest of the Sierra Highway/Pearblossom Highway intersection. After continuing underground for approximately 1.5

Dulce Canyon Road and Soledad Canyon Road. The permanent footprint along this area prior to the Bee Canyon design refinement was 132.74 acres (Refined SR14 Build Alternative) and 129.41 acres (SR14A Build Alternative). The Bee Canyon design refinement reduced the permanent footprint to 105.78 acres and 100.87 acres, respectively, for a reduction of 26.96 acres for the Refined SR14 Build Alternative and 28.54 acres for the SR14A Build Alternative.

miles, the E1A Build Alternative would transition to an at-grade profile approximately 350 feet north of Vincent View Road. Just south of Vincent View Road, the E1A Build Alternative would converge with the E1 Build Alternative. The remaining E1A Build Alternative south of Vincent View Road, under the ANF, including the SGMNM, into the San Fernando Valley, and to the southern terminus of the Central Subsection, would be identical to the E1 Build Alternative.

Lockheed Drive represents the northern limit of the E1A Burbank Subsection. South of Lockheed Drive, all E1A Build Alternative, ancillary features, and station sites within the Burbank Subsection would be identical to the features described for the Selected Alternative and E1 Burbank Subsection.

4.2.5 E2 Build Alternative

The E2 alignment was one of several options introduced in the 2015 SAA Report, substantially refined in the 2016 SAA Report, and recommended in the Checkpoint B Summary Report for further analysis in this Final EIS. E2 is intended to provide a shorter, faster, and potentially less disruptive route to connect Palmdale and Burbank than alignments more strictly following the SR 14 freeway corridor.

The E2 Build Alternative would be identical to the E1 alignment from Spruce Court to Aliso Canyon Road. This includes the area passing through Una Lake, the San Andreas Fault Zone, the California Aqueduct, the Santa Clara River tributary, and Aliso Canyon Road itself.

To the immediate west of Aliso Canyon Road, the E2 alignment would enter twin 16.6-mile-long tunnels, initially following a path to the southwest (maximum depth of 2,670 feet). The initial 7 miles of this tunnel would be constructed beneath the ANF, including the SGMNM. The alignment would continue southwesterly, curving to a more south-southwesterly direction as the alignment passes beneath Mendenhall Ridge Road, and then through the San Gabriel Fault.

The E2 alignment would transition from tunnel to at grade in the hills above the Lake View Terrace neighborhood of Los Angeles, near the private, unimproved BP&L Road. This tunnel portal would require approximately 28.9 acres of additional surface area disturbance in the ANF for grading and slope stabilization. After crossing the Sierra Madre Fault Zone, the alignment would continue at grade for approximately 0.2 mile before transitioning to an elevated viaduct structure. The 0.75-mile viaduct would cross over Arnwood Road, Foothill Boulevard, and the I-210 freeway, and then would continue to cross Big Tujunga Wash and cross below Wentworth Street in the Shadow Hills neighborhood of the city of Los Angeles.

After crossing Wentworth Street, the E2 alignment would continue along a relatively short (200-foot) at-grade section before transitioning to a bored/mined tunnel (maximum depth of 240 feet) for approximately 1.5 miles. This portion of the alignment would continue in the same south-southwesterly direction until approximately Peoria Street in the Sun Valley neighborhood of the city of Los Angeles. Beneath Peoria Street, the E2 alignment would curve to the southeast. At Peoria Street, the tunnel construction method could also change. North of Peoria Street, the tunnels would be bored, but between Peoria Street and approximately Fleetwood Street (0.9 mile), they would either be open cut-and-cover (maximum depth approximately 120 feet) or in continuous bored tunnels. For the purpose of this environmental review, it is assumed that the alignment would transition to a cut-and-cover tunnel in this location. Cut-and-cover is assumed because it would have impacts at the ground surface, and therefore would capture the maximum extent of effects. At Fleetwood Street, bored/mined tunneling would resume (maximum depth of 120 feet) because the E2 alignment would pass beneath Sunland Boulevard, I-5, and San Fernando Road. This tunnel would extend until San Fernando Road. At this point, the alignment would transition into a cut-and-cover tunnel that would cross San Fernando Road until Lockheed Drive, which is the southern limit of this subsection within the E2 alternative.

Lockheed Drive represents the northern limit of the E2 Burbank Subsection. South of Lockheed Drive, all E2 Build Alternative ancillary features and station sites within the Burbank Subsection would be identical to the features described for the Selected Alternative in the Burbank Subsection.

4.2.6 E2A Build Alternative

Through consultation with resource agencies, the Authority developed the E2A Build Alternative to reduce impacts on aquatic resources south of the city of Palmdale.

The E2A Build Alternative would be identical to the E1A Build Alternative from Spruce Court to Vincent View Road, where it would rejoin with the E2 Build Alternative. The remaining alignment of the E2A Build Alternative south of Vincent View Road, under the ANF, into the San Fernando Valley, and to the southern terminus of the Central Subsection would be identical to the E2 Build Alternative.

Lockheed Drive represents the northern limit of the E2A Burbank Subsection. South of Lockheed Drive, all E2A Build Alternative ancillary features and station sites within the Burbank Subsection would be identical to the features described for the Selected Alternative in the Burbank Subsection. The track alignment would be slightly different, but within the same footprint.

4.3 Reducing Adverse Effects on Environmental Justice (EJ) Communities through Range of Alternatives Refinement and Selection

The Authority has paid particular attention to reducing impacts to EJ communities where feasible and has considered this throughout the alternatives definition process. For the Palmdale to Burbank Project Section, the Authority prepared a PAA Report in 2010. This was followed by SAA Reports in 2011, 2012, 2014, and 2016. Prior to 2016, the alternatives focused on alignments that followed the SR14 freeway from Palmdale to Santa Clarita, and then followed the existing Metrolink corridor from Sylmar to Burbank (refer to Chapter 2, Alternatives, of the Final EIS for a detailed discussion of alternatives previously considered). The alignment through EJ communities in the northern part of the San Fernando Valley was met with significant opposition due to its impacts on those communities.

The 2016 SAA Report introduced the Refined SR14 Alternative into the project (the SR14A Build Alternative is identical to the Refined SR14 Build Alternative in the Pacoima and Sun Valley area). The Refined SR14 Alternative was developed to be less impactful to EJ communities than the previously developed SR14 alternatives. Specifically, the Refined SR14 Build Alternative avoided impacts to the City of San Fernando and had reduced impacts to the communities of Sylmar and Pacoima. As documented in the 2016 SAA, the Refined SR14 Build Alternative reduced residential impacts by 8 multifamily homes and 32 single-family homes. Business displacements were reduced by 125 commercial parcels and 85 industrial parcels. The number of residential properties within 2,500 feet of the HSR centerline was reduced by more than 7,000. Following a presentation of the 2016 SAA to the Authority's Board in April 2016, the Refined SR14 Build Alternative was carried forward and the previous SR 14 alternatives were dropped from consideration. The primary reason for these changes was to reduce impacts to EJ communities.

As presented in the 2016 SAA Report, the Refined SR14 Build Alternative, as well as the E1 alternative that is identical to the Refined SR14 Build Alternative in the San Fernando Valley, entered the Metrolink corridor in the vicinity of Sheldon Street. At that time, the Refined SR14 Build Alternative included a viaduct structure to carry the project up and over the Metrolink tracks so that the HSR line could enter the Metrolink corridor on the southwestern side. As the design was further developed in 2017 and 2018, and public meetings were held in 2018, significant input was received from the community and elected officials opposing the viaduct that would carry HSR over Metrolink near Sheldon Street. The primary concerns were noise and visual impacts of having the train elevated in close proximity to residential neighborhoods. As a result, the design was modified in 2018 to bring HSR into the Metrolink corridor on the northeastern side (avoiding the need for HSR to cross over Metrolink) and keeping the project at ground level through Sun Valley. This design refinement was incorporated into the design of the Refined SR14 and E1 Build Alternatives when the Palmdale to Burbank Project Section was presented to the Authority's Board at the November 2018 Board meeting. At that meeting the Board adopted the Refined

SR14 Build Alternative as the State's Preferred Alternative. The Board subsequently adopted the SR14A Build Alternative as the State's Preferred Alternative in 2020 to avoid impacts to Una Lake, a sensitive aquatic resource south of Palmdale.

4.4 Description of the Selected Alternative

The Authority has identified the SR14A Build Alternative—which consists of six different track profiles: at grade, at grade covered, cut-and-cover, retained cut/trench profile, tunnel, and elevated/aerial structure in a variety of land uses and ecoregions, including urban, rural, and mountainous terrain in Southern California, as the Selected Alternative. The Selected Alternative would include approximately 38 miles of alignment, designed at speeds that would support a 13-minute nonstop travel time, with operation time about 17 minutes. The Selected Alternative begins at Spruce Court in Palmdale and ends near Winona Avenue in Burbank, including both the Central Subsection and the Burbank Subsection, including its Burbank Airport Station, as these subsections are described in the Final EIR/EIS.

The Burbank Airport Station was also analyzed in the Burbank to Los Angeles Project Section Final EIR/EIS, and was approved by the Authority Board in January 2022 as part of its approval of the Burbank to Los Angeles Project Section. During the comment period on the Palmdale to Burbank Project Section Draft EIR/EIS, the Authority received comments specific to the Burbank Subsection, and the Palmdale to Burbank Final EIR/EIS includes updated analysis in response to those comments. The design for the Burbank Subsection has not changed from what was previously approved by the Authority Board, and the impact conclusions in the Palmdale to Burbank Project Section Final EIR/EIS are consistent with the conclusions in the Burbank to Los Angeles Project Section Final EIR/EIS for the Burbank Subsection (Authority 2024d).

For a more detailed description of the Selected Alternative, refer to Section 4.2.1, Section SR14A Build Alternative.

4.5 Environmentally Preferable Alternative

The CEQ NEPA regulations require that the ROD identify “all alternatives that were considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable.” (40 C.F.R. § 1505.2(b)). In determining an environmentally preferable alternative, the Authority weighed and balanced the physical environmental effects associated with all six project alternatives/build alternatives as well as those associated with the No Action (no build) Alternative. The Authority identified the environmentally preferable alternative by balancing the adverse and beneficial impacts of the alternatives on the human and natural environment. A determination of which alternative is environmentally superior necessarily involves a series of judgment calls about potential environmental effects, the weight to give each environmental effect, and technical realities.

The Authority determined that the adverse environmental effects associated with the project alternatives/build alternatives would be less substantial than the adverse environmental effects associated with the No Action (no build) Alternative. From a statewide perspective, this section is an essential component of the statewide HSR system and serves as the last link in the chain to achieving the benefits identified in Phase 1 of the Tier 1 analysis for San Francisco to Los Angeles Union Station. Without the HSR system, the current and projected future congestion of California's intercity transportation system will result in deteriorating air quality, reduced reliability, and increased travel times. In the meantime, California's population will likely increase by over 26 percent from 2010 to 2040, from 37.3 million people to 47.2 million people and to 52 million by 2060.

The Phase 1 system provides many benefits. The average annual savings of the Phase 1 system through 2040 is projected to be just over 1 million metric tons of carbon dioxide equivalents and, through 2079, would cumulatively total 24.7 million metric tons of carbon dioxide equivalents. The HSR system would also reduce the need for expanding airports and freeways. That would relieve pressure on existing open space areas and agricultural lands, and consequently natural resources. A new transportation option would provide an opportunity to create and support transit

centers in the central business districts, where mixed land uses (residential, commercial, and business uses) and urban densities are best suited.

In the metropolitan coastal areas and in Southern California's Inland Empire, growth and development have become increasingly challenged because of environmental constraints and quality-of-life issues, including high housing prices. Los Angeles County will likely grow by 13 percent by 2040, and the cities of Lancaster and Palmdale will likely grow by 30 and 27 percent by 2040, respectively. Many residents in the city of Los Angeles commute long distances to work. Approximately 27 percent of residents commute for 30 to 44 minutes and approximately 12 percent commute for 60 or more minutes. The percentage of commuters with a 60-minute or longer commute is higher for residents of the city of Los Angeles than for residents of Burbank and the state overall. The substantial number of commuters places a strain on the regional transportation system. Due to a large dependency on automobile transportation, the greater Los Angeles area experiences some of the worst traffic congestion among the nation's metropolitan areas. Despite past improvements to roadways, population growth and travel demand continue to strain local infrastructure. This has consequently resulted in increased congestion and delays, increased fuel consumption, and decreased air quality (SCAG 2016).

The transportation sector is responsible for about 41 percent of California's GHG emissions (CARB 2018b). Therefore, meeting federal and state air quality standards over the next 20 to 40 years will require reductions in VMT, integration of land use and transportation planning and development, development of transportation demand strategies, implementation of operational improvements, and use of new technologies that improve transportation efficiencies and increase transportation alternatives to single-occupancy automobiles. The statewide system would result in overall reductions in single-occupancy vehicle trips and aircraft activity to achieve emissions benefits; with a greater number of people traveling on the California HSR System, VMT and airplane miles would be reduced.

The build alternatives would support state and local goals of improving air quality and reducing GHG emissions. The Palmdale to Burbank Project Section would also improve access to the Hollywood Burbank Airport for residents of the Antelope Valley and Southern Central Valley. The Final EIS has shown adverse impacts from the Selected Alternative, in the absence of mitigation, from construction and operation noise, air quality, traffic, public utilities and energy, biological and aquatic resources, hydrology and water quality, paleontological resources, hazardous materials and wastes, socioeconomic and communities, parks, recreation, and open space, aesthetics, cultural resources, Section 4(f) resources, and cumulative impacts. The Authority has weighed these impacts and concluded that the benefits to transportation, mobility, air quality, and land-use pressures make the SR14A Build Alternative environmentally preferable to the No Build Alternative.

As discussed in Section 2.3 of this ROD, USACE and USEPA concurred in January 2024 that the Authority's Selected Alternative is the preliminary LEDPA, consistent with USACE's permit program (33 C.F.R. Parts 320–331) and USEPA's Section 404(b)(1) Guidelines (40 C.F.R. Parts 230–233).

The SR14A Build Alternative performs the best of the Build Alternatives on metrics for several resource areas. The descriptions below describe these areas in detail:

- **Operational Noise:** The SR14A Build Alternative would result in the fewest number of sensitive residential receivers that would experience operational noise impacts. This is primarily due to the fact this alternative would be underground, in bored tunnel through the community of Acton. After mitigation, the SR14A would result in severe effects at 11 receptors, whereas the second least impactful alternative (Refined Alternative SR14) would affect 36, with the maximum number of receptors subject to severe impacts being 69.
- **LEDPA and Waters of the U.S.:** The SR14A Alternative (in addition to the E1A Build Alternative) would have the least impact on wetland waters of the U.S. While the E2A Build Alternative would have the least impact on nonwetland waters of the U.S., the SR14A Alternative would affect lower-quality non-wetland waters than the E2A Alternative. As stated

above, the SR14A Build Alternative is the preliminary LEDPA, indicating there is no other alternative that would have a lesser adverse impact on the aquatic ecosystem. Additionally, the preliminary LEDPA determination reflects USACE and EPA's preliminary concurrence that there are no other less environmentally damaging practicable alternatives.

- **Hydrology Surface Water Resources within the ANF:** The SR14A Build Alternative (as well as the Refined SR14 Alternative) would have the lowest and least potential risk to groundwater and surface water resources because the alignment traverses areas with lower groundwater pressures and no known groundwater-dependent resources among the one High Risk Area and three Moderate Risk Areas along the alignment in the ANF. The E2 and E2A Build Alternatives would have the highest potential risk to groundwater and surface water resources when compared to Refined SR14, SR14A, E1, and E1A because of the comparatively higher groundwater pressures and greater prevalence of springs and streams with the identified High and Moderate Risk Areas.
- **Built Historic Resources:** The SR14A Build Alternative (as well as the Refined SR14 Alternative) would have the least potential for direct and indirect effects on built historic cultural resources compared to the other Build Alternatives, with two built historic resources being affected and all such effects *de minimis*. The SR14A Build Alternative (as well as the Refined SR14 Alternative) would have no effect on the Blum Ranch, the Blum Ranch Farmhouse, and the Eagle and Last Chance Mine Road because these resources are outside of their respective resource study areas (RSAs).
- **Vulcan Mine:** The SR14A Build Alternative (as well as the Refined SR14 Build Alternative) would help restore the Vulcan Mine site by depositing some spoils there to restore a more natural topography. Vulcan Mine is an inactive sand and gravel mining site, south of Lang Station Road within the ANF. GEO-MM#1 requires a restoration plan for Vulcan Mine. Restoration would improve a landscape within the ANF boundary that was affected by previous mine activities.
- **Una Lake:** The SR14A Build Alternative (as well as the E1A, and E2A Build Alternatives) would avoid adverse impacts to Una Lake. Substantial concern was raised during preparation of the EIS around this aquatic resource and the biological resources and habitat associated with Una Lake.
- **Pacific Crest Trail:** In further contrast to the Refined SR14 Build Alternative, the SR14A Alternative would not need a viaduct over the Pacific Crest Trail (PCT). The PCT is a series of ridgeline trails that extend approximately 2,659 miles along the Sierra Nevada and Cascade mountain ranges, from Mexico through California, Oregon, and Washington to Canada. The Refined SR14 Build Alternative would pass over the PCT in two locations on a viaduct, potentially affecting about 0.7 mile of trail. The SR14A, E1, E1A, E2, and E2A Build Alternatives would tunnel underneath the PCT where the PCT travels through the ANF.
- **Hansen Dam Open Space:** The SR14A Build Alternative (and the Refined SR14, SR14A, E1, and E1A Build Alternatives) would cause fewer impacts than the E2 and E2A Build Alternatives by avoiding the Hansen Dam Open Space. E2 and E2A Build Alternatives would result in direct impacts on the Hansen Dam Open Space. The direct and indirect impacts on the Hansen Dam Open Space under the E2 and E2A Build Alternatives would represent the one of the largest direct and indirect impacts on park and recreational resources among Build Alternatives. During the development of the EIS, substantial concerns from the public and agencies were raised regarding construction and operation impacts of certain build alternatives (not SR14A) on recreational uses in the Big Tujunga Wash and the Hansen Dam Open Space Areas.
- **Aesthetics:** In general, during construction the SR14A Build Alternative (and the E1, and E1A Build Alternatives) would cause fewer and less variety of visual impacts than the Refined SR14, E2, and E2A Build Alternatives would cause. Although the SR14A Build Alternative would potentially cause aesthetic effects to areas such as near Agua Dulce Canyon Road and Soledad Siphon, the SR14A, E1, and E1A Build Alternatives would include the greatest

- extent of tunnels in terms of distance and would thus result in the least visual impact on its surroundings.
- **Residential Displacements:** The SR14A Alternative would be roughly tied with the E1A alternative for second-least residential displacements among the Build Alternatives, although it could potentially result in fewer displacements than E1A. E2A would have the most (64), followed by Refined SR14 (51–54), then E2 (49), then E1A (39–44) and SR14A (39–42), then E1 (24–29). Additionally, the EIS found that there is no deficit of available replacement housing units for the SR14A Build Alternative.
 - **Hansen Dam Spreading Grounds:** The SR14A Alternative crosses the Hansen Spreading Grounds. However, several other alternatives (Refined SR14, E1, and E1A Build Alternatives alignments) will also similarly cross these Grounds and have similar impacts. Additionally, mitigation has been designed to offset impacts to the spreading grounds in coordination with the Los Angeles County Flood Control District to maintain the groundwater recharge function and capacity of the Spreading Grounds.

For these reasons, the Authority has identified the SR14A Build Alternative as the Environmentally Preferable Alternative.

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5 SUMMARY OF POTENTIAL EFFECTS

Construction and operation of the Selected Alternative has the potential to affect a variety of environmental and social resources. Impacts on these resources could be adverse or beneficial. A NEPA impact determination requires consideration of both context and intensity. Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, of the Final EIS includes a full discussion of the potential impacts of the Palmdale to Burbank Project Section, organized by resource area. To fully understand the potential range of impacts of the Selected Alternative, the Final EIS analyzed all reasonably foreseeable environmental impacts resulting from its construction and operation.

- Although there would be no adverse impacts in certain resource areas after mitigation, this document includes a discussion of the Authority's effects analysis for these resources due to the strong public and agency interest in these issues throughout the process.

The following sections summarize the adverse and the beneficial impacts that may occur with construction and operation of the Selected Alternative.

5.1 Transportation

5.1.1 Construction

For all the Build Alternatives, spoils hauling will result in adverse effects on transportation. For the Selected Alternative, spoils hauling would cause adverse effects at five roadway segments, two freeway segments, and fifteen intersections. Spoils hauling would not only affect drivers, but also transit riders. Transit delays could conflict with the efficiency goals of regional and local transportation plans. However, spoils hauling would only occur during the construction period, and would not permanently interfere with the transit system. Additionally, the Authority would implement numerous IAMFs to avoid or minimize effects during construction spoils hauling, such as contractor requirements to avoid or minimize circulation impacts due to road closures and impacts due to construction within existing railroad rights-of-way. The Authority would also develop a Transportation Construction Management Plan (CMP) to address traffic circulation during spoils hauling activities, including by relocating spoils collection areas and access to minimize effects during peak hours. The CMP would also mitigate these effects by outlining transportation detours, plans to accommodate emergency service routes, and outreach activities to manage expectations and traffic constraints, among other items. Spoils hauling impacts on roadway segments, intersections, and freeway segments would remain adverse after mitigation.

Existing freight and passenger rail services would continue without interference with implementation of the six Build Alternatives. While each Build Alternative has slightly different impacts, temporary tracks (TR-IAMF#9) would ensure existing rail services continue without interference. Travel delay to transit services induced by the Palmdale to Burbank Project Section would result in a conflict with policies and plans related to transit circulation. Project construction could interfere with transit service schedules such that routes may not operate on schedule. Mitigation measures would require a Transit Coordination Plan as well as In-Lieu Traffic Improvements to reduce impacts on transit providers. Impacts would not be adverse.

Construction activities associated with the six Build Alternatives could require temporary lane or road closures, underground utility work, or construction-related trips that could interfere with vehicles, pedestrians, bicyclists, transit routes, and local access throughout the Palmdale to Burbank Project Section. Implementation of TR-IAMF#1 through TR-IAMF#7, TR-IAMF#11, and TR-IAMF#12 will prevent circumstances that substantially would interfere with vehicle, pedestrian, bicyclist, and transit circulation or access during construction. Implementation of the IAMFs will repair structural damage to public roadways resulting from construction, require that construction-related trips would occur in off-peak hours, and would require the contractor to prepare and implement specific CMPs to ensure access during construction. These measures include scheduling a majority of construction-related travel during off-peak hours and, where feasible, temporarily removing on-street parking to maximize vehicular capacity, transit capacity, and

bicycle circulation at locations affected by construction closures. On completion of construction, facilities would be restored to a condition equivalent to or better than their pre-construction condition. Impacts would not be adverse.

Construction could create temporary increases in automobile delay and travel time on roadway segments and intersections during construction of the Palmdale to Burbank Project Section. Impacts would not be adverse.

Freeway segments within the transportation RSA would not be affected by the six Build Alternatives under Existing (2015) Plus Construction Conditions. Freeway segments in the Central Subsection were not anticipated to have more than 50 project-related trips on any segment because trips would be distributed throughout the subsection. Therefore, none of the freeway segments in the Central Subsection met the threshold for further analysis. All freeway segments in the Burbank Subsection would operate at adequate LOS and would not increase V/C by 0.02 or more. Impacts would not be adverse.

The Burbank Subsection would require the realignment of San Fernando Boulevard, which would close the current pedestrian access along San Fernando Boulevard, Arvilla Avenue, Lockheed Drive, Cohasset Street, and Hollywood Way. The proposed San Fernando Boulevard realignment would provide sidewalks, curb ramps, and crosswalks along the roadway and at the intersection realignments with Arvilla Avenue, and Hollywood Way. The Burbank Subsection proposes two pedestrian overpasses that would provide access from San Fernando Boulevard to the Burbank Airport Station, plus one pedestrian overcrossing that would link the two sides of the approved Burbank Airport Station. The Burbank Airport Station would include bike racks, pedestrian connections to the existing sidewalks, and bike lanes/facilities, where feasible. Existing and planned pedestrian and bicycle facilities serving the vicinity of the approved Burbank Airport Station would adequately meet the Palmdale to Burbank Project Section demand. However, coordination with the City of Burbank during the station planning and roadway design phase would be required to address impacts on pedestrian and bicyclist access and circulation. Impacts would not be adverse.

5.1.2 Operation

Operation would generate new trips near the Burbank Airport Station, which would result in roadway segment and intersection impacts. Nevertheless, with mitigation like new traffic signals and widening an intersection, existing freeway infrastructure could accommodate that traffic without affecting any freeway's LOS. The Selected Alternative (as well as all five other Build Alternatives) would also reduce vehicle miles traveled (VMT) from the regional roadways as people use the HSR instead of driving. Project features to address nonmotorized travel impacts include providing and maintaining pedestrian and bicycle accessibility across the HSR corridor, to and from stations, and on station property. The Selected Alternative's overall impact on transportation resources in the region and state will be beneficial through substantial reductions in VMT, increased transit connectivity, and reduction in the need to expand freeways and airports.

5.2 Air Quality and Global Climate Change

5.2.1 Construction

Construction emissions would exceed the annual applicable South Coast Air Basin *de minimis* General Conformity level(s) and applicable South Coast Air Quality Management District (SCAQMD) threshold(s). The specific construction year and pollutant-type exceedances vary between the Build Alternatives, yet no deviations are large enough to make one Build Alternative substantially less impactful than another. Within the South Coast Air Basin, construction of the Selected Alternative (as well as the Refined SR14, and E2A Build Alternatives Build Alternatives) would result in exceedance of nitrogen oxides (NO_x), and subsequently an exceedance of nitrogen dioxide (NO₂) as a subset of NO_x, and carbon monoxide (CO) levels, while construction of the E1, E1A, and E2 Build Alternatives would result in exceedance of the NO_x level. Within the Mojave Desert Air Basin, construction of the E2A Build Alternative would result in exceedance of the Mojave Desert Air Basin *de minimis* General Conformity level and Antelope Valley Air Quality

Management District CEQA threshold for NO_x. The Selected Alternative (as well as the Refined SR14, E1, E1A, and E2 Build Alternatives) would avoid this impact.

To reduce impacts on the environment, the Selected Alternative will employ measures to reduce fugitive dust emissions, use renewable diesel fuel in construction diesel equipment and on-road diesel trucks, and reduce criteria exhaust emissions from both on-road construction vehicles and heavy-duty off-road construction equipment.

5.2.2 Operation

Operation is anticipated to have a beneficial effect on (i.e., a net reduction of) statewide GHG emissions over the No Action Alternative. There would be no difference in operating GHG emissions between the Selected Alternative and the five other Build Alternatives because the regional change in vehicle emissions and indirect energy use would be the same. Annual reductions would range from 1.1 million metric tons carbon dioxide equivalent to 1.7 million metric tons carbon dioxide equivalent in 2040, depending on the ridership scenario.

5.3 Noise and Vibration

5.3.1 Construction

While the intensity of construction-related noise effects would be similar between the Selected Alternative and the other five Build Alternatives, the E2 Build Alternative and the E2A Build Alternative would require at-grade construction work adjacent to more communities than the other Build Alternatives, resulting in more sensitive receivers being exposed to construction noise. The Selected Alternative (as well as the Refined SR14 Build Alternative) would be constructed above ground in an area of low-density residential development in Agua Dulce. While the E1, E1A, E2, and E2A Build Alternatives would avoid that community, they would involve at-grade construction work in a community located near the SCE Vincent Substation. Additionally, the E2 and E2A Build Alternatives would involve at-grade construction work in the communities of Lake View Terrace and Sun Valley.

Removing of spoils from tunnel portals could take over 6 years, depending on the Build Alternative and portal. Trucks would haul most spoils from tunnel portals to disposal sites, but some spoils would be transported by conveyor systems. A noise assessment was conducted to determine the impacts of spoils haul trucks enroute to the spoils site. Spoils hauling for most Build Alternatives would cause severe noise impacts, but for the Selected Alternative, the spoils hauling would not result in adverse noise effects on sensitive receptors.

5.3.2 Operation

Operation would generate noise levels above ambient levels from train passbys and/or train horns (to provide advance warning of trains approaching HSR platforms), resulting in adverse impacts from the exposure of sensitive receptors to severe noise. With the mitigation measures identified in the Mitigation Monitoring and Enforcement Plan (MMEP), which include noise barriers, the Selected Alternative would result in less noise effects. After mitigation, the Selected Alternative would result in 11 severe impacts, while the other Build Alternative would result in severe impacts to 36 to 69 receptors. Overall, the Selected Alternative would result in the fewest number of sensitive residential receivers that would experience operational noise impacts.

5.4 Public Utilities and Energy

5.4.1 Construction

The Selected Alternative (and the E1A, and E2A Build Alternatives) would require reconfiguring the Acton Water Treatment Plant. The Authority has committed to coordinating with Antelope Valley-East Kern Water Agency to ensure that all replacement/relocated facilities are in place, tested, and operational before any part of the existing Acton Water Treatment Plant is taken offline so that the Acton Water Treatment Plant would remain operable.

Although construction would generate wastewater, none of the wastewater would be directly piped back into local wastewater treatment systems, collection systems, or treatment plants. Some of this wastewater would also be collected in water retention ponds or treated in the same capacity, and like the tunnel spoils, would be hauled off site. Although the total amount of wastewater generated during construction would differ between the six Build Alternatives based on construction factors (e.g., length of tunnels), the Build Alternatives would result in similar types of wastewater effects during construction.

Construction of the Selected Alternative (as well as the five other Build Alternatives) would require water use for tunnel boring machine operations, for increasing the water content of soil to optimize tunneling and to prepare concrete. It would also use smaller amounts for dust control, for reseeding construction areas, for construction worker consumption, and for other reasons. Under the No Action Alternative, local water providers predict availability of sufficient water supplies to meet future demands, assuming normal rainfall conditions. The EIS, however, also assessed a more conservative scenario where, in the event of single or multiple dry year conditions, water demands could exceed supplies.

While the Selected Alternative would have among the higher amounts of annual water demand due to its higher use of tunnel boring machines, a detailed analysis of water service providers, including both potable and recycled water, was completed for the EIS. Based on review of water providers in the project area, including review and analysis of existing plans such as Urban Water Management Plans and communications with staff at water agencies, the Authority has identified a portfolio of water supplies that could meet the project's temporary water demand during construction during normal years, as well as dry and multiple dry years. The Authority has also identified recycled water providers with available supply during dry and multiple dry years that can be used in the event of water curtailment for the project.

5.4.2 Operation

Operating high-speed trains, stations, and maintenance facilities requires water. Because no Build Alternative would have planned stations or maintenance facilities in the Central Subsection, the operation of the railway tracks would have no permanent operations water demand there. The Burbank Water and Power UWMP shows adequate capacity to serve the planned land uses within that service area. Regardless of the Build Alternative selected, the operation of the Burbank Airport Station would result in a 15 percent decrease in water demand when compared to the existing land uses.

5.5 Biological and Aquatic Resources

5.5.1 Construction

All Build Alternatives would have the potential to affect biological resources, including plant species and habitat, fish and wildlife species and habitat, and wetlands and other waters. The degree to which the Build Alternatives could affect each biological and aquatic resource varies, as do the specific resources that each Build Alternative could affect.

The Selected Alternative (and the Refined SR14 Build Alternative) would have the least potential effects on groundwater that supports habitat for plant species and communities as well as habitat for wildlife. The Selected Alternative (and the Refined SR14 Build Alternative) would have the least number of impacts from groundwater loss on state and federally protected aquatic resources and on aquatic resources.

For FESA-listed plant species, the Selected Alternative has the same effects as the other Build Alternatives, absent mitigation. The six Build Alternatives would also affect the same 42 non-FESA-listed special-status plant species, and 7 special-status plant communities. The Refined SR14 Build Alternative would affect the most acres of special-status plant species habitat and special-status plant communities and the E2 Build Alternative would affect the most acres of special-status plant communities.

All Build Alternatives would affect approximately the same number of FESA-listed wildlife species. The Selected Alternative (as well as the Refined SR14 Alternative) may affect the second fewest non-FESA-listed species (46 species each). The E2 and E2A Build Alternatives may affect the most non-FESA-listed species (47 species each), and the E1 and E1A Build Alternatives may affect the fewest (43 species each). With mitigation and related measures, the Selected Alternative was found to have no adverse effects.

Without mitigation and related measures, the Selected Alternative has similar impacts to the Refined SR14, E2, and E2A Build Alternatives with respect to federally designated critical habitat. However, several mitigation measures would provide avoidance, minimization, and compensatory mitigation for the impact such that it would no longer be a substantial adverse effect on designated critical habitat, avoiding the adverse impact for the Selected Alternative (in addition to the Refined SR14, E2, and E2A Build Alternatives).

To avoid adverse effects on these species and this habitat, the Authority conducted a thorough analysis of impacts with implementation of the associated IAMFs and where it was determined that the impacts were significant after application of IAMFs, the Authority developed mitigation measures (MMs) to further reduce impacts. With implementation of mitigation measures, the Selected Alternative would result in no adverse effect under NEPA.

5.5.2 Operation

Ongoing operations and maintenance activities (e.g., routine inspection and maintenance of the HSR right-of-way, including tunnel portals) could directly or indirectly affect special-status species and habitat as activities may occur in areas where impacts on special-status species habitat had previously been restored. Noise created by train operations has the potential to affect wildlife movement and use of habitat. These effects are moderated by the extensive tunnel portions of the alignment (where train noise effects are avoided), the presence of an extended quiet period during defined nighttime hours for surface infrastructure, and proposed sound barriers where train noise from surface alignments exceed thresholds.

The Selected Alternative would have the least effect on wildlife movement when compared to the E2A, E1, and E2 Build Alternatives because it has the longest total distance of tunnels and viaducts in critical wildlife movement areas. The Selected Alternative would have the same wildlife corridor permeability percentage when compared to the Refined SR14 and E1A Build Alternatives. These permeable areas, which are conducive to wildlife connectivity, occur where the Build Alternatives would be elevated on a viaduct or underground in a tunnel.

The Selected Alternative would also have the fewest at-grade segments (two segments versus between three to four segments on the other Build Alternatives) that could represent a barrier to wildlife movement, as identified by the *Palmdale to Burbank Project Section: Wildlife Corridor Assessment Report* (Authority 2019).

For the Selected Alternative, the Authority identified all feasible opportunities for wildlife crossings to support permeability near or around at-grade segments. The Authority has committed to installing one wildlife crossing south of the California Aqueduct and one wildlife crossing east of Una Lake. Of the remaining nonurban at-grade segments that exceed the recommended crossing interval threshold length mentioned above, none would benefit from wildlife crossings because they would be adjacent to existing constraints, making crossing opportunities neither feasible nor beneficial to wildlife.

Collectively, the above MMs would avoid and minimize operational impacts. With implementation of MMs, the Build Alternatives would result in no adverse effect.

5.6 Hydrology and Water Resources

Groundwater and Related Surface Water Resources within the ANF

The Selected Alternative (as well as the Refined SR14 Build Alternative) would have the lowest risk of potential impacts on surface water resources of the Build Alternatives because the alignment traverses areas with lower groundwater pressures and no known groundwater

dependent resources within identified High and Moderate Risk Areas of the ANF. High Risk areas include areas where faults are present and groundwater pressure is highest. Without appropriate design, tunnels anticipated in all Build Alternatives could provide a conduit for groundwater to seep into excavated areas as the advancing tunnel construction intersects subsurface fractures and faults in bedrock that contain water. The Authority accounted for the possible risks on surface hydrologic resources related to tunnel by implementing state-of-the-art design features and construction methods to avoid and minimize such impacts, including through the use of tunnel boring machines (TBMs) with technical features like grouting to reduce or prevent inflows and water seepage.

Additionally, the Authority chose the Selected Alternative because it (and the Refined SR14 Alternative) intersects the fewest known groundwater risk areas (3 moderate, 1 high) when compared to the other four Build Alternatives (6 high and 5 moderate for E2 and E2A Alternatives; 4 moderate and 2 high for the E1 and E1A alternatives). The Selected Alternative (as well as the Refined SR14 Build Alternative) alignment have the fewest total known springs, streams, and known active wells within Moderate and High Risk Areas (0 streams, 0 known springs, 0 known active wells), when compared to the other Build Alternatives (8 streams, 6 springs, and 1 active well for the E2 and E2A alternatives' risk areas and 4 streams, 1 spring, and 1 known active wells for E1/E1A alternatives). The Authority also has identified a number of IAMFs and mitigation measures (HWR-MM#s) in its MMEP to avoid, reduce, or mitigate the risk of adverse effects to groundwater.

With the choice of the Selected Alternative, the project's TBM design features, construction methods, and the Authority's proposed mitigation measures, tunnel construction is not expected to result in groundwater-related impacts to surface resources or wells, and is not anticipated to need supplemental water for surface resources.

Private Wells

Outside the ANF, tunnel depths would be shallower than in the ANF and the tunnels would not encounter high water pressures during construction. Because of the shallow depth of the tunnels, and the correspondingly relative low water pressures at those depths, the risk of effects are lesser, fewer measures are needed, and the effects on groundwater would be avoided through the Authority's proposed IAMFs, which include tunnel design and construction methods outlined in the IAMFs.

Tunnel construction outside the ANF could result in the inflow of groundwater into tunnels where the tunnel depth may encounter the groundwater table or perched groundwater. This could lower groundwater levels locally in proximity to the tunnel alignment of the Preferred Alternative, which could adversely affect groundwater and wells if present nearby. HYD-IAMF#5, HYD-IAMF#6, and HYD-IAMF#7 require design features and construction methods that will address potential groundwater seepage, including the installation of tunnel linings. Because of the low water pressures expected to be encountered, these measures would be sufficient to effectively avoid and minimize inflows into the tunnels. As such, groundwater inflow during construction, if any, would be minimal and temporary, and would not cause a substantial decrease in groundwater supplies or interfere substantially with groundwater recharge such that the Preferred Alternative may impede sustainable groundwater management.

The Final EIR/EIS concluded that available information on the location of private wells outside the ANF is limited, and it is unknown whether tunnel construction would directly impact private water supply wells. Because of the limited information, there is the potential that all Build Alternatives (including the Selected Alternative) could affect wells, absent additional measures from the Authority, their quality and quantity of water and/or their physical integrity, if any wells are located directly in the path of the tunnels.

To avoid or reduce the risk of adverse effects to wells outside the ANF, the Authority identified a number of measures such as HYD-IAMF#8, which include measures to continuously monitor groundwater quality or quantity in private water wells before, during, and after tunnel construction

and options to replace wells, including measures to ensure replacement wells are equivalent in water capacity and quality.

Groundwater Recharge Resources

The Selected Alternative would also avoid adverse impacts to groundwater recharge in the Una Lake area caused by other Build Alternatives (Refined SR14, E1, and E2). These other alternatives would have partially filled Una Lake and crossed the lake on an embankment, which would reduce Una Lake's potential for recharge of underlying groundwater basins. Generally, impermeable surfaces created by the Build Alternatives can disrupt the infiltration of water from the surface to groundwater basins, permanently affecting groundwater recharge. Some areas of impermeable surface and some design features (permeable ballast and sub-ballast for at-grade alignment profiles) would reduce or not result in impacts on recharge. The Selected Alternative has the same effects to groundwater recharge at the Hansen Spreading Grounds as the Refined SR14, E1, and E1A Build Alternatives, as these grounds recharge the San Fernando Groundwater Basin. With mitigation identified by the Authority in the MMEP, effects to these grounds would not be adverse.

Other Effects

The presence of infrastructure, as well as the discharge of fill associated with the construction, in surface waterbodies could permanently alter waterbody capacity and drainage patterns. The Selected Alternative has comparable numbers of surface water crossings with the other Build Alternatives, with the Selected Alternative (in addition to the E1A and E2A Build Alternatives) having the fewest (3) viaduct crossings. Water crossings will be required to maintain preconstruction hydraulic capacity.

While excavation and tunneling in areas of high groundwater could introduce pollutants and mobilize existing soil or groundwater contamination within the groundwater basins traversed by all the Build Alternatives, the choice of the Selected Alternative reduces effects in this area. The Refined SR14 Build Alternative would result in the largest amount of footprint overlying groundwater basins and would pose the highest risk of groundwater contamination from dewatering and excavation in areas with high groundwater.

5.7 Geology, Soils, Seismicity, and Paleontological Resources

5.7.1 Construction

During construction, earthquakes could create risks to in-progress structures, construction equipment, workers, and members of the public by ground shaking and seismically induced dam failures. The Authority will implement engineering and safety protocols to limit fault rupture and ground shaking hazards during construction.

The Selected Alternative (as well as the five other Build Alternatives) would have similar likelihoods of encountering abandoned mine facilities. IAMFs would require monitoring and construction practices to reduce or avoid most impacts associated with hazardous mine conditions. GEO-MM#2 would require a slope failure evaluation and evacuation plan for areas where grading, building, or disposal activities would occur underground or below grade. This plan would evaluate slope failure hazards at existing mine disposal sites and would implement evacuation procedures to minimize the risk of injury resulting from accident conditions.

Several geologic units within the Selected Alternative's (as well as the five other Build Alternatives') paleontological resources RSA would have potential to yield paleontological resources during construction. The Selected Alternative (as well as the Refined SR14 Build Alternative) would have the most surface profile and surface footprint through geologic units with high or low paleontological sensitivity and would have the highest likelihood to encounter paleontological resources during surface construction activities. IAMFs would require paleontological monitoring and recovery plans to protect paleontological resources encountered by construction activities.

During the design phase of the approved project and prior to start of construction, the Authority plans to complete several hundred borings, cone penetration tests, fault trenches, and geophysical surveys. The estimated number, type, and depth of explorations will depend on the design features and will be determined as the design progresses, in consultation with the USFS. To address one of the most important features of the TBMs tunneling in rock, the project will require advanced exploration ahead of the machine and pre-excavation grouting as a measure to detect and improve rock/soils conditions for tunneling in zones of sharply contrasting rock properties, highly fragmented rock that could be encountered in an inactive fault zone, and potential of water inflow.

5.7.2 Operation

During operation, seismic hazards include seismicity and the direct impacts of an earthquake, such as damage to project elements and injury or loss of life of passengers or personnel. A seismic event in one of these fault systems could result in fault rupture or ground shaking at or near project trackway (including at grade, viaduct, and tunneled profiles) or ancillary features (tunnel portals, adits, access roads, power substations, utility corridors, spoil disposal sites, and drainage facilities). Project design would incorporate early warning systems to track strong ground motion associated with fault rupture. Earthquake early warning systems like ShakeAlert in California work because the warning message can be transmitted almost instantaneously. Other countries have used these systems effectively.

Project design will account for the possibilities that fault rupture could affect the tunnel structures, could alter tunnel integrity, or could damage or destroy project elements. At the San Gabriel and Sierra Madre Fault Zones, the tunnel design would include fault chambers, which are additional excavated spaces designed to help accommodate fault displacement at subsurface fault crossings.

5.8 Hazardous Materials and Wastes

5.8.1 Construction

Construction of any of the six Build Alternatives would involve the use, storage, transport, and disposal of the following types of hazardous materials and wastes:

- Substances commonly used at construction sites, such as diesel fuel, welding materials, lubricants, paints, solvents, and cement products
- Waste materials generated during tunneling, such as ACMs, mercury, heavy metals, drilling fluids, and/or groundwater removed by dewatering
- Waste materials generated through the demolition of structures, such as ACM, LBP/LCM, and PCBs
- Existing soil or groundwater contaminated by VOCs, petroleum hydrocarbons, ADL, pesticides, herbicides, asbestos, heavy metals, or other hazardous materials or wastes

Various IAMFs and mitigation measures would be implemented to reduce impacts, such as through establishing plans for the safe handling of hazardous materials during construction, including those materials associated with contaminated soils or groundwater.

The Selected Alternative will tunnel for longer distances and will have fewer portals than the Refined SR14 Build Alternative and the same number as the other Build Alternatives. Having fewer portals would reduce the number of locations where the project would handle hazardous materials and wastes such as potentially contaminated soils from tunnel spoils.

Nonetheless, in all the Build Alternatives, tunneling would excavate potentially contaminated soils (tunnel spoil materials) that would require extraction, transport, and safe disposal. The quantities of Class I/II Hazardous, Designated Waste and Class III Nonhazardous, Contaminated Waste for the Selected Alternative and the Refined SR14 Alternative are estimated to be greater than their quantities in the other Build Alternatives.

All hazardous materials, soils, drums, trash, and debris generated during construction would be handled and disposed of in accordance with to State and federal regulations, and complying with existing regulations and would protect the public and environment from exposure to substantial hazards. Indeed, the Authority would implement numerous IAMFs to establish plans for the safe handling of hazardous materials during construction, including those materials associated with contaminated soils to ensure hazardous materials are properly handled and there are no adverse environmental or safety impacts.

5.8.2 Operation

Operations of the six Build Alternatives would require the use of hazardous materials and would generate hazardous wastes associated with routine maintenance, but measures would prevent an adverse impact. Hazardous materials would include wastes such as herbicides, lubricants, and janitorial supplies, which would be used at the station areas, ancillary facilities, and along the trackway. The Selected Alternative would operate along the longest linear alignment and would thus have the potential to experience the most operational hazards associated with the use, storage, transport, and disposal of hazardous materials. Overall, operations would have a low risk of creating potential accident conditions that could result in a large hazardous materials release. HSR trains would not transport hazardous materials and would not risk collision with other vehicles handling hazardous materials. Adherence to federal and state regulations would regulate the proper use, transportation, storage, and disposal of hazardous materials. IAMFs will minimize the use of hazardous materials for each of the six Build Alternatives and would require preparation of hazardous materials monitoring plans during operations.

5.9 Safety and Security

5.9.1 Construction

Construction would require permanent road closures that could disrupt traffic patterns, including emergency vehicle access. The Selected Alternative would result in 5 permanent road closures, the fewest of all six Build Alternatives. The Refined SR14, E1, and E2 Build Alternatives would involve 9, 13, and 11 permanent roadway closures, respectively. The E1A, and E2A Build Alternatives would involve 12, and 10 permanent roadway closures, respectively.

Causing fewer road closures reduces the possible impacts on emergency response times compared to the other Build Alternatives. The Authority will mitigate any effects by developing and implementing a construction safety transportation management plan (SS-IAMF#1) that will incorporate emergency vehicle access procedures.

5.9.2 Operation

HSR trainsets and fixed infrastructure would employ the latest safety features and designs to enable the trains to stay upright and in-line in the event of a derailment. A basic design feature of an HSR system is to contain trainsets within the right-of-way. Strategies to ensure containment include operations and maintenance plan elements that would ensure high-quality tracks and vehicle maintenance to reduce the risk of derailment. Also, physical elements, such as containment parapets, check rails, guard rails, and derailment walls, would be used in specific areas with a high risk of or high impact from derailment. Concrete derailment walls are like tall curbs that run close to the train wheels. In the event of a derailment, these walls keep the train within the right-of-way and upright.

The Build Alternatives each include provisions for emergency service access to tunnels including, but not limited to, the following:

- Permanent access roads would be built to provide at least one access portal for each tunnel to support tunnel operations and maintenance activities. Tunnel portal areas would include areas for staging of emergency response vehicles and personnel and safe evacuation and assembly of passengers.

- For tracks in tunnels, passenger walkways would be incorporated to allow emergency access and evacuation routes. Passenger walkways would be located along the tunnel walls on the same side as the access/egress points, where possible, and would be illuminated to provide safe passage in the event of an emergency.
- Tunnel design would include a central, fire-rated dividing wall that would separate the two tracks of each single tunnel into two independently ventilated railways to allow access in the event of an emergency. Safety egress would be achieved via fire-rated doorways through the tunnel dividing wall (Authority 2010).

Finally, the Build Alternatives would not include at-grade road crossings, thereby preventing vehicles, bicycles, and pedestrians from crossing the tracks. There would be no crossings where motor vehicles, bicycles, or pedestrians could cross the tracks at-grade. As a result, the potential hazards of at-grade crossings would be eliminated.

5.10 Socioeconomics and Communities

5.10.1 Construction

During construction, all Build Alternatives could temporarily disrupt communities where aboveground construction activities would take place. Effects would include increased noise levels, fugitive dust, increased traffic and congestion, and additional light and glare.

The Selected Alternative would affect the fewest number of residential communities. The Selected Alternative (as well as the Refined SR14, E1, and E1A Build Alternatives) would require at-grade construction work near single-family residences in the Sylmar neighborhood and all the Build Alternative would require at-grade construction within the community at the Boulders at the Lake Mobile Home Park just south of Lake Palmdale.

The Refined SR14 Build Alternative would, however, also require the construction of at-grade and elevated alignment near Acton along Red Rover Mine Road, Big Springs Road, and Rolling Ranch Road, and would cause temporary construction impacts that would introduce new physical barriers which would divide the unincorporated community of Acton.; the Refined SR14, E1, and E2 Build Alternatives would involve at-grade construction activities in the community of Harold within the city of Palmdale, as well.

The E1, E1A, E2, and E2A Build Alternatives would involve at-grade construction work near single-family residences in the unincorporated community surrounding the Southern California Edison (SCE) Vincent Substation (which the E2 and E2A Build Alternatives would avoid). The E2 and E2A Build Alternatives would involve at-grade construction work in the Los Angeles communities of Lake View Terrace and Sun Valley (which the other Build Alternatives would avoid). Although the intensity of construction-related effects would be similar for all the Selected Alternative and the five other Build Alternatives, the E2 Build Alternative would require at-grade construction work adjacent to the most communities compared to the other Build Alternatives.

During operations, the Selected Alternative (as well as the Refined SR14, E1, and E1A Build Alternatives) would not result in the displacement of community facilities. A portion of the E2 and E2A Build Alternatives would involve cut-and-cover tunnel construction near Glen Oaks Boulevard in Sun Valley which would displace a Los Angeles County Department of Public Social Services facility. The Selected Alternative would avoid this impact.

5.10.2 Operation

Once constructed, operations of the Selected Alternative would not displace community facilities or further divide communities.

5.11 Station Planning, Land Use, and Development

5.11.1 Construction

Construction of the Selected Alternative (as well as the other five Build Alternatives) would require the temporary use of land as construction staging areas. Construction staging areas within the Selected Alternative would result in approximately 100 acres of temporary impacts, and the other Build Alternatives would impact between 66 and 144 acres. Construction staging areas would temporarily change the intensity of the planned land use during the construction period; however, conflicts with the land use designation would not be permanent.

During construction, the Selected Alternative (and the Refined SR14 Build Alternative) would impact Acton, Agua Dulce, Sun Valley, and Burbank near Hollywood Burbank Airport. The E1 and E1A Build Alternatives would also result in impacts to the communities of Acton, Sun Valley and Burbank. The E2 and E2A Build Alternatives would result in impact to the Lake View Terrace and Shadow Hills communities, which would not be impacted under the Selected Alternative, in addition to the Acton, Sun Valley and Burbank Communities. However, with adherence to the Authority's CMP and other noted IAMFs, and identified mitigation measures, these effects would be temporary and would not cause substantial changes to land use patterns.

5.11.2 Operation

Implementation of the Palmdale to Burbank Project Section would result in the permanent conversion of land from a non-transportation use to a transportation use. The Selected Alternative (as well as the other five Build Alternatives) would indirectly affect existing and planned land use patterns causing increases in wind, noise, and visual changes within sensitive land uses. Implementation of mitigation measures would minimize the potential for construction of the Selected Alternative and the five other Build Alternatives to cause a substantial change in land use patterns. The Selected Alternative would change land uses of between 1,246 to 1,328 acres. The other Build Alternatives' impacts range between 984 and 1,597 acres. Most of these lands are vacant.

5.12 Parks, Recreation, and Open Space

5.12.1 Construction

Although the total number of resources potentially affected (within 1,000 feet of proposed HSR infrastructure) would differ among the Build Alternatives, the most impacts (i.e., direct acquisition of parkland and/or realignments of trails) would occur as a result of the E2A Build Alternative.

While not impacting certain surface recreational resources (proposed Vasquez Loop Trail extension, proposed Little Rock trail extension, Darrel Readmond Trail, and the Pacific Crest Trail) where in tunnel, the Selected Alternative would affect three park, recreational, and open space resources. However, the Selected Alternative's effects on these resources are often lesser than the effects of the other Build Alternatives on these same three resources:

- **Palmdale Hills Trail (proposed extension):** All Build Alternatives would temporarily restrict access to a segment of the trail during construction, and operation would involve an at-grade railway alignment that would conflict with the trail extension and require realignment of portions of the trail extension.
- **Littlerock Trail (proposed extension):** The Selected Alternative (as well as the E1A and E2A Build Alternatives) would be built as bored tunnels and so there would be no direct impact to the trail extension. The Refined SR14 Build Alternative would require construction of a new traction power facility and overhead utility power lines that would cross over a short segment of the proposed Littlerock Trail Extension in the area of the SR 14/Sierra Highway interchange.
- **Vasquez Loop Trail (proposed extension):** The Refined SR14 Build Alternative would require the permanent acquisition of approximately 160 feet of the 3-mile proposed Vasquez Loop Trail extension and an additional 170 feet of the trail to allow for access and maintenance of the electrical lines. The E1 and E2 Build Alternatives would require the

permanent acquisition of an approximately 720-foot segment of the proposed Vasquez Loop Trail (proposed extension) and would require the closure and relocation of a segment of the proposed Vasquez Loop Trail extension.

In addition to that impact common to all six Build Alternatives, the Selected Alternative (and the Refined SR14 Build Alternative), would have a direct impact on the following resources:

- **Santa Clara River Trail (proposed extension):** If this trail is operational during construction, the Selected Alternative and the Refined SR14 Build Alternative would require partial closure of the trail for installation of overhead utility lines and the elevated railway alignment over the Santa Clara River. Users could see and hear the train, but it would not change the character of this trail because of its setting next to the Metrolink Rail Corridor and the Vulcan Mine.
- **Rim of the Valley Trail (proposed extension):** If this trail is operational during construction, the Selected Alternative and the Refined SR14 Build Alternative would use an approximately 330-foot segment of the proposed trail for construction staging. Mitigation measures would require rerouting during construction.
- **Lang Station Open Space at Bee Canyon:** The Selected Alternative and the Refined SR14 Build Alternative would require the permanent acquisition of a portion of the property. With acquisition of the property for the project, the remaining 152 acres of the park would remain available as open space. Mitigation Measures would ensure access to park facilities, replacement trails or trailheads or park space, or alternative access to ensure the recreation resources remain accessible.

Other Alternatives would affect the following additional park and recreational resources during construction, operation, or both:

- Tejon Equestrian Park (Selected Alternative, E1A, and E2A Build Alternatives)
- Darrell Readmond Trail (proposed extension) (Refined SR14 Build Alternative)
- PCT (Refined SR14)
- Angeles National Forest including SGMNM (Selected Alternative, Refined SR14, E1, E1A, E2, E2A Alternatives)
- Playgrounds at Hillery T. Broadus Elementary School (Selected Alternative, Refined SR14, E1, E1A Build Alternatives)
- HHH Memorial Recreation Center and Pool (Selected Alternative, Refined SR14, E1, and E1A Build Alternatives)
- Stonehurst Park and Recreation Center (E2 and E2A Build Alternatives)

The Selected Alternative (in addition to the Refined SR14 Build Alternative) would avoid the Acton Community Trail (proposed extension) that would occur under the E1, E1A, E2, and E2A Build Alternatives. The Selected Alternative (in addition to the E1, E1A, and Refined SR14 Build Alternatives) would avoid the E2 and E2A Build Alternatives' direct impacts on the Hansen Dam Open Space. The physical and nonphysical impacts on the Hansen Dam Open Space under the E2 and E2A Build Alternatives would represent one of the largest physical and nonphysical impacts of the Build Alternatives. The construction of an elevated railway within this open space area would only take place under the E2 and E2A Build Alternatives, which makes the Selected Alternative (as well as the Refined SR14, E1, and E1A Build Alternatives) less impactful with regards to parks, recreation, and open space resources.

5.12.2 Operation

Operation impacts beyond construction of the Selected Alternative would remain minimal. The Selected Alternative would not affect the PCT, avoiding that permanent impact of the Refined SR14 Build Alternative.

5.13 Aesthetics and Visual Quality

5.13.1 Construction

In general, the Selected Alternative (as well as the E1, and E1A Build Alternatives) would result in a lesser variety of visual impacts during construction than the other three Build Alternatives because they would have the longest tunnels and would thus result in the least visual impact on its surroundings. With fewer above-grade segments, the Selected Alternative (as well as the E1, and E1A Build Alternatives) would cross fewer waterways and other scenic natural resources above grade, thereby causing fewer changes in visual quality.

For example, although the Refined SR14 Build Alternative would generally be either near existing transportation infrastructure or below ground between Palmdale and Burbank, large-scale overcrossing structures would block views in some relatively rural areas, such as on Red Rover Mine Road (Key Viewpoint [KVP] 1.8) and the PCT (KVP 1.14). Although the project components for the E2 and E2A Build Alternatives would mostly be not visible below ground in tunnels between Palmdale and Burbank, project features near the tunnel portals would contrast with the natural harmony of some views, such as near Lake View Terrace (KVP 1.22) and Big Tujunga Wash (KVP 1.23). The Selected Alternative would not have these components near Lake View Terrace (KVP 1.22) and Big Tujunga Wash (KVP 1.23). Refer to Section 3.16, Aesthetics and Visual Quality for figures depicting the locations of KVPs associated with the Build Alternatives.

The Selected Alternative has equivalent visual effects as all other Build Alternatives on Landscape Unit 1, which would be constructed as a series of tunnels (twin-bored), viaducts (elevated tracks), and at-grade sections. Construction activities would result in substantial visual disturbance in all three Landscape Units (1a, 1b, 1d). Construction light and glare would be an annoyance to viewers in Landscape Unit 1 and Landscape Unit 2, reducing the visual quality rating by one or more levels, depending on the setting. These impacts would not be substantially different between the Selected Alternative and the five other Build Alternatives.

5.14 Cultural Resources

5.14.1 Construction

Architectural historic built resources can be affected if character-defining features are altered. Unlike the E1, E1A, E2 and E2A Build Alternatives, construction of the Selected Alternative (and the Refined SR14 Build Alternative) would not result in adverse effects on historic built resources located within the historic built APE. Surveys identified 12 historic built resources listed, previously determined eligible, and newly determined eligible-for-listing properties within the APE.

Construction and operation of the Selected Alternative (as well as the Refined SR14, E1, and E1A Build Alternatives) would result in no adverse effects on the East Branch of the California Aqueduct, the Palmdale Ditch, or the Pink Motel and Café. In contrast, the Refined SR14 Build Alternative would entail excavation around and under the East Branch of the California Aqueduct to shore it up during and after construction of the tunneling beneath the property. No temporary or permanent physical damage is anticipated, and the EBA would retain its primary function—the conveyance of water.

Construction of the Selected Alternative would avoid effects on the Eagle and Last Chance Mine Road, in contrast to other Build Alternatives which would require mitigation. Due to the depth of bored tunnels, the six Build Alternatives would also result in no effect determinations for the following resources: Big Creek Hydroelectric System Historic District—Vincent Transmission Line Los Pinetos Nike Missile Site, 10004 Clybourn Avenue, LADWP Boulder Transmission Line 3, 1890s Acton Ford Road, and the Monte Cristo Wagon Road System, and most other surface resources.

The Selected Alternative (as well as the five other Build Alternatives) may result in construction-related impacts on known archaeological sites caused by ground-disturbing construction activities, if the sites are found to be eligible. Unevaluated archaeological resources would undergo a program of phased identification and evaluation per the programmatic agreement (PA),

and effects would be assessed on archaeological historic properties. At the depths anticipated for the tunnels in the ANF, it is assumed the six Build Alternatives would avoid archaeological sites, which are typically found closer to the ground surface.

5.14.2 Operation

The Selected Alternative and the Revised SR14 Build Alternative (unlike the E1, E1A, E2, and E2A Build Alternatives) would avoid adverse effects on Blum Ranch and Blum Ranch Farmhouse. For the E1, E1A, E2, or E2A Build Alternatives, mitigation measures would be required to minimize adverse effects to Blum Ranch and the Blum Ranch Farmhouse and the visual integrity of the Blum Ranch viewshed.

5.15 Cumulative Impacts

For all resource areas, cumulative construction and operation impacts for the Selected Alternative would be similar to the other five Build Alternatives.

5.15.1 Construction

Although IAMFs and mitigation measures will avoid or minimize most impacts associated with construction and operation of the Selected Alternative, when combined with other past, present, and reasonably foreseeable projects, construction of the Selected Alternative will result in cumulative impacts on transportation, air quality, noise, paleontological resources, socioeconomics and communities, aesthetics and visual quality.

Earthwork and tunneling activities during the construction of the Selected Alternative (and the five other Build Alternatives) would generate substantial spoils material, which would be trucked to disposal sites in the project region. Spoils hauling and potential recycled water trucking would increase truck traffic at roadway segments and intersections that, when added to existing traffic conditions within the RSA, would create significant impacts on the circulation network.

On noise, multiple projects in urban areas near the Build Alternatives—such as projects implemented pursuant to local general and specific plans as well as transportation projects (e.g., the High Desert Corridor Project and the SR 138 Widening Project)—would be under construction at the same time as the Build Alternatives. Constructing of these projects could result in exceedance of significance thresholds for noise at sensitive receivers.

The implementation of standard construction practices to identify, protect, and recover paleontological resources during surface-disturbing projects has resulted in the salvage and permanent preservation of scientifically significant paleontological resources. However, typical paleontological resource protection techniques (such as visual surveying and monitoring) may not be feasible with tunnel boring machines. Combined with other projects, nonrenewable paleontological resources may decrease.

On socioeconomics and communities, the Selected Alternative (and all other Build Alternatives), along with other planned projects, could permanently displace residences and businesses. The Authority will facilitate the transition of displaced residents into nearby replacement housing, and reach out to homeowners, residents, landowners, business owners, community organizations, and local officials in affected neighborhoods to gather and utilize input to maintain community cohesion and avoid physical deterioration.

Construction of reasonably foreseeable future projects could degrade visual and aesthetic resources, which represents a significant cumulative impact.

5.15.2 Operation

Train operational noise would cause cumulative noise impacts. In particular, operation of the High Desert Corridor Project would increase the existing noise environment, and other nearby roadway and highway widening projects would additionally contribute to the future noise environment.

5.16 Environmental Justice

Absent impact avoidance and minimization measures or appropriate mitigation, there is a potential for disproportionately high and adverse effects on EJ populations related to transportation, air quality, noise and vibration, socioeconomics and communities, aesthetics and visual quality. Potentially affected EJ communities are located within Sylmar, Pacoima, Sun Valley, Lake View Terrace, and Palmdale, and specifically within the census block groups listed underneath Tables 5-5 and 5-24 and depicted in Figure 5-1 through Figure 5-18 in Chapter 5, Environmental Justice, of the Final EIS. However, with the Authority's commitment to measures tailored to potential effects in environmental justice communities and developed after consultation of EJ communities, the Selected Alternative would not result in any disproportionately high and adverse effects on environmental justice communities.

5.16.1 Construction and Operations

5.16.1.1 Transportation

The Selected Alternative (in addition to the Refined SR14 Build Alternative) would adversely affect roadways and intersections from spoils hauling in EJ communities within Sylmar, Pacoima, and Sun Valley, after the implementation of non-EJ-specific IAMFs and mitigation measures. Construction-period earthwork and tunneling activities associated with the Selected Alternative (as well as the five other Build Alternatives) would generate substantial spoils material (rock and dirt), which would require truck trips to remove the spoils to appropriate disposal sites. These truck trips will increase traffic on local roadways in affected communities. These potential effects on EJ communities would be avoided through the implementation of EJ-IAMF#1, which would require creating an EJ ombudsman position to ensure that the Authority's contractor mitigates construction-phase transportation effects of adversely affected EJ communities. The Authority's EJ ombudsman's responsibilities shall include obtaining community-specific feedback on proposed spoils and materials hauling routes and plans not typically reviewed by the general public, including the Transportation CMP (TR-IAMF#12) and CMP (SOCIO-IAMF#1), in order to minimize adverse effects on EJ populations including adverse effects from spoils hauling.

5.16.1.2 Air Quality

The Selected Alternative (in addition to the Refined SR14, E1, and E1A Build Alternatives) would result in localized air quality exceedances during construction for NO₂ and PM₁₀ in Sun Valley, however the Selected Alternative would have localized air quality exceedances in fewer communities than the E2 and E2A Build Alternatives. These potential effects on EJ communities would be minimized and/or avoided through the implementation of EJ-IAMF#6 and EJ-MM#2, which would require the Authority to propose stationary outdoor air quality sensors and applicable monitoring locations within EJ communities to provide affected EJ communities with greater access to publicly accessible, local air quality data, as well as require the Authority to conduct a pre-construction EJ air quality emissions analysis and solicit mandatory community input on potential emissions reductions and reduction exposure measures, in order to minimize adverse air quality effects on EJ communities from construction. OMM#4 also requires that the tunnel south of Broadus Elementary School would be excavated from south to north to allow for conveyor belt transportation of appropriate spoils directly to Boulevard Mine. By using a conveyor belt, and by requiring the spoils hauling to use routes that avoid drop-off and pick-up times, this offsetting mitigation measure would reduce the construction traffic and construction air quality impacts at nearby schools.

5.16.1.3 Noise and Vibration

The Selected Alternative will affect the same EJ communities with construction noise as the Refined SR14, E1A, and E1 Build Alternatives, as identified in Chapter 5. These potential effects on EJ communities would be minimized and/or avoided by creating an EJ ombudsman position to ensure that construction-phase noise mitigation measures are developed with the input of affected communities and to ensure that noise mitigation measures are effective in not exceeding applicable noise impact thresholds. EJ-MM#1 requires community review and input on

proposed construction noise mitigations and monitoring measures, before the Authority may start construction. These measures would avoid construction noise impacts.

Even with mitigation, the Selected Alternative would result in operational train noise effects on communities such as Sun Valley, while other Build Alternatives (Refined SR14, E1A, and E1 Build Alternatives) would result in operational train noise effects on more communities than the Selected Alternative. The E2 and E2A Build Alternatives would result in operational train noise effects on EJ communities in Lake View Terrace and south of Palmdale. EJ-IAMF #1, EJ-IAMF#5, and EJ-MM#1, as described above, would be implemented to minimize and/or avoid these effects. However, even with these measures, residual operational train noise effects to a defined number of sensitive receptors in Sun Valley will remain, as identified in Chapter 5 of the Final EIR/EIS.

Due to concerns over permanent operational train noise, affected communities requested additional job opportunities and priorities from construction, and additional improvements to their communities to offset these potential effects. As detailed in Chapter 5 and related appendices, the Authority has committed to a number of measures (OMMs) to improve the community and help offset these residual effects, including access to pre-apprenticeship classes and hands-on construction training, community connectivity enhancements, pedestrian improvements and other neighborhood livability improvements. With the proposed measures, the Selected Alternative would not result in disproportionately high and adverse effects related to this effect.

5.16.1.4 Socioeconomics and Communities

Business Displacement

The Selected Alternative will have similar business displacement effects on environmental justice communities as the Refined SR14, E1, and E1A Build Alternatives. In consideration of these effects, the Authority has developed several measures that to avoid or reduce effects. EJ-IAMF#2 Business Spotighting would require the Authority's EJ Ombudsman and Contractor's EJ Liaison to provide assistance nearby and adjacent businesses to maintain neighborhood commercial fabric, despite displacements, and business visibility during construction, such as providing signage and targeted advertising and marketing campaigns, incentives for construction worker patronage (as applicable), and/or Authority- sponsored community events. EJ-IAMF#4 EJ Business Relocation/Displacement Assistance will require the Authority to develop a relocation mitigation plan with a subsection dedicated to addressing adverse effects to businesses in the EJ communities. The Authority's EJ Ombudsman and Contractor's EJ Liaison will hold roundtables to consider the affected EJ communities' input on this plan, as well. These efforts and other measures will decrease the potential for disproportionately high and adverse effects from business displacements on EJ communities.

The Authority recognizes that the displacement of certain businesses, even with the measures, will result in adverse effects, and has committed to additional improvements in affected communities to offset these impacts, as detailed in Chapter 5 and related appendices of the Final EIR/EIS. Although these OMMs would not directly mitigate effects of the business displacements in low-income communities, they would benefit the members of those communities and contribute to community connectivity.

Residential Displacement

For the Selected Alternative (and the other five Build Alternatives), although most residential displacements would take place in EJ communities, sufficient replacement housing would be available for the units displaced. The Final EIR/EIS found that the impacts would not be adverse, given the availability of sufficient replacement housing and the Authority's relocation assistance and other IAMF measures.

The Selected Alternative is similar in effect to the E1A and E2A Build Alternatives in residential displacements south of Palmdale. For the Boulders at the Lake Mobile Home Park south of Avenue S and east of Sierra Highway and a community in Agua Dulce near Big Springs Road, construction in this area would require the displacement of 23 residential properties (of

approximately 200 total residential units). Because at-grade facilities would be built only in the western portion, the project would not present a new physical and visual barrier in the existing community.

Construction of the E2 Build Alternative would divide an EJ community in Lake View Terrace (60371032001). The permanent loss of cohesion in this community would represent an adverse effect. Therefore, community cohesion effects would potentially be disproportionately high and adverse on low-income communities for the E2 Build Alternative, as the share of low-income communities experiencing post-mitigation effects is greater than their reference community share.

Aesthetics and Visual Quality

Neither of the two adversely affected key viewpoint areas in the Selected Alternative would predominately affect minority or low-income communities. As such, this effect would not be disproportionately high and adverse for the Selected Alternative. The Selected Alternative would result in permanent visual effects on Sierra Highway, near the California Aqueduct crossing, which area currently has moderate visual views, given existing infrastructure like the aqueduct. The adverse effect on KVP 1.3 would not disproportionately affect EJ populations as this KVP straddles both EJ and non-EJ communities.

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6 MITIGATION COMMITMENTS AND MONITORING

The Authority will supervise construction and require implementation of mitigation measures for the Selected Alternative. The Authority is responsible for ensuring that these commitments are implemented, and the Authority has a full oversight role for this project. It is also expected that other federal and state resource agencies will make frequent compliance reviews to ensure that all conditions of their respective permits are satisfied. The Authority will monitor the environmental commitments in the MMEP consistent with the NEPA Assignment MOU and applicable NEPA regulations and guidance.

The MMEP describes mitigation measures that will avoid, minimize, or compensate for reasonably foreseeable environmental impacts that result from constructing and operating the Palmdale to Burbank Project Section of the California HSR System. These measures were developed by the Authority, pursuant to its responsibilities under NEPA Assignment, in consultation with appropriate agencies, as well as with input received from the public.

The Selected Alternative also incorporates the applicable IAMFs identified in Volume 2, Appendix 2-E, Project Impact Avoidance and Minimization Features, of the Final EIS. As part of the EIS, the Authority identified these IAMFs to avoid and minimize potential project impacts. The Authority will apply these IAMFs (including BMPs) to avoid impacts in many resource areas. Regulatory requirements (such as hazardous material disposal and various mandatory safety strategies) provide additional assurance that impacts on the environment would not occur or would be minimized to the fullest extent practicable. The applicable regulatory requirements and the IAMFs and mitigation measures that are part of the Selected Alternative are described in more detail in the MMEP. The IAMFs are a condition of project approval and must be implemented by the Authority during design, construction, and operation of the Selected Alternative approved by this ROD.

As discussed in prior sections of this document, the Burbank Subsection was analyzed in the Burbank to Los Angeles Project Section Final EIR/EIS. The Burbank to Los Angeles Project Section Final EIR/EIS identified Impact Avoidance and Minimization Features (IAMFs) and mitigation measures for the entirety of the Burbank to Los Angeles Project Section. The Palmdale to Burbank Final EIS includes updates to some IAMFs and mitigation measures that would apply to the Burbank Subsection. Updates are not intended to lessen the Authority's commitments in measures, and the Authority will not construe any of this document's updates to the Burbank Subsection IAMFs and MM's as lessening the Authority's commitments. For the avoidance of doubt, differences will be not be interpreted by the Authority as lessening commitments. Table 2-1 and Table 2-2 of the CEQA Findings of Fact and Statement of Overriding Considerations summarize how key IAMFs and mitigation measures from the Burbank to Los Angeles Project Section Final EIR/EIS that are relevant to the Burbank Subsection have been updated in the Palmdale to Burbank Project Section Final EIR/EIS.

Consistent with the USDOT Order on Environmental Justice 5601.2, such updates include a range of specific impact avoidance measures, mitigation measures, and offsetting community improvements for environmental justice (EJ) communities identified in the Final EIR/EIS with the potential of disproportionate adverse effects, absent the measures. These measures were developed in response to input received from communities and through ongoing engagement with affected communities and their representatives. EJ-specific measures reduce, avoid, or offset disproportionate effects on environmental justice communities by consulting with communities early, by providing mechanisms for EJ communities ongoing review of the adequacy of impact avoidance or mitigation measures and their effective implementation, and/or by adopting measures or offsets requested by affected communities.

Consistent with 40 C.F.R. Section 1505.2(c), all practicable means to avoid or minimize environmental harm from the Selected Alternative have been identified and incorporated as IAMFs. Further means to reduce and/or avoid compensate for environmental impacts have been identified and included as mitigation measures included in the MMEP. The Authority reached this conclusion after reviewing public and agency comments and suggestions on the Draft EIS, and after consulting experts to identify additional means to avoid or to minimize environmental harms.

All IAMFs and mitigation measures are included within the MMEP. The Authority is required to comply with all mitigation measures adopted with this ROD. The MMEP, as incorporated into this ROD, is a formal commitment by the Authority to carry out all of the measures identified therein as a condition of project approval. Therefore, in designing, constructing, and operating the Selected Alternative, the Authority is required to adhere to and provide appropriate funding for all IAMFs and mitigation measures in the MMEP.

The Authority will implement an Environmental Management System consisting of strategic planning, policies, and procedures; organizational structure; staffing and responsibilities; milestones; schedule; and resources devoted to achieving the Authority's environmental commitments. The Environmental Management System will also track the implementation of environmental requirements and compliance reports. This system will rely on data from the Authority's contractors, regional consultants, permitting activities, monitoring, inspections, and other compliance activities. This database will be managed by the Authority. Agency partners, including FRA, will receive regular updates from meetings and reports that will demonstrate compliance and progress relevant to their regulatory requirements.

7 SUMMARY OF COMMENTS ON THE FINAL EIS AND RESPONSES

Following the finalization of the Final EIS for publication, and during the 30-day availability period following publication of the Final EIS and prior to the June 26-27, 2024, Board Meeting, the Authority received written comment submittals. The range and types of comments received by the Authority during the availability period included concerns and questions on the following topics:

- General opposition
- General support to the project
- Suggested project alternatives
- Project impacts regarding train speeds, noise, and vibration
- Project construction impacts of the Adit SR14-A-1 on the Migratory Bird Flyway through Bear Divide
- Requests for Authority to work with the Mountains Recreation and Conservation Authority with respect to Bee Canyon and Lang Station Open Space

Summaries of and responses to all correspondence received are included in Appendix H, Comments Received after Publication of the Final EIS. The Authority determined that these comments did not raise significant new information or circumstances that would require preparation of a supplemental EIS. In issuing this ROD, the Authority has considered all responsible and substantive comments received to date on the Final EIS, as well as the comments previously received on the Draft EIS and Supplemental Draft EIS.

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8 REVISIONS TO THE FINAL EIS

As a part of the Authority's review of the Final EIS, several minor corrections, clarifications, and updates were identified, which are included in the Errata to the Final EIS in Appendix I of this ROD. The corrections, clarifications, and updates are not considered significant new information and do not change the analysis or conclusions of the Final EIS. These corrections, clarifications, and updates address items already covered in the Final EIS and do not trigger the need to prepare a supplemental EIS, per the CEQ NEPA regulations (40 C.F.R. § 1502.9(c)(1)). The Final EIS is herewith revised as described in the Errata to the Final EIS in Appendix I.

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9 DECISION

The Authority selects the SR14A Build Alternative, as described in Chapter 2, Alternatives, in the Final EIS and as described in this decision document as the Preferred Alternative, as the Selected Alternative for the Palmdale to Burbank Project Section including the Central Subsection and the Burbank Subsection, from Spruce Court in the city of Palmdale through, including, and reaffirming the approved Burbank Airport Station ending with its southern terminus, just north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank. In making this selection, the Authority concludes that, among the alternatives considered, the Selected Alternative best fulfills the purpose and need and objectives for the project while balancing impacts on the natural and human environment.

In reaching this decision, the Authority considered the physical and operational characteristics and potential environmental consequences associated with all considered Palmdale to Burbank Project Section alternatives. The Authority, as lead agency, consulted with the cooperating agencies and considered the Draft EIS, and Final EIS, including the analysis of the No Action Alternative, all six Build alternatives, and all public and agency comments received during the review periods in reaching this decision.

The federal cooperating agencies may issue their own decision documents, as appropriate, consistent with their statutory and regulatory responsibilities.

9.1 Section 106

Section 106 of the NHPA (54 U.S.C. § 306108) requires that any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking take into account the effect of the undertaking on any district, site, building, structure, or other object that is listed or eligible for listing on the National Register of Historic Places. The California State Historic Preservation Officer (SHPO), the Authority, and the Advisory Council on Historic Preservation are signatories to the *Programmatic Agreement among the Federal Railroad Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California High-Speed Rail Authority Regarding Compliance with Section 106 of the National Historic Preservation Act, As It Pertains to the California High-Speed Train Project* (Section 106 PA) effective 2011 and extended by a First Amendment in July 21, 2021 (FRA et al. 2021). The FRA and STB are invited signatories to the Section 106 PA. In accordance with the Section 106 PA, a MOA for the treatment of adverse effects on historic properties in the Palmdale to Burbank Project Section was executed by the SHPO and the Authority on December 14, 2023. The MOA summarizes the results of the Section 106 process and the treatment measures for both aboveground and below-ground cultural resources (see Appendix D). The following entities were invited to sign the MOA as concurring parties:

- Yuhaaviatam of San Manuel Nation
- Fernandeano Tataviam Band of Mission Indians
- Gabrieleño Band of Mission Indians – Kizh Nation
- Gabrielino/Tongva Nation
- Bureau of Land Management
- USFS Angeles National Forest
- Los Angeles County Department of Parks and Recreation

In accordance with Stipulation V.A of the Section 106 PA, outreach and consultation was conducted with potentially interested parties, including the general public; historic preservation interest groups or individuals; and other federal, state, regional, or local agencies regarding effects on historic properties entirely in Los Angeles County. Eight responses from interested parties were received, including the California SHPO, which designated the FRA as lead federal agency for Section 106 on September 2, 2015 and which designation was then assigned by the FRA to the Authority, pursuant to the NEPA Assignment MOU.

Notwithstanding the assignment, FRA retained responsibility for conducting government-to-government consultation with federally recognized Native American tribes. FRA initiated project-

level government-to-government outreach in 2009 and 2010 for the Palmdale to Los Angeles Project Section. Numerous tribes have since been provided information and updates about the project section and consulted to seek their input regarding concerns about effects on important tribal cultural resources. The Authority and FRA are engaged in ongoing meetings with the tribal consulting parties. As consulting parties, the tribes are afforded a chance to review and contribute to cultural resources technical reports; participate in tribal monitoring opportunities (including monitoring required during pedestrian archaeological field surveys and ground disturbing construction activities in culturally sensitive areas); and contribute to the development of treatment and mitigation for impacts on significant resources.

The assessment of adverse effects required under Section 106 of the NHPA was documented in the Palmdale to Burbank Project Section 106 FOE Report (Authority 2021) that was approved by the SHPO on September 3, 2021, in a Concurrence Letter (see Appendix D).

9.2 Section 4(f)/6(f)

Projects that are undertaken by an operating administration of the U.S. Department of Transportation (USDOT) or that may receive federal funding or discretionary approvals from such an operating administration must demonstrate compliance with Section 4(f) of the USDOT Act of 1966 (49 U.S.C. § 303). Section 4(f) protects publicly owned parks, recreational areas, and wildlife and waterfowl refuges of national, state, or local significance. Section 4(f) also protects historic sites (including archaeological resources) of national, state, or local significance that are on public or private land.

Under the NEPA Assignment MOU, the Authority has been delegated the power to make determinations under Section 4(f). The NEPA Assignment MOU stipulates that the Authority must consult with the FRA prior to making any constructive use determination but otherwise delegates all responsibilities under Section 4(f) to the Authority. As further detailed below, there is no constructive use determination associated with the Palmdale to Burbank Project Section.

As described in the EIS (and Alternatives Analyses and Supplemental reports issued in the decade before the 2022 Palmdale to Burbank Draft EIR/EIS), **all** six of the Build Alternatives were continuously refined over years with due consideration to minimizing harm to or avoiding Section 4(f) resources. (Authority 2011, 2014, 2015, 2016)

Although all Build Alternatives were refined to minimize or avoid harm to these resources, the Selected Alternative avoids direct or significant adverse effects on more parks, recreational areas, and historic resources than the other Build Alternatives. Impacts avoided by the Selected Alternative include: the Pacific Crest Trail (Refined SR14), the Blum Ranch Historic District (significant visual, E1/E1A, E2/E2A), the Hansen Dam Open Space (E2/E2A), the Acton Community Trail (E1/E1A, E2/E2A), the San Gabriel National Monument (E1A, E1, E2, E2A), the Eagle and Last Chance Mine Road historic resource (E1A, E1, E2, E2A), and the Angeles National Forest (E2/E2A).

Chapter 4 of the Final EIS contains the Authority's evaluations of whether and the extent to which the Selected Alternatives or the other Build Alternatives avoid or would result in any of the following "uses" of properties projected under Section 4(f):

- Permanent use
- Temporary occupancy
- Constructive use

Selected Alternative

There are more than 40 different Section 4(f) resources in the Selected Alternative's RSA for recreational and cultural resources. Of these evaluated resources, the Authority determined that the Selected Alternative would result in a temporary occupancy for one recreational resource, a permanent use of four recreational resources and two cultural resources (all but one were found to be de *minimis*), and in a constructive use of zero resources. These resources and relevant

concurrences on use determinations are detailed in the subsequent section on 4(f) determinations.

As detailed in the FEIS, both the Selected Alternative and the Refined SR14 Alternative would result in a permanent use (or effect) for one resource (Lang Station Open Space) that would not be *de minimis*. That resource was created and dedicated in 2022. The Authority received notice of the new resource in November 2022, after it issued the Draft EIS in September 2022. Although the resource was subsequently determined by the Authority to not qualify as a Section 4(f) resource, the Authority nevertheless undertook an individual Section 4(f) assessment for the resource, in consideration of the resource owner's (City of Santa Clarita) request to the Authority to include all possible planning and mitigation measures to address project effects on the resource. The Authority's Section 4(f) assessment was provided to the City of Santa Clarita in May 2024, in advance of the Authority's publication of the assessment in its Final EIR/EIS on May 24, 2024. The Authority has sought comments from the City on its proposed measures as detailed in the assessment, met with City representatives in early June 2024, and has invited the City to submit additional comments.

9.2.1 Measures to Minimize Harm/Mitigation

The Authority undertook all possible planning, including measures to minimize harm and incorporation of all feasible avoidance refinement alternatives, for resources affected by a permanent use such as the Lang Station Open Space as described in Table 4-9 in the Final EIS. The measures identified in these tables are now incorporated into the Selected Alternative.

These measures include PR-MM#5, PR-MM#7, PR-MM#8, and PR-MM#9. These measures require the Authority to continuously consult with the officials with jurisdiction affected by the project, during advanced and final design and before project construction, on the specific conditions of acquisition, use of, and compensation for, or replacement or enhancement of affected trails. These measures further require that the Authority ensure that connections to the unaffected portions of the resource are maintained and that the Authority provide alternative access if temporary closure restricts connectivity or accessibility to recreational or park resources affected by a permanent use.

The Authority is continuing and will continue ongoing coordination, as appropriate, with the officials with jurisdiction over resources such as the Lang Station Open Space. During the Authority's consideration of its decision and during advanced and final design of the project section, the Authority, in consultation with the officials of jurisdiction, may identify and implement additional measures to further reduce potential impacts on resources identified here as having a permanent use from the project.

9.2.2 Section 4(f) Determination

Section 4(f) requires the selection of an alternative that avoids the use of a Section 4(f) property if that alternative is deemed feasible and prudent and the use does not qualify for a finding of *de minimis* impact. If there is no prudent and feasible avoidance alternative and there is more than one alternative that results in the use of a Section 4(f) property that is not a *de minimis* impact, the Authority must select the alternative that has the potential to cause the least overall harm in light of the preservationist purpose of the statute.

Temporary Occupancy

For recreational resources, the Authority determined that the Selected Alternative will result in a temporary occupancy for Rim of the Valley Trail (Proposed Extension) but that the conditions of that occupancy do not result in a use. Concurrence from the relevant U.S. Department of the Interior on the temporary occupancy/no use determination was received on January 22, 2024.

Permanent Use

For cultural resources, the Authority determined that the Selected Alternative will result in a permanent use with *de minimis* impacts on the East Branch of the California Aqueduct and the Palmdale Ditch. Concurrence from the State Historic Preservation Officer was received on

September 3, 2021 for relevant findings as well as a duly executed MOA on December 14, 2023 from the SHPO to address treatment of all of these properties are attached (Appendix D).

For recreational resources, the Authority determined that the Selected Alternative will result in four permanent use determinations, of which three resources will have *de minimis* impacts: the Palmdale Hills Trail (Proposed Extension will intersect with the alignment at-grade and a portion will need to be replaced), the Littlerock Trail (Proposed Extension will be over the tunnel alignment), and the Vasquez Loop Trail (Proposed Extension will be over the tunnel alignment)), as identified in Table 4-6 of the Final EIS. Concurrences on the *de minimis* determinations from the official with jurisdiction were received on December 18, 2023 (Los Angeles County Department of Parks and Recreation) and are attached (see Appendix G).

For the permanent use determination of the Lang Station Open Space, the Authority provided its Individual Section 4(f) assessment to the public owner and invited comment. The Authority's determination is that both its Selected Alternative and the Refined SR14 Alternative will result in a permanent use of land at the Lang Station Open Space, as these alternatives will require the acquisition of resource land for the project that would constitute a permanent use because the features and attributes that qualify the resource for protection under Section 4(f) may be diminished with that acquisition.

In its assessment of and determination for this resource, the Authority identified and considered multiple design avoidance alternatives, including a refined design to both SR14A and the Refined SR14 alternatives that would have tunneled fully or partially under the Lang Station Open Space. Those options conflict with engineering design requirements such that they are not feasible. Beyond design avoidance alternatives, the Authority also assessed the feasibility of additional design refinements to minimize the project footprint in the Open Space. While some refinements were found to be infeasible, the Authority identified some refinements as feasible and incorporated these refinements into the Selected Alternative. The incorporated refinements (grading redesign, access road design changes, power supply realignment) would eliminate approximately 12 acres of temporary footprint impact and also reduce permanent footprint impacts by approximately 28 acres for the SR14A Build Alternative. As a result of this analysis, the Authority found that some refinements were infeasible but also found that other refinements were feasible and incorporated those refinements into the project design.

Least Overall Harm

Among all of the Palmdale to Burbank Section Build Alternatives, the Selected Alternative will result in the least overall harm to resources protected by Section 4(f) because the Selected Alternative will have an impact on the fewest Section 4(f) resources of all of the project alternatives analyzed in the Draft EIS and Final EIS. Although both the Selected Alternative and the Refined SR14 Alternative result in a permanent use of one resource (the Lang Station Open Space), the Authority determined that no alternative would avoid all Section 4(f) resources within the RSA for the Palmdale to Burbank Project Section, and the Selected Alternative fully avoids impacts to more resources than the other Build Alternatives, such as fully avoided impacts to the Pacific Crest Trail, the Hansen Dam Open Space and the adjacent Big Tujunga Wash Mitigation Area, and the Blum Ranch Historic District.

In making this determination, the Authority undertook all possible planning to minimize harm to resources with a permanent use by assessing fully underground and partially underground avoidance alternatives but determining that these options were not prudent and feasible, as well as by assessing other design refinement options and measures to minimize harm and incorporating those determined to be prudent and feasible, as detailed in the previous section.

Additionally, the Selected Alternative would result in *de minimis* impacts to the fewest park, recreation, and open-space resources, compared to approximately eight under the Refined SR14 Build Alternative; approximately ten under the E1 Build Alternative; approximately ten under the E1A Build Alternative; approximately twelve under the E2 Build Alternative; and approximately twelve under the E2A Build Alternative.

Accordingly, although the Selected Alternative would result in a permanent use of one resource, the Authority concluded that there are no prudent and feasible avoidance alternatives to the Section 4(f) permanent use, that it conducted all possible planning to minimize harm to the affected resource with a use, and that the Selected Alternative would cause the least overall harm among all the Build Alternatives in light of the preservationist purpose of the statute.

9.2.3 Section 6(f) Properties

No Land and Water Conservation Fund monies were used to acquire or develop recreational resources in the RSA. Therefore, there are no Section 6(f) resources in the Section 4(f) RSA.

9.3 General Conformity Determination

As part of the environmental review of the Palmdale to Burbank Project Section, the Authority conducted and FRA approved and published a general conformity determination pursuant to 40 C.F.R. Part 93, Subpart B, for the Selected Alternative on June 10, 2024. The Authority conducted the general conformity evaluation following all regulatory criteria and procedures and in coordination with USEPA, SCAQMD, and the California Air Resources Board.

The FRA determined that the Selected Alternative would not exceed any General Conformity *de minimis* levels or CEQA thresholds in the Antelope Valley Air Quality Management District/Mojave Desert Air Basin or San Joaquin Valley Air Pollution Control District/Joaquin Valley Air Basin. The FRA determined that during the construction phase, the Project will result in exceedances of the *de minimis* levels for CO and NO_x emissions in the South Coast Air Basin. There, the project will conform to the applicable requirements for CO in the approved state implementation plan (SIP), based on localized CO modeling that shows in the two years that construction emissions will exceed the CO *de minimis* level, the exceedances will not cause or contribute to a violation of the National Ambient Air Quality Standards for CO within the South Coast Air Basin. In addition, the FRA determined that the project will conform to the applicable requirements in the SIP for NO_x based on commitments between the Authority and SCAQMD to ensure that construction-phase NO_x emissions will be offset to levels that are below the General Conformity *de minimis* level. As a result of this review, the FRA concluded, because project-generated emissions will either be fully offset (for construction phase) or less than zero (for operational phase), that the Project's emissions can be accommodated in and would confirm to the approved SIP.

The FRA's determination is based in part on the following Authority commitments with SCAQMD:

- A commitment between the Authority and SCAQMD to develop and execute an agreement after receipt of construction funding, but prior to the start of construction that includes:
 - A review of emission estimates, coordination with appropriate agencies, revisions (if warranted) of emission estimates before construction start, and a final estimate for review and use by SCAQMD;
 - If emissions exceed General Conformity *de minimis* thresholds, all remaining emissions after implementation of the IAMFs and onsite mitigation measures will be completely mitigated to zero through the District's emission reduction programs. Applicable emission reduction programs may include state or federal incentive programs that achieve emissions reductions by providing incentive funds for the incremental cost of cleaner-than-required engines and equipment. The Authority agrees to provide funding at the cost-effectiveness level or amount established by the program(s) mutually selected by the District and the Authority; and
 - A commitment that the Authority will not start construction until necessary agreements are executed.

Therefore, the FRA concluded that the Selected Alternative, as designed, conforms to the purpose of the approved SIP and is consistent with all applicable requirements. The FRA's Final General Conformity Determination is included with this ROD as Appendix A.

9.4 Section 7 Endangered Species Finding

The proposed action (construction and operation of the Selected Alternative) is in compliance with Section 7 of the FESA. Because the proposed action is likely to affect threatened or endangered species subject to USFWS jurisdiction, the Authority prepared a BA for the Project and consulted with USFWS, as required under Section 7 of the FESA. After evaluating the potential effects of the proposed action, and after additional informal consultation with the USFWS, the Authority determined that the Palmdale to Burbank Project Section may affect, and is likely to adversely affect, the following species and/or designated critical habitat:

- Slender-horned spineflower (*Dodecahema leptoceras*) – Federally endangered
- Arroyo toad (*Anaxyrus californicus*) – Federally endangered
- Arroyo toad (*Anaxyrus californicus*) critical habitat
- Coastal California gnatcatcher (*Polioptila californica*) – Federally threatened
- Southwestern willow flycatcher (*Empidon traillii extimus*) – Federally endangered
- Least Bell's vireo (*Vireo bellii pusillus*) – Federally threatened

The Authority developed and submitted the BA, which evaluated direct, indirect, and cumulative effects of the Project on federally listed species and their designated critical habitat, to USFWS in May 2023 and requested the initiation of formal Section 7 consultation. The Authority held numerous meetings with USFWS following submittal of the BA, and the BA was subsequently revised and resubmitted in November 2023 to address USFWS comments.

Following submittal of the revised BA, the Authority continued to consult with USFWS regarding effects on listed species (whether or not take was reasonably certain to occur and extent of take), conservation measures, and overall findings in USFWS's BO through June 2024. As a part of that process, the USFWS coordinated with the U.S. Army Corps of Engineers, U.S. Forest Service, Bureau of Land Management, and Surface Transportation Board, seeking their review of the Service's draft BO. After consideration of comments received from that coordination, USFWS has confirmed issuance of a Biological Opinion for the Palmdale to Burbank Project Section anticipated no later than June 25, 2024 (provided as Appendix B to this ROD).

In the BO, USFWS is anticipated to determine that the Selected Alternative for the Palmdale to Burbank Project Section, as proposed, is not likely to jeopardize the continued existence of the five listed wildlife and plant species and is not likely to adversely modify or destroy designated critical habitat for arroyo toad that occur in the action area. The BO stipulates four reasonable and prudent measures for the Authority to implement to monitor and report to the Carlsbad Fish and Wildlife Office any project-related incidental take of the four animal species (vireo, gnatcatcher, flycatcher, toad). The Authority will implement the measures identified in the USFWS BO.

The Authority also prepared a BA for the endangered Southern California distinct population segment of steelhead (*Oncorhynchus mykiss*) and its designated critical habitat. After evaluating the potential effects of the proposed action, the Authority determined that the Palmdale to Burbank Project Section is not likely to adversely affect Southern California steelhead or its designated critical habitat, in part because the species is not likely to be present in the action area and the action area does not include any of its designated critical habitat. The Authority submitted the BA to the NMFS on April 2, 2022, and informal consultation was initiated shortly after the BA submittal. Following the informal consultation, NMFS issued concurrence with the Authority's not likely to adversely affect determination for Southern California steelhead and its critical habitat for the Palmdale to Burbank Project Section on May 25, 2022 (provided as Appendix E to this ROD).

9.5 Wetlands Finding

In addition to NEPA and other environmental laws, the federal lead agency is also required to make findings pursuant to USEO 11990, Protection of Wetlands (May 24, 1977), and the USDOT Wetlands Order, USDOT Order 5660.1A, Preservation of the Nation's Wetlands (August 24, 1978). Aquatic resources in the Palmdale to Burbank Project Section resource study area include several types of wetlands as well as other waters (i.e., streams, lakes, and constructed water features) as verified by the USACE under a preliminary jurisdictional determination issued on March 1, 2022. In particular, a USACE-approved jurisdictional determination that includes Una Lake as a waters of the United States was made in June 2013 (USACE 2013).

Construction of the Selected Alternative will have direct and indirect impacts on aquatic resources, although the Authority has taken all feasible and practicable steps to avoid and minimize impacts to such resources, including Una Lake. Portions of the project footprint that cross or abut aquatic resources will result in placement of fill (e.g., for construction of bridge supports), installation of culverts, and associated in-channel work. Construction of track and systems could also alter surface and subsurface hydrology that supplies or drains aquatic features. Additional effects on aquatic resources may result from groundwater reduction during tunnel construction and the associated disruption of hydrologic cycles of surface water resources. Construction of the Selected Alternative will require a permit from the USACE pursuant to Section 404 of the CWA.

In January 2024, the USACE and USEPA concurred that the Authority's Selected Alternative is the preliminary least environmentally damaging practicable alternative (LEDPA). The requirements identified in the MMPEP, incorporated as part of this document (Appendix C), will ensure that the destruction, loss, or degradation of wetlands and other waters are avoided and minimized and that the natural and beneficial values of wetlands are preserved and enhanced. However, if determined to be necessary by USACE or the State Water Resources Control Board, these measures may be increased through their respective permitting processes, or additional measures may be recommended and reflected in other project permits and authorizations.

Based upon USACE findings and the Authority's evaluation, the Authority determines that the Project is consistent with USEO 11990 and USDOT Order 5660.1A.

9.6 Floodplains Finding

The USDOT Order 5650.2 implements USEO 11988, Floodplain Management (April 23, 1979). These orders state that the federal lead agency may not approve an alternative involving a significant encroachment ("action within the limits of the base floodplain," USDOT Order 5620.2(4)) unless the agency can make a finding that the proposed encroachment is the only practicable alternative. The major purposes of USEO 11988 are to avoid federal support for floodplain development; to prevent uneconomic, hazardous, or incompatible use of floodplains; to restore and preserve the natural and beneficial floodplain values; and to be consistent with the standards and criteria of the National Floodplain Insurance Program.

As indicated in Section 3.8, Hydrology and Water Resources, of the Final EIS, the Authority, as the federal lead agency under the NEPA Assignment MOU, concludes that the Selected Alternative would not result in any substantial adverse impacts on natural and beneficial values of the floodplains and would not result in a substantial change in flood risks or damage.

Construction of the Selected Alternative will place new structures and/or modify existing structures within 100-year floodplains regulated by the FEMA, which will result in changes to channel geometry and flood flow characteristics and have the potential to result in permanent impacts on floodplain hydraulics. To avoid impacts related to flooding, FEMA and the local agencies require that an encroachment into a floodplain not increase the water surface elevation of a 100-year flood by more than 1 foot in FEMA mapped floodplains. However, if there is a FEMA-designated "regulatory floodway," no increase in water surface elevation is permitted.

With implementation of IAMFs, which will require flood protection measures that minimize effects on 100-year floodplain water surface elevations and avoid effects on floodways, no permanent

effects on designated floodplains from construction will occur. If the Authority later determines that a FEMA regulatory floodway may be affected by the Project, the Authority has committed to conducting additional hydraulic modeling to confirm that there would be no (0.00 foot) increase in the base flood elevation, as indicated in HYD-IAMF#2 in the attached MMEP, which requires compliance with local agency requirements for development within the floodplain. If the Authority is unable to meet these requirements, and the base flood elevation exceeds the NFIP regulations, the Authority would seek approval of the LAFCD to apply to FEMA for a Conditional Letter of Map Revision (CLOMR), as further indicated in HYD-IAMF#2.

Design of the Selected Alternative includes such effective measures to avoid or minimize the potential for exposure of HSR passengers and employees to flooding; new or additional exposure to flooding risks and hazards from the failure of a levee or dam would not occur. Based upon these findings, the Authority determines that the Selected Alternative is consistent with the requirements of USEO 11988 and USDOT Order 5650.2.

9.7 Environmental Justice Finding

Under USEO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994), and USDOT Order 5610.2C, USDOT Actions to Address Environmental Justice in Minority Populations and Low-income Populations (May 14, 2021) (USDOT 2021), require that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionate high and adverse human health or environmental effects of its programs, policies, and activities on minority communities and/or low-income communities (“EJ communities”).⁶

The Palmdale to Burbank Project Section project alternatives, including the Selected Alternative, will result in adverse effects on all populations, including low-income populations or minority populations, in the Central Subsection and the Burbank Subsection. As identified in Chapter 5, the Authority has held a substantial number of meetings, briefings, and outreach in potentially affected EJ communities with community stakeholders, businesses, local agencies, and elected officials in EJ communities during the development of the EIS to gather, confirm, and understand key community concerns on potential project impacts as well as to identify all practicable mitigation measures to address potential impacts of the Selected Alternative or other Build Alternatives. In Volume 2, Appendix 5-B, of the Final EIS represents a summary of relevant input from communities and local agencies, including comments and measures requested by communities, and how the Authority considered those measures.

Before application of potential IAMFs and mitigation measures (including EJ-specific), the Selected Alternative will result in potential disproportionately high and adverse effects for traffic effects from spoils hauling in Sylmar, Pacoima, and Sun Valley, localized air quality exceedances during construction for NO₂ and PM₁₀ in Sun Valley, construction noise in Pacoima, Sun Valley, Sylmar, and Palmdale, operational train noise in Sun Valley, and business displacements in Pacoima and Sun Valley. The specific census block groups within these communities with these potential effects are identified in Table 5-25 of Chapter 5 of the Final EIS.

The Authority identified specific measures to address or offset impacts in environmental justice communities, including measures identified by EJ community stakeholders as potential ways to attenuate, avoid, or mitigate potential project effects. After application of these measures, the Authority identified communities who may continue to experience residual effects for operational train noise in Sun Valley and business displacements in Pacoima and Sun Valley and developed potential offsetting mitigation measures for these communities.

Offsetting mitigation measures will further benefit the EJ communities by providing benefits and improvements requested by affected communities: training and employment opportunities,

⁶ USEO 14096—Revitalizing Our Nation’s Commitment to Environmental Justice for All was enacted on April 21, 2023. USEO 14096 on EJ does not rescind USEO 12898, which has been in effect since February 11, 1994, and is currently implemented through USDOT Order 5610.2C. This implementation will continue until further USDOT guidance is provided regarding the implementation of the new USEO 14096 on EJ.

permanent neighborhood facility improvements such as streetscape connectivity, beautification and safety – pedestrian crossings, sidewalk improvements, street lighting, street trees, and other landscaping elements. Additionally, while these communities will experience construction-phase effects, these same communities may also benefit from the additional jobs generated during the construction phase. Other permanent long-term potential benefits from the project include increased transit connectivity and air quality improvements.

After the Authority's review of impacts and integration of key measures requested by representatives of affected communities, the Authority concluded that the project would not result in disproportionately high and adverse effects, after application of these measures designed to specifically address and continuously monitor the Authority's performance in addressing concerns of potentially impacted environmental justice communities.

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10 CONCLUSION

The Authority, as the federal lead agency, and as authorized by the NEPA Assignment MOU, has reached a decision that most closely aligns with the Authority's statutory mission and the responsibilities assigned to it by the FRA pursuant to NEPA Assignment, considering economic, environmental, technical, and other factors and based on the information contained within the Final EIS and the project record.

For the Palmdale to Burbank Project Section, which includes the Central Subsection and the Burbank Subsection as well as its previously approved Burbank Airport Station (beginning from Spruce Court in the City of Palmdale in the north and continuing south to terminate just north of Winona Avenue and north of the Burbank Airport east/west runway in the City of Burbank), the Authority approves the SR14A Build Alternative as the Selected Alternative. The Authority has selected this alternative because: (1) it best satisfies the Purpose and Need and objectives for the proposed action; and (2) it minimizes impacts on the natural and human environment by utilizing an existing transportation corridor where practicable and incorporating mitigation measures.

Brian P. Kelly
Chief Executive Officer
California High-Speed Rail Authority

Date

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