California High-Speed Rail Authority

Bakersfield to Palmdale Project Section

Draft Record of Decision

August 2021

CALIFORNIA High-Speed Rail Authority

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

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ACRONYMS AND ABBREVIATIONS

Authority	California High-Speed Rail Authority
AVAQMD	Antelope Valley Air Quality Management District
BA	Biological Assessment
BCHSHD	Big Creek Hydroelectric System Historic District
BETP	Built Environment Treatment Plan
BLM	U.S. Bureau of Land Management
BMP	best management practice
B-P	Bakersfield to Palmdale Project Section
C.F.R.	Code of Federal Regulations
CCNM Design Option	César E. Chávez National Monument Design Option
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CRHR	California Register of Historic Resources
CWA	Clean Air Act
DOT	(U.S.) Department of Transportation
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EKAPCD	East Kern Air Pollution Control District
F-B LGA	Fresno to Bakersfield Locally Generated Alternative
FESA	federal Endangered Species Act
FRA	Federal Railroad Administration
HSR	high-speed rail
IAMF	impact avoidance and minimization feature
La Paz	César E. Chávez National Monument/Nuestra Señora Reina de la Paz National Historic Landmark
LMF	light maintenance facility
MMEP	mitigation monitoring and enforcement plan
MOA	memorandum of agreement
MOU	memorandum of understanding
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
PCT	Pacific Crest Trail
project	Bakersfield to Palmdale Project Section

ROD	Record of Decision
RSA	resource study area
SAA	*Supplemental Alternatives Analysis*
Section 106 PA	*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*
SHPO	State Historic Preservation Officer
SJVAPCD	San Joaquin Valley Air Pollution Control District
SR	State Route
STB	Surface Transportation Board
U.S.C.	U.S. Code
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

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) Bakersfield to Palmdale Project Section (referred to as the project). The Authority is the federal NEPA lead agency under what is commonly referred to as NEPA Assignment. More specifically, the environmental review, consultation, and other actions required of a lead federal agency by 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.) 327 and a Memorandum of Understanding effective July 23, 2019, executed by the Federal Railroad Administration (FRA) and the State of California. The Authority is also the lead agency for state environmental reviews under the California Environmental Quality Act (CEQA).

This ROD approves Alternative 2 with the Refined César E. Chávez National Monument (CCNM) Design Option, Palmdale Station, the Avenue M Maintenance Site and Maintenance-of-Way Facility (MOWF), as described in the *California High Speed Rail Project Bakersfield to Palmdale Section: Final Environmental Impact Report/Environmental Impact Statement* (Final EIR/EIS) dated June 25, 2021. As set forth in this ROD, Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF serves the purpose and need for this project and minimizes economic, social, and environmental impacts, and 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 U.S. Army Corps of Engineers (USACE), the U.S. Bureau of Land Management (BLM) and the Surface Transportation Board (STB). Other federal agencies with specific review or permitting responsibilities include the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service (USFWS). Refer to Table 1 on page 1-6 for a list of major NEPA milestones.

To comply with NEPA and CEQA, the Authority issued a joint Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the project in February 2020, and a Revised Draft EIR/Supplemental Draft EIS in February 2021 generally limited to new information about certain federal and state candidate species under federal and state Endangered Species Acts. Following public review of the Draft EIR/EIS and the Revised Draft EIR/Supplemental Draft EIS, the Authority considered and responded to public comments; revised the EIR/EIS to address public comments; incorporated design refinements to further minimize environmental impacts, improve safety or reduce costs; and published a Final EIR/EIS on June 25, 2021. Consistent with 40 Code of Federal Regulations (C.F.R.) 1506.2,[1] the Final EIR/EIS is one document that 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 referred to as the "Draft EIS," "Supplemental Draft EIS," and "Final EIS." In making its decision, the Authority considered the information and analysis contained in the 2020 Draft EIS, the 2021 Supplemental Draft EIS, and the 2021 Final EIS (collectively, "EIS Documents"). The Authority also considered public and agency comments received on the EIS Documents.

On October 31, 2019, the Authority's chief executive officer executed a ROD approving the portion of the Fresno to Bakersfield Locally Generated Alternative (F-B LGA) from just north of Poplar Avenue in Kern County up to and including the F Street Station (specifically, to the intersection of 34th Street and L Street in Bakersfield). As stated in the F-B LGA ROD, the Authority reserved the decision on the alignment to the south and the east of the F Street Station for the Bakersfield to Palmdale Project Section of the HSR project. Therefore, the portion of the

[1] The Council on Environmental Quality (CEQ) issued new regulations, effective September 14, 2020, updating the NEPA implementing procedures at 40 C.F.R. 1500-1508. However, because this project initiated the NEPA process before September 14, 2020, it is not subject to the new regulations. The Authority is relying on the regulations as they existed prior to September 14, 2020. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations, pursuant to 40 C.F.R. 1506.13 (2020) and the preamble at 85 Fed. Reg. 43340.

F-B LGA from 34th Street and L Street in Bakersfield to Oswell Street that was previously analyzed in the *Fresno to Bakersfield Section Final Supplemental EIS*[2] was included in the Bakersfield to Palmdale Final EIR/EIS.

Table 1 provides a summary of major NEPA milestones and completion dates for the EIS Documents.

Table 1 Summary of Major NEPA Milestones

Milestone	Date
NOI	September 4, 2009
Public Scoping Meetings (3)	September 15–17, 2009
NOA Published and Issuance of Draft EIS and Section 4(f) Evaluation	February 28, 2020
Public Hearing to Receive Public Comment	April 23, 2020
Issuance of the Supplemental Draft EIS (limited to new information on biological resources)	February 26, 2021
Publication of Draft General Conformity Determination	May 13, 2021
NOA and Issuance of Final EIS/Section 4(f) Evaluation	June 25, 2021
Approval of Final General Conformity Determination	July 16, 2021
End of waiting period for Final EIS and Section 4(f) Evaluation	July 26, 2021

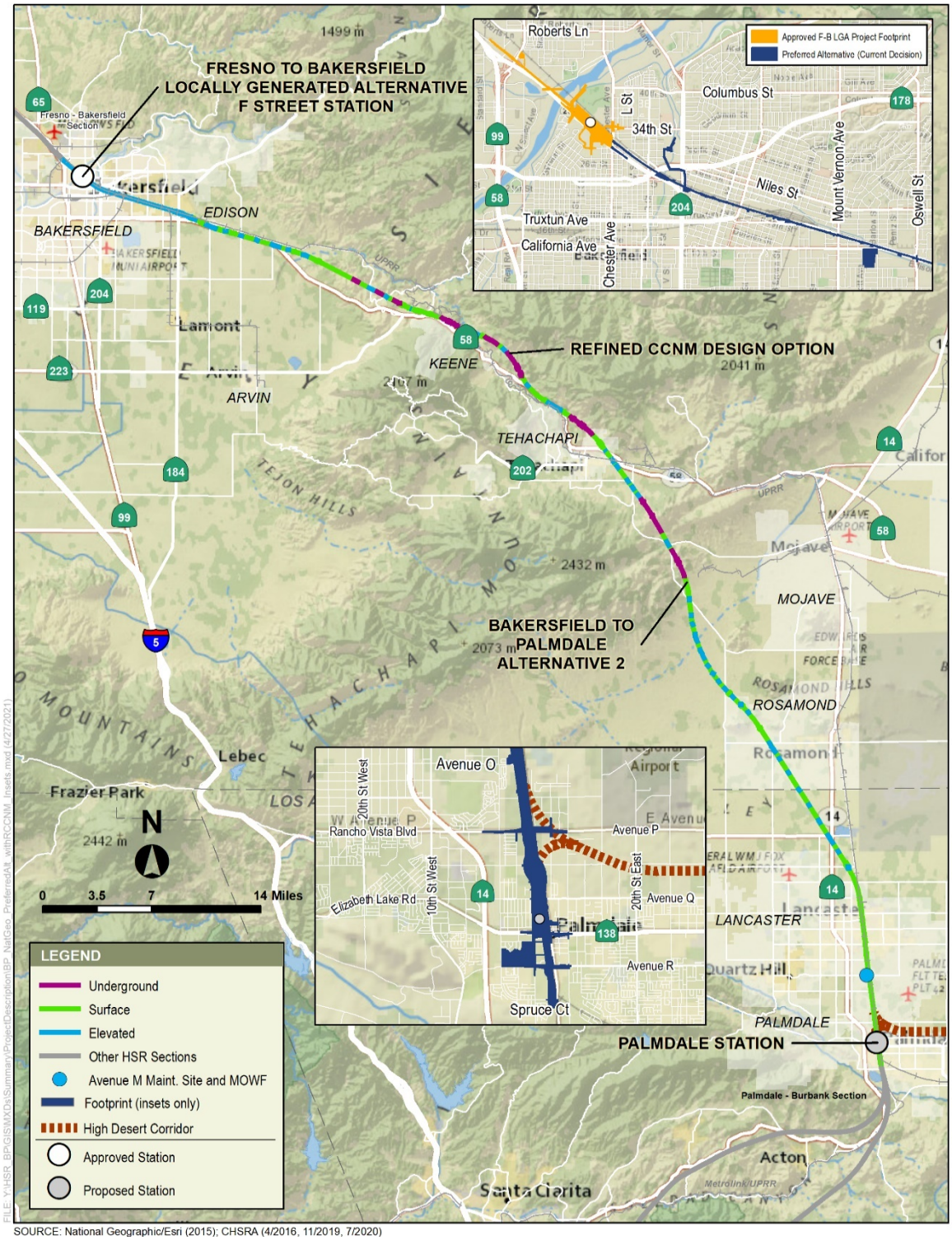
EIS = Environmental Impact Statement
NEPA = National Environmental Policy Act
NOA = Notice of Availability
NOI = Notice of Intent

The Bakersfield to Palmdale Project Section will connect to the already-approved portions of the HSR system between Merced and Bakersfield, extending the approved HSR system from the southern Central Valley to the Antelope Valley. This decision document outlines all relevant information used by the Authority, as the NEPA lead agency, for approval of the Selected Alternative—Alternative 2 with the Refined CCNM Design Option, Palmdale Station, and the Avenue M Maintenance Site and MOWF. As described further in Section 4.0 Alternatives, the Authority considered the following alternatives: Alternatives 1, 2, 3, and 5, which share a common alignment except for three locations and begin immediately south of the previously approved Bakersfield F Street Station at the intersection of 34th and L Streets in Bakersfield and end approximately 1.1 miles south of the Palmdale station at Spruce Court in Palmdale. The Authority also considered the CCNM Design Option and the Refined CCNM Design Option, which are design variants considered to reduce impacts to the César E. Chávez National Monument/Nuestra Señora Reina de la Paz National Historic Landmark (La Paz).

As depicted in Figure 1 and described in further detail in Chapter 2, Alternatives, of the Final EIS, the Selected Alternative spans approximately 80 miles between the proposed Bakersfield and Palmdale stations. The alignment of the Selected Alternative begins immediately south of the F Street Station, at the intersection of 34th and L Streets, in the City of Bakersfield and ends at approximately 1.1 miles south of the Palmdale Station at Spruce Court in the City of Palmdale.

In making its decision, the Authority considered the information and analysis contained in the EIS Documents and the associated administrative record, information presented in the Fresno to Bakersfield Section Final Supplemental EIS (Authority 2019c), and input received from the public, tribes, and other agencies.

[2] California High-Speed Rail Authority. 2019. Fresno to Bakersfield Section Final Supplemental Environmental Impact Statement. Sacramento, CA. October 2019.



SOURCE: National Geographic/Esri (2015); CHSRA (4/2016, 11/2019, 7/2020)

Figure 1 Selected Alternative

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

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 alternatives considered in the EIS Documents.
- Identifies Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF as the Selected Alternative.
- Identifies the Environmentally Preferable Alternative.
- Summarizes environmental benefits and adverse effects.
- Discusses and makes determinations required under other relevant laws and guidance, including:
  - The National Historic Preservation Act of 1966, as amended, 54 U.S.C. 306101-307106 et seq.
  - Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303
  - Section 7 of the Endangered Species Act of 1973, 16 U.S.C. 1531-1544
  - Section 404 of the Clean Water Act, 33 U.S.C. 1251-1387
  - US Department of Transportation Order on Environmental Justice
  - FRA's General Conformity Determination pursuant to the Clean Air Act (CAA), 42 U.S.C. 7401-7671q
- 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 be implemented to avoid and minimize 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 project and identifies and discusses the factors that were balanced by the Authority in making its decision.
- Summarizes the status of compliance with federal agency determinations and other environmental requirements.

This ROD also includes the following:

- Appendix A: General Conformity Determination for Air Quality, July 16, 2021
- Appendix B: U.S. Fish and Wildlife Service Biological Opinion, June 16, 2021
- Appendix C: Mitigation Monitoring and Enforcement Plan (MMEP)
- Appendix D: Comments Received during the Final EIS Waiting Period
- Appendix E: Errata

- Appendix F: State Historic Preservation Officer Section 106 Concurrence Letter and Memorandum of Agreement, June 22, 2021
- Appendix G: Section 4(f) Concurrence Letters

1.1 California High-Speed Rail 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 will 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 shown in Figure 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 will 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 will 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 (mph) over a fully grade-separated, dedicated guideway alignment.

The Authority plans two phases of California HSR System development. The California HSR Program 2020 Business Plan (Authority 2020a) describes in detail how the California HSR System will be implemented and recognizes current budgetary and funding realities. A Revised Draft 2020 Business Plan was released for public review on February 9, 2021, approved by the Board on March 25, 2021, and submitted to the Legislature on April 12, 2021. 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 the FRA defined HSR project sections such that they would have independent utility or independent significance (i.e., be usable even if later sections of the HSR system are not completed).

1.2 Bakersfield to Palmdale Project Section

With the completion of a programmatic review of the California HSR System in 2005, the Authority and the FRA, as joint lead agencies for NEPA, commenced the Tier 1 environmental review process for the Bakersfield to Palmdale Project Section in 2009. The Authority and FRA held scoping meetings for the project in September 2009. Public and agency involvement for the development of the Draft EIS started in 2010 and continued through publication of the Draft EIR/EIS and Revised Draft EIR/Supplemental Draft EIS. During this period from 2010 to 2018, public and agency involvement was focused on the development and refinement of feasible and practicable study alternatives to carry forward for environmental review and evaluation in the Draft EIS.

For the Bakersfield to Palmdale Project Section, the Authority has held more than 150 meetings, briefings, and conversations to date with the community stakeholders, businesses, local agencies, and elected officials to gather, confirm, and understand key community concerns so that these concerns are incorporated both into the development of alternatives and during the environmental process.

Figure 2 Statewide HSR System

At its October 16, 2018 meeting, the Authority Board concurred with Authority staff that Alternative 2 with the CCNM Design Option would be the Authority's Preferred Alternative for the Bakersfield to Palmdale Project Section. Resolution #HSRA 18-18 can be found on the Authority's website (https://hsr.ca.gov/about/board/resolutions.aspx). Through ongoing Section 106 consultation for La Paz after the Authority Board's action on October 16, 2018, the Authority developed the Refined CCNM Design Option, which is also analyzed in the EIR/EIS. Because the Refined CCNM Design Option avoids adverse effects at La Paz, Alternative 2 with the Refined CCNM Design Option is the Authority's Selected Alternative for the Bakersfield to Palmdale Project Section. This refinement to the Authority's Preferred Alternative is consistent with Resolution #HSRA 18-18, wherein the Authority Board directed Authority staff to "continue to consult and collaborate with the Cesar Chavez Foundation, and other consulting parties, regarding the CCNM Design Option."

The Draft EIS was released on February 28, 2020, for an initial 45-day public comment period. The Authority extended the public comment period by 15 days, resulting in a 60-day public comment period that closed on April 28, 2020. The Authority held a virtual public hearing on April 23, 2020, to receive oral testimony on the HSR project and the Draft EIR/EIS. The traditional in-person format of the public hearing was changed to a virtual public hearing held online and via telephone to comply with the Governor of California's directives and to protect public health during the COVID-19 pandemic. The Draft EIS presented the purpose and need for the project, a reasonable range of alternatives for rail alignment, station site, and maintenance facilities; the existing setting; alternative effects (both beneficial and adverse) from construction and operation; and project design features and mitigation measures to avoid, reduce, or eliminate adverse environmental effects.

Following public review of the Draft EIR/EIS, a Revised Draft EIR/Supplemental Draft EIS was circulated in February 2021. The Revised Draft EIR/Supplemental Draft EIS was generally limited to new information about certain federal and state candidate species under the federal Endangered Species Act (FESA) and the California Endangered Species Act.

The Authority received 130 comment letters on the Draft EIS and 122 comment letters on the Revised Draft EIR/Supplemental Draft EIS.

The Authority considered the information presented in the comments received and the Final EIR/EIS includes responses to all substantive comments and minor design refinements to the Bakersfield to Palmdale Project Section (B-P) Build Alternatives.

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2 AGENCY ROLES AND RESPONSIBILITIES

The Authority is the NEPA lead agency, pursuant to the NEPA Assignment MOU. As required by law and the NEPA Assignment MOU, FRA has retained the responsibility for making the project-level Clean Air Act general conformity determination (under 42 U.S.C. 7506) and conducting formal government-to-government tribal consultations. The STB, the BLM, and the USACE are NEPA cooperating agencies. The following subsections provide more information about the responsibilities and roles of these federal agencies.

2.1 Federal Railroad Administration

FRA's responsibilities for environmental review, consultation, and other actions required by applicable federal environmental laws, including NEPA, for the proposed project have been carried out by the Authority, acting on behalf of the State of California pursuant to 23 U.S.C. 327 and the NEPA Assignment MOU dated July 23, 2019, and executed by the FRA and the State of California.

As required by law and the NEPA Assignment MOU, FRA has retained responsibility for making air quality conformity determinations under the General Conformity Rule and the Clean Air Act (42 U.S.C. 7506) and for government-to-government consultation with Indian tribes. FRA issued the final air quality General Conformity Determination on July 16, 2021 (see Appendix A). FRA has carried out its government-to-government responsibilities, as described in the attached Section 106 Memorandum of Agreement.

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.

The FRA has authority over railroad safety under 49 U.S.C. 20103. As such, FRA may exercise certain regulatory authority over the project. FRA also administers certain grant funds provided to the Authority under the American Recovery and Reinvestment Act of 2009 and oversees the Authority's compliance with a grant agreement for the HSR 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. 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 in California. The STB 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 Bakersfield to Palmdale 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. Bureau of Land Management

The BLM may issue rights of entry permits for pedestrian surveys and ground-disturbing investigations, such as geotechnical investigations or other information gathering activities. The Authority will obtain from the BLM all required land rights necessary for construction as well as future operations and maintenance needs.

The BLM has participated as a cooperating agency in the environmental review process for the Bakersfield to Palmdale Project Section. Following completion of this process, the BLM may grant or transfer land rights as appropriate to the Authority.

2.4 U.S. Army Corps of Engineers

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

As a first step in project approval, the Authority, the FRA, the USACE, and the U.S. Environmental Protection Agency executed an MOU (NEPA/404/408 MOU) in November 2010. The MOU outlines a process to integrate the requirements of NEPA with the requirements of Section 404 and Section 408. The purpose of the MOU is to ensure the analysis underlying the EIS Documents for each California HSR System section is sufficient to support USACE's Preliminary Least Environmentally Damaging Practicable Alternative determination and for USACE to issue a NEPA decision.

Aquatic resources in the Bakersfield to Palmdale Project Section include state streambeds, lakes, and other waters of the state, which are regulated by the California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board. Aquatic resources were identified during the jurisdictional delineation investigations (see the *Bakersfield to Palmdale Project Section Aquatic Resources Delineation Report* [Authority 2016a]). The USACE determined that, although many features in these areas meet federal technical criteria that define wetlands and other waters, these features are not jurisdictional under the federal CWA due to their isolation. Because the waterbodies identified in the Bakersfield to Palmdale Project Section are all isolated, the USACE will not assert jurisdiction under Section 404 of the CWA over any areas that would otherwise be delineated as wetlands or waters of the U.S. Therefore, no Section 404 permits will be required for the portion of the Bakersfield to Palmdale Project Section from south of Oswell Street in Bakersfield to Spruce Court in Palmdale.

Aquatic resources for the portion of the project from the intersection of 34th Street and L Street to Oswell Street in Bakersfield are limited to one 0.37-acre retention/detention basin at 30th Street between San Dimas Street and State Route (SR) 204. Aquatic resources were identified during the jurisdictional delineation (see the *Fresno to Bakersfield Locally Generated Alternative Final Wetlands Report* [Authority 2017]). Based on the Preliminary Jurisdictional Determination letter dated June 1, 2017, the USACE determined this feature is a potential jurisdictional aquatic resource ("waters of the United States") regulated under Section 404 of the CWA. Therefore, a Section 404 permit may be required for impacts to this resource. In addition, there are no USACE civil works facilities or structures that will require modification within the Bakersfield to Palmdale Project Section; therefore, no Section 408 permits will be required.

2.5 U.S. Fish and Wildlife Service and the National Marine Fisheries Service

Concurrently with the NEPA process, the Authority initiated the FESA Section 7 (16 U.S.C. 1536) consultation process, pursuant to 50 C.F.R. Part 402. Section 7 of the FESA requires federal agencies to consult with USFWS and/or the 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, including critical habitat and occupied habitat are addressed through a coordination process that is outlined under Section 7 of FESA. The Magnuson-Stevens Fisheries and Conservation 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. For the Bakersfield to Palmdale Project Section, the Authority is only required to consult with the USFWS because there are no species present that would come under the jurisdiction of NMFS.

As the project may affect threatened or endangered species, the Authority prepared a Biological Assessment (BA) for the project and consulted with USFWS, as required. USFWS also issued a Biological Opinion, the details of which are discussed in Section 8.4.

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3 PURPOSE AND NEED

As established in the 2005 Final Program EIR/EIS for the Proposed California HSR System, the purpose of the California HSR System is to provide a reliable high-speed, electric-powered train system that links the major metropolitan areas of California, delivering predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network and to relieve capacity constraints of the existing transportation system as intercity travel demand in California increases, in a manner sensitive to and protective of California's unique natural resources (Authority and FRA 2005).

The purpose of this project is to implement the Bakersfield to Palmdale Project Section of the California HSR System, specifically the Selected Alternative (Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF). The project will provide the public with electric-powered HSR service that provides predictable and consistent travel times between major urban centers consistent with Proposition 1A[3], connectivity to airports, mass transit, and the highway network connecting the San Joaquin Valley to the Antelope Valley; and that connects the northern and southern portions of the statewide HSR system. The Selected Alternative supports the purpose of the California HSR Project.

3.1 Alternatives Considered

This section summarizes the alternatives analysis process, the alternatives evaluated in the EIS Documents, and describes the Selected and Environmentally Preferable Alternatives.

3.2 Alternatives Analysis Process and Alternatives Considered but Eliminated from Detailed Study

The Authority and FRA undertook an extensive, public screening process to identify and refine alternatives for study in the project EIR/EIS. The potential alternatives considered, but eliminated from detailed study, were presented in the *Preliminary Alternatives Analysis Report* (Authority 2010a). After the 2010 *Preliminary Alternatives Analysis Report*, the 2012 *Supplemental Alternatives Analysis* (SAA) (Authority 2012) presented a refined range of alternatives addressing the SR 58/Soledad Canyon Corridor (Antelope Valley) alignment based on new information obtained since the previous study. Following the 2012 SAA, the Authority continued to refine the alternatives by responding to stakeholder, agency, and public comments; performing additional engineering and environmental review; and maintaining consistency with the Authority's design objectives. Building on the *Preliminary Alternatives Analysis Report* (Authority 2010a) recommendations, the *Supplemental Alternatives Analysis Report, Bakersfield to Palmdale Section High-Speed Rail Project EIR/EIS* (Authority 2016b) continued the evaluation process and recommended the four alternatives be analyzed in the EIR/EIS. In response to concerns expressed by Section 106 consulting parties between June 2017 and February 2019, the Authority developed design options to avoid or minimize adverse effects to La Paz. In 2019, the Authority issued the *Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority 2019a) and the *Addendum to the Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority 2019b), which evaluate 10 potential design options developed to avoid or minimize impacts on La Paz. This process resulted in the CCNM Design Option and the Refined CCNM Design Option.

[3] The Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, approved by the voters as Proposition 1A on November 4, 2008, authorized the California Transportation Commission, upon appropriation by the Legislature, to allocate funds for capital improvements to intercity rail lines, commuter rail lines, and urban rail systems that provide direct connectivity to the high-speed train system and its facilities, or that are part of the construction of the high-speed train system as set forth in Streets and Highways Code, Division 3, Chapter 20, Section 2704.04, subdivision (b), or that provide capacity enhancements and safety improvements. Section 2704.095 requires the California Transportation Commission to program and allocate the net proceeds received from the sale of $950 million in bonds authorized under Proposition 1A for the High-Speed Passenger Train Bond Program.

The alternatives evaluated and recommended in the *Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark* (Authority 2019a) incorporated refinements that, when compared to the alternatives studied in the 2016 SAA, 2012 SAA, and 2010 *Preliminary Alternatives Analysis Report*, further avoided or minimized potential impacts on existing facilities, land uses, and environmental resources. The alternatives analysis process is further summarized in Chapter 2 of the Final EIS.

Potential alternatives considered over the course of project development either failed to adequately meet the project purpose and need/project objectives, failed to offer a substantial environmental advantage over other alternatives studied, and/or were deemed to not be feasible from a cost, technical, or engineering perspective. These potential alternatives were eliminated from analysis in the EIS Documents.

3.3 Alternatives Carried Forward for Study in the EIS

As a result of a comprehensive alternative analysis process, the EIS evaluated four alignment alternatives and two design options that could be used with any alternative: Alternatives 1, 2, 3, and 5; the CCNM Design Option; and the Refined CCNM Design Option (Figure 3). Alternative 2 is a single, continuous alignment that extends from immediately south of the previously approved Bakersfield F Street Station, at the intersection of 34th and L Streets in Bakersfield, and ends approximately 1.1 miles south of the Palmdale station at Spruce Court in Palmdale. Alternatives 1, 3, and 5 share a common alignment with Alternative 2 except in the community of Edison, the Mojave area, and in the City of Lancaster. The No Action Alternative was also analyzed in the EIS Documents. The alternatives analyzed in the EIS are the alternatives that the Authority identified as reasonable and feasible and capable of meeting the project's Purpose and Need. All alternatives would include a station in Palmdale; alternative station locations were not evaluated in the EIS Documents.

The following sections describe the four alternatives, two design options, and the maintenance facilities evaluated in the EIS Documents. All of these alternatives and options are described in detail in Chapter 2 of the Final EIS. As explained in the Final EIR/EIS, the Authority considered and incorporated a number of engineering and design refinements after the publication of the Draft EIR/EIS. The refinements were considered and incorporated for several reasons, including (1) in response to comments on the Draft EIR/EIS from agencies, stakeholders, and the public; (2) to further minimize environmental impacts or the necessary footprint area; and (3) to further improve safety of the design and reduce costs, where possible. Appendix 3.1-B of the Final EIR/EIS provides a description of the refinements and the resulting changes in environmental impacts.

3.3.1 Alternative 1

Alternative 1 would begin immediately south of the previously approved Bakersfield F Street Station tracks, at the intersection of 34th and L Streets in Bakersfield on a viaduct (approximately 60 feet in height). From Oswell Street to Morning Drive (SR 184), the alignment centerline would be on the north side of Edison Highway. East of Morning Drive, the Alternative 1 alignment would transition from the Edison Highway corridor to the SR 58 corridor, reaching the freeway corridor at Edison Road.

In the community of Edison, Alternative 1 would proceed eastward on an embankment or fill section (ranging between approximately 10 and 25 feet in height) along the existing SR 58 alignment to Towerline Road, where the relocated freeway would tie back into existing SR 58 as it heads southward away from Edison Highway. The HSR alignment would continue eastbound parallel to Edison Highway toward Caliente Creek. From Caliente Creek to Bealville Road, Alternative 1 would roughly follow the existing Tejon Ranch Conservancy easement boundary and begin to climb the Tehachapi Mountains at a 2.8 percent vertical grade.

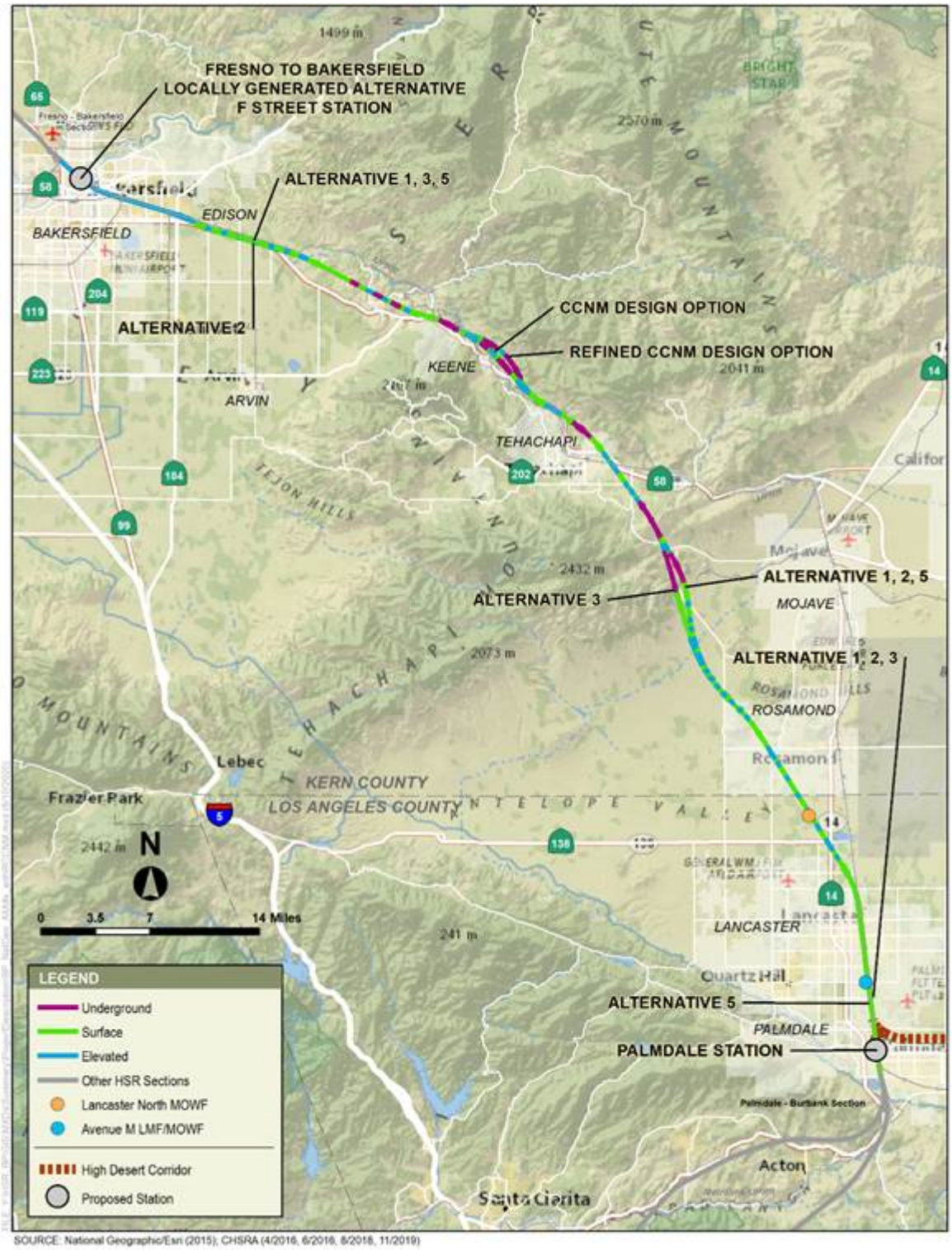


Figure 3 Bakersfield to Palmdale Project Section—Alignment Alternatives

Table 2 shows key differences between the various B-P Build Alternatives.

Table 2 Bakersfield to Palmdale Project Section Build Alternatives Differentiators

Community Area	Alternative 1	Alternative 2	Alternative 3	Alternative 5	CCNM Design Option	Refined CCNM Design Option
Entire Alignment						
Grade separations	59	52	58	59	N/A	N/A
Edison Area						
Relocation of State Route 58	Yes	No	Yes	Yes	N/A	N/A
Farther from key community resources (e.g., reduces impacts from noise, vibration, and access)	450 feet from Edison Middle School	610 feet from Edison Middle School	450 feet from Edison Middle School	450 feet from Edison Middle School	N/A	N/A
Additional visual impacts on Edison Middle School	No	Yes	No	No	N/A	N/A
Keene Area						
Reduces noise and visual impacts to La Paz	No	No	No	No	Yes	Yes
Mojave Area						
Additional tunnel miles	0 miles	0 miles	1 mile	0 miles	N/A	N/A
Greater avoidance of future mining areas	Yes	Yes	No	Yes	N/A	N/A
Lancaster Area						
Combines existing rail corridor (fewer residential and affordable housing displacements)[1]	155 rooms, 96 units	155 rooms, 96 units	155 rooms, 96 units	372 rooms, 132 units	N/A	N/A
Results in no impacts on Whit Carter Park	Yes	Yes	Yes	No	N/A	N/A
Avoids impacts to historic property (Village Grille)	Yes	Yes	Yes	No	N/A	N/A

Source: Table 8-2 in Chapter 8, Preferred Alternative and Station Sites, of the Final EIR/EIS, June 2021
[1] "Rooms" describes the number of rooms affected in motels that service as de-facto affordable housing, and "units" describes the number of affordable housing units affected.
La Paz = Nuestra Señora Reina de la Paz/César E. Chávez National Monument
N/A = not applicable

East of Bealville Road, the alignment would generally follow SR 58 south to the SR 58 interchange with Broome Road. The alignment would cross a canyon just north of Bealville Road on embankments ranging between approximately 30 and 150 feet in height.

East of the SR 58/Broome Road interchange, for a distance of almost 3 miles, Alternative 1 would include cut sections and fill sections. It would cross SR 58 three times on viaducts as the two facilities form a braided configuration within the Tehachapi Creek canyon.

Alternative 1 would pass through the mountains southeast of Tehachapi in an approximately 13,250-foot-long tunnel roughly following Tehachapi Willow Springs Road.

In the Lancaster area, Alternative 1 would be on an embankment or fill section that would be approximately 30 feet in height. Alternative 1 would pass over SR 138 and SR 14 near their

interchange and over other local roads on viaducts. The alignment then would enter the City of Lancaster at Avenue H, running parallel to the Sierra Highway/Union Pacific Railroad (UPRR) corridor through Lancaster and Palmdale. From Avenue H through the City of Lancaster, Alternative 1 would combine the proposed HSR and existing UPRR and Metrolink rail corridors into one combined corridor. Under Alternative 1, the new combined rail corridor would be as close as possible to the eastern edge of existing Sierra Highway and then widened approximately 220 feet to the east to accommodate all three rail systems.

In the Palmdale area, the alignment would begin a transition to the west at Avenue K. It would continue this transition to Avenue M, where the HSR alignment would be west of the existing UPRR/Metrolink right-of-way, which would remain in its existing location. The HSR alignment would then continue south, parallel to and along the western edge of the existing rail corridor, until the section terminus at approximately 1.1 miles south of the Palmdale Station at Spruce Court in the City of Palmdale.

3.3.2 Alternative 2

Alternative 2 would follow the same alignment from Bakersfield to Palmdale as Alternative 1 except through the community of Edison. Alternative 2 would vary from Alternative 1 between Edison Road and Towerline Road, where the HSR alignment would run along the south side of existing SR 58 on an elevated embankment ranging between 40 and 45 feet in height. Under Alternative 2, SR 58 would remain in its current alignment, but this alternative would require an elevated structure for the HSR spanning the SR 58/Edison Road interchange diagonally. Another elevated structure crossing back over SR 58 would be necessary just past Towerline Road, and three additional elevated structures would be needed to cross the HSR over existing north-south roads (Malaga Road, Comanche Drive, and Tejon Highway) spaced approximately 1 mile apart between Edison Road and Towerline Road. Alternative 2 is the only B-P Build Alternative that would not require the relocation of SR 58 in the Edison area.

3.3.3 Alternative 3

Alternative 3 would follow the same alignment from Bakersfield to Palmdale as Alternative 1 except along the southern base of the Tehachapi Mountains. Alternative 3 varies from Alternative 1 just south of Tehachapi in the vicinity of the CalPortland Cement Company quarry. Here, the alignment would travel closer to Tehachapi Willow Springs Road. The alignment would cross Tehachapi Willow Springs Road farther west, but still near the Cameron Canyon Road intersection.

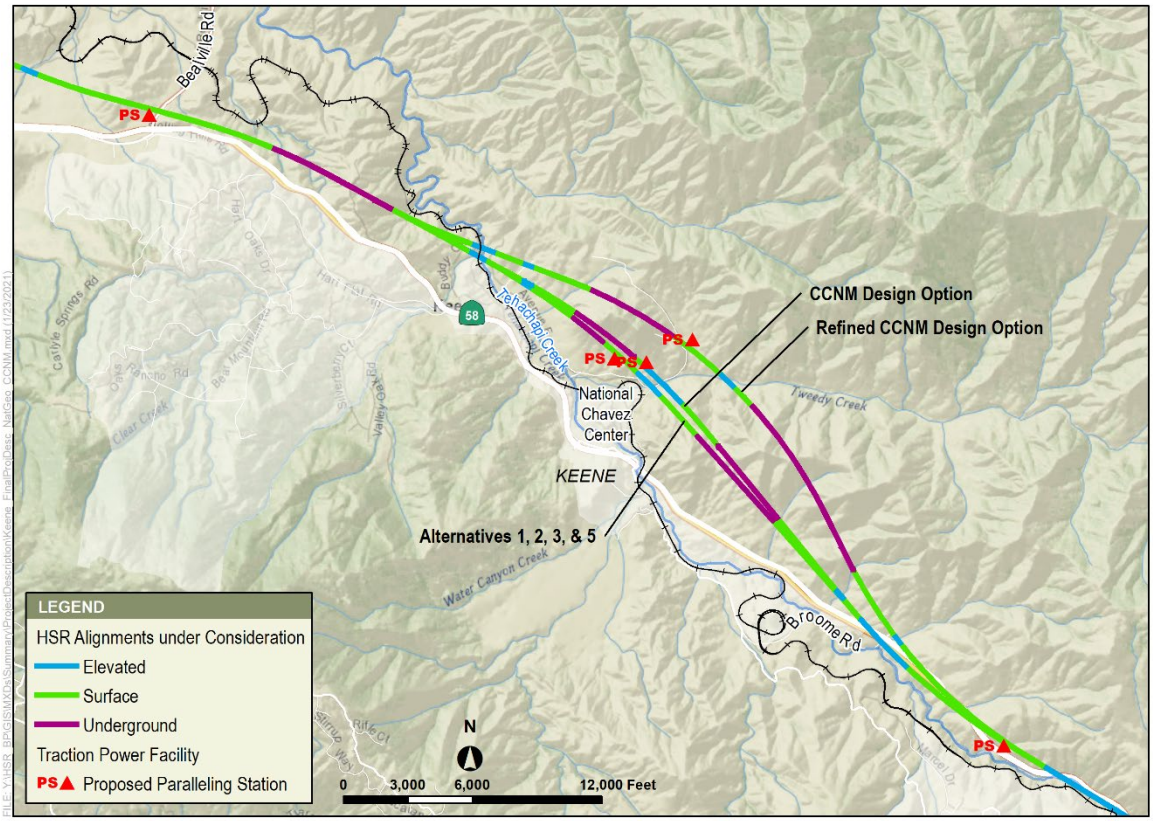
The two southernmost tunnels, while in the same general location as Alternative 1, would consist of one approximately 13,500-foot tunnel and another approximately 13,000-foot tunnel. This would contrast to Alternatives 1, 2, and 5, which would each include one approximately 12,700-foot tunnel and another approximately 9,500-foot tunnel. The longer tunnel lengths of Alternative 3 would create 10 million cubic yards of excess hauling material. South of Tehachapi, Alternative 3 also would split off in a more westerly direction than Alternative 1 until it reconnects at the common connection point of Alternative 1, approximately 17 miles south of Tehachapi.

3.3.4 Alternative 5

Alternative 5 would follow the same alignment from Bakersfield to Palmdale as Alternative 1 except in the City of Lancaster. Between Avenue H and Avenue M in the City of Lancaster, Alternative 5 would be situated west of the existing UPRR and Metrolink facilities, avoiding the need to relocate them. The exception to this would be the Lancaster Metrolink Station building and parking facilities. Sierra Highway would need to be relocated up to approximately 3,100 feet for approximately 8.5 miles. The highway would be relocated west of the HSR alignment except for where it reconnects to the existing Sierra Highway at Avenue G to the north and Avenue P-14 to the south.

3.3.5 César E. Chávez National Monument Design Option

The CCNM Design Option's termini are identical for all of the alignment alternatives (Figure 4). The CCNM Design Option's northern terminus would be north of SR 58 at Buddy Court, and its southern terminus would be northwest of Marcel Drive and SR 58. Similar to the alignment alternatives, the CCNM Design Option would generally follow SR 58 south to the southern terminus somewhat northeast of the alignment alternatives. The CCNM Design Option would also include cut sections, fill sections, tunnels, and viaducts within the Keene area. The cut sections in this area would range between 0 and 225 feet in height, while the fill sections would range between approximately 0 and 110 feet in height. The CCNM Design Option would also pass through two tunnels approximately 3,320 feet and 4,300 feet in length in this area. The viaducts would span the UPRR alignment and Tehachapi Creek, an access road, Tweedy Creek, another access road, and SR 58 near Broome Road, on structures ranging from approximately 0 to 160 feet in height. At its closest to La Paz, the CCNM Design Option would be approximately 850 feet northeast of La Paz, compared to 400 feet for the alignment alternatives.



Source: California High-Speed Rail Authority, 2020

Figure 4 Keene Area Detail Map, showing Refined CCNM and CCNM Design Options

3.3.6 Refined CCNM Design Option

Similar to the CCNM Design Option, the Refined CCNM Design Option would begin 180 feet east of Bealville Road in Keene and would begin at grade for 1.15 miles (6,072 feet) and then continue underground for about 1.04 miles (5,491 feet) northeast of the alignment alternatives. The Refined CCNM Design Option would transition to at-grade for 0.81 mile (4,278 feet) and cross an access road and the UPRR on a 0.17-mile-long (898-foot) viaduct. The Refined CCNM Design Option would then continue east at grade for 0.30 mile (1,584 feet), cross over an existing access road on a 0.06-mile-long (317-foot) viaduct, then transition back to at grade for 0.59 mile (3,115 feet) where the Refined CCNM Design Option would transition underground for 0.80 mile (4,224

feet). The Refined CCNM Design Option would then emerge where it would pass La Paz. The Refined CCNM Design Option would be 0.53 mile (2,693 feet) north of La Paz at its closest when it emerges from the tunnel.

While passing La Paz, the Refined CCNM Design Option would be at grade for 0.57 mile (3,009 feet) at a distance ranging from 0.53 mile (2,693 feet) to 0.73 mile (3,860 feet) from the boundary of La Paz before crossing a 0.13-mile (686-foot) viaduct over Tweedy Creek and a local access road. The Refined CCNM Design Option would travel at grade for approximately 0.25 mile (1,320 feet) before going underground in a 1.7-mile-long (8,976-foot-long) tunnel. The Refined Design Option would then transition to at-grade for 0.71 mile (3,749 feet) before crossing over an access road for 0.06 mile (317 feet) and back to at-grade for 1.71 miles (9,029 feet). The Refined CCNM Design Option would then go over SR 58 and Tehachapi Creek on a 0.89-mile-long (4,699-foot-long) viaduct, back to at-grade for 0.87 mile (4,594 feet) before entering a tunnel for 1.68 miles (8,870 feet). The Refined CCNM Design Option would emerge from the tunnel north of the City of Tehachapi at-grade for 1.48 miles (7,814 feet) before finally ending in a 0.13-mile-long (686-foot-long) viaduct, where it would tie back into the B-P Build Alternatives at SR 58 in the City of Tehachapi. A paralleling station would be required for the Refined CCNM Design Option. In addition, a 100-foot communications pole would be co-located with HSR facilities.

To further avoid anticipated audible adverse effects of the Refined CCNM Design Option, an approximately 1,700-foot berm would be constructed to the same height as the catenary for the track. The berm would be an average of 80 feet in height from the existing ground to minimize project noise to a level that is considered to have no impact, per FRA guidelines. Additionally, areas of ground disturbance would be recontoured and revegetated to minimize the visual effects associated with the earthwork required to construct the project.

3.3.7 Maintenance Facilities

The following three potential double-ended maintenance facility[4] sites were evaluated for the Bakersfield to Palmdale Project Section.

3.3.7.1 Lancaster North A

This site is on the west side of SR 14 and north of W Avenue D, between W Avenue B and W Avenue C. It crosses 35th Street W, Avenue B-12, and 32nd Street W, all of which are unimproved roads. A combined light maintenance facility (LMF) with an MOWF could be accommodated on the Lancaster North A site.

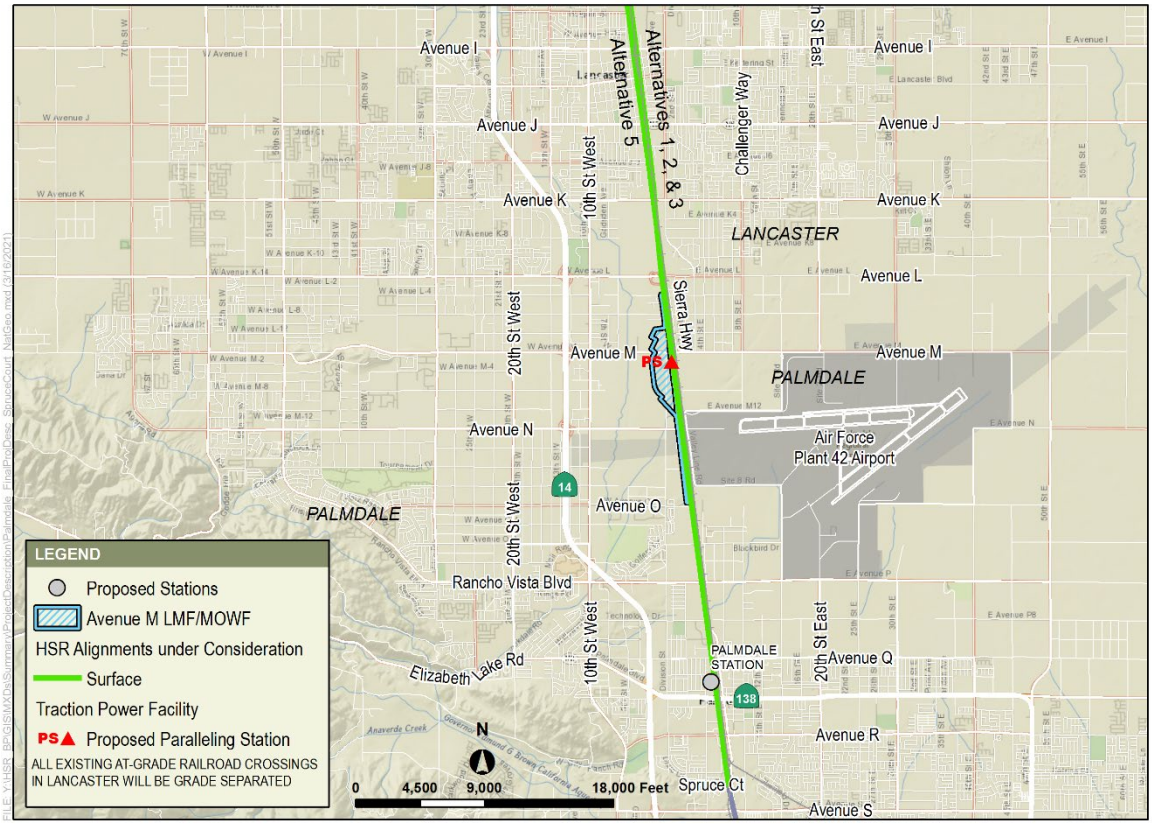
3.3.7.2 Lancaster North B

This site is intended as a maintenance-of-way-only site to accompany the Avenue M LMF site. The potential site is in the same place as Lancaster North A. Whereas Lancaster North A is proposed to accommodate an LMF/MOWF joint facility, Lancaster North B (at approximately 84 acres) would have a much smaller footprint because it would accommodate only an MOWF, including lead tracks.

3.3.7.3 Avenue M Maintenance Site and MOWF

This maintenance site and MOWF is on the west side of the HSR alignment and to the west of existing Sierra Highway at Avenue M in the Cities of Lancaster and Palmdale, respectively (Figure 5). The actual site is between W Avenue L-4 and Avenue O, which are both two-lane, paved roadways where access to the site can be gained and future utilities could be built to service the site. A combined LMF/MOWF could be accommodated here.

[4] Yards are facilities that reassemble inbound train cars into outbound trains.



Source: California High-Speed Rail Authority, 2020

Figure 5 Palmdale Area Detail Map, showing Avenue M Maintenance Site and Maintenance-of-Way Facility

3.4 Description of the Selected Alternative

The Authority has identified Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF. The Selected Alternative also includes associated electrical infrastructure such as traction power, catenaries, and signaling as described in the Final EIS. The Selected Alternative extends from immediately south of the previously approved Bakersfield F Street Station, at the intersection of 34th and L Streets in Bakersfield, and ends approximately 1.1 miles south of the Palmdale station to Spruce Court in Palmdale. Figure 1 shows the Selected Alternative.

From the F Street Station in Bakersfield, the alignment runs from Oswell Street to Morning Drive SR 184), with the Alternative 2 centerline on the north side of Edison Highway on a viaduct. East of Morning Drive, the alignment transitions from the Edison Highway corridor to the SR 58 corridor, reaching the freeway corridor at Edison Road. With Alternative 2, SR 58 would remain in its current alignment, but this alternative would require an elevated structure for the HSR tracks spanning the SR 58/Edison Road interchange diagonally. This would require another elevated structure crossing back over SR 58 just past Towerline Road and three additional elevated structures to cross the HSR over existing north-south roads (i.e., Malaga Road, Comanche Drive, and Tejon Highway) spaced approximately 1 mile apart between Edison and Towerline Roads.

The Alternative 2 alignment would continue eastbound parallel to Edison Highway toward Caliente Creek. From Caliente Creek to Bealville Road, Alternative 2 would continue southeast through Keene before beginning to climb the Tehachapi Mountains at a 2.8 percent vertical grade. The alignment would include a viaduct over Caliente Creek and a combination of cuts, fills,

tunnels, and viaducts before reaching and passing underneath Bealville Road. East of Bealville Road, the alignment would generally follow SR 58 north of the freeway to the SR 58 interchange with Broome Road. Between Bealville Road and Broome Road, the alignment would include three tunnels and five viaducts. The viaducts would span the UPRR, Tehachapi Creek, Avenue E, and Woodford-Tehachapi Road northeast of La Paz, and SR 58 at Broome Road, crossing SR 58 three more times as the two facilities form a braided configuration within the Tehachapi Creek canyon. Under the Refined CCNM Design Option, the viaduct would be 2,693 feet north of La Paz at its closest when it emerges from the tunnel.

As SR 58 turns south approaching the City of Tehachapi, the alignment would continue on an easterly path, along the edge of the city's future development area, through a 6,500-foot tunnel. The alignment would then curve farther south and pass to the east of the city, crossing over SR 58 near Arabian Drive before crossing the Tehachapi Valley on a straight alignment through the mountains southeast of Tehachapi in a 12,700-foot tunnel that roughly follows Tehachapi Willow Springs Road. As the alignment begins the 2.8 percent descending grade into the northern portion of Antelope Valley, a portion of Tehachapi Willow Springs Road would be realigned to the west near the Cameron Canyon Road intersection. This would place the HSR alignment east of Tehachapi Willow Springs Road, where it would cross the Pacific Crest Trail (PCT) and the Garlock Fault.

The alignment would pass just west of the existing CalPortland Cement Company limestone quarry in a 9,500-foot tunnel. A cover extending 1,700 feet from the northern terminus of Tunnel 9 would be constructed to protect the HSR infrastructure from potential damage from flyrock (see Section 4.10). The alignment would then continue southeast past the east side of Willow Springs International Raceway, where it would proceed across the Antelope Valley through Rosamond toward the north end of the City of Lancaster. The alignment would pass over SR 138 and SR 14 near their interchange and then would enter the City of Lancaster at Avenue H, running parallel to the Sierra Highway/UPRR corridor through Lancaster and Palmdale. Alternative 2 would require a realignment of the UPRR corridor to the east. Therefore, Alternative 2 would align east of Sierra Highway and west of the UPRR corridor.

In the Lancaster area, from Avenue H through the City of Lancaster, Alternative 2 would combine the HSR, UPRR, and Metrolink rail corridors into one corridor. Under Alternative 2, the new combined rail corridor would match the current western extent of the existing rail right-of-way and widen the corridor to the east as necessary to accommodate all three rail systems and their respective separation requirements. This alternative would require the relocation of all the UPRR and Metrolink facilities in the corridor from north of Avenue H to approximately Avenue L. The Lancaster Metrolink station building and parking facilities, however, would not need to be relocated. The alternative would create separate rights-of-way for the UPRR and Metrolink rail corridors to the east of the HSR right-of-way.

To avoid airspace restrictions from the U.S. Air Force Plant 42 Airport to the south, the alignment would begin a transition to the west at Avenue K. The alignment would continue to Avenue M, where it would be west of the existing UPRR/Metrolink right-of-way, which would remain in its existing location. The HSR alignment would then continue south, parallel to and along the westerly side of the existing rail corridor. The westerly transition of the alignment, from Avenue K to Avenue O, would require the relocation of approximately 4.2 miles of Sierra Highway to the west. The highway relocation would vary between 500 feet and 2,900 feet west of its existing location. This would provide a separation of 500 to 2,800 feet between the rail corridor and the highway until the section terminus at the Palmdale Station, at the Palmdale Transportation Center.

The Authority studied three alternative locations for maintenance facilities in the Draft EIS. Based on the evaluation of these alternatives, the Authority has identified the Avenue M Maintenance Site and MOWF in the City of Lancaster as part of the Selected Alternative for the Bakersfield to Palmdale Project Section. The Authority is reserving its decision on the location of the LMF site at this time. The Avenue M site has been chosen as the preferred Maintenance Site and MOWF location, because (1) the site satisfies the Authority's requirement for maintenance facilities to

have freight rail access for delivery of materials, (2) the southern location of the MOWF at Avenue M rather than at either of the Lancaster North sites would improve connectivity to the Palmdale Station and HSR project sections to the south of Palmdale, and (3) the Avenue M footprint area is of sufficient size to accommodate an LMF in the future.

3.5 Environmentally Preferable Alternative

The CEQ NEPA regulations require that the ROD identify all alternatives that were considered, "…specifying the alternative or alternatives which were considered to be environmentally preferable" (40 C.F.R. 1505.2).

In determining an environmentally preferable alternative, the Authority considered all B-P Build Alternatives as well as the No Action Alternative. The Authority weighed and balanced the physical environmental effects associated with the Build Alternatives as well as those associated with the No Action Alternative. The Authority determined that the adverse environmental effects associated with the Selected Alternative were less substantial than the environmental consequences associated with the No Action Alternative in terms of air quality and traffic, and thus identified the Selected Alternative as environmentally preferable. The Authority identified the environmentally preferable alternative by balancing the adverse and beneficial impacts of the alternatives on the human and natural environment. There was no single determining factor in identifying the environmentally preferable alternative because of the multitude of issues considered and the varied input received from stakeholders on each of the four B-P Build Alternatives. Furthermore, many impacts on the natural environment and community resources would be the same, or very similar, across all four B-P Build Alternatives and, therefore, do not always provide enough meaningful information to distinguish between the relative merits of the alternatives. Due to the similarity of the four B-P Build Alternatives, to identify an environmentally preferable alternative, various differentiators were identified based on stakeholder, agency, and community input:

- In the community of Edison, compared to Alternatives 1, 3, and 5 (which all have the same alignment in Edison), Alternative 2 would not require relocation of SR 58. This would result in fewer impacts on access and also would reduce the construction time period, which in turn would reduce the duration of construction-related impacts (e.g., noise, vibration, air pollution emissions). In addition, with its location south of SR 58, Alternative 2 is farther from key community resources, including Edison Middle School, low-income housing, and agricultural packing houses. This would reduce impacts related to noise, vibration, and access. However, because Alternative 2 would be on an elevated structure, it would have a greater effect on visual quality in the Edison area.
- In the Mojave area, compared to Alternatives 1, 2, and 5 (which all have the same alignment in the Mojave area), Alternative 3 would require an additional mile of tunnel. Alternative 3 would affect more areas permitted for future mining (e.g., CalPortland Cement Company's Mojave cement plant) compared to Alternatives 1, 2, and 5.
- In Lancaster, Alternatives 1, 2, and 3 (which all have the same alignment in Lancaster), would combine existing rail facilities into a narrower corridor while also providing room for any expansion needed by UPRR and Metrolink. This would eliminate the need to realign Sierra Highway in Lancaster. As a result, Alternatives 1, 2, and 3 would have fewer residential and commercial displacements in the downtown area. Furthermore, Alternatives 1, 2, and 3 would affect fewer motels that serve as de-facto affordable housing in this area.
- In the community of Keene, compared to Alternatives 1, 2, 3, and 5 and the CCNM Design Option, the Refined CCNM Design Option would be located farther from La Paz and would have reduced noise and visual impacts. The Refined CCNM Design Option would not be visible from many vantage points in La Paz and would include a landscaped berm to match the natural setting to minimize visual contrast with the landscape. This would reduce visual impacts overall compared to the B-P Build Alternatives and the CCNM Design Option. In addition, the Refined CCNM Design Option would include a noise barrier at least 12 feet in

height along a 0.57-mile at-grade section and the 0.13-mile bridge structure over Tweedy Creek to reduce noise exposure to La Paz staff and visitors.

Alternative 2 would also have the fewest temporary road closures in agricultural areas, the fewest severe operational noise impacts prior to mitigation, the fewest residential and business displacements, the lowest acreage of Important Farmland conversion, the lowest impact on overall habitat for special-status plant species, and the least impact on overall habitat for special-status wildlife species.

Table 8-A-1 in Appendix 8-A and Section 8.3.1.2 in the Final EIS provide a detailed comparison of the various criteria evaluated for the B-P Build Alternatives.

As described in Section 8.3 of the Final EIS, and in accordance with 40 C.F.R. 1505.2, Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF is the Environmentally Preferable Alternative. When compared to Alternatives 1, 3, 5, and the CCNM Design Option, Alternative 2 with the Refined CCNM Design Option would result in fewer impacts on historic properties, Section 4(f) properties, downtown areas, schools, EJ communities, and mining activities. Alternative 2 with the Refined CCNM Design Option would also result in fewer construction-related impacts, such as noise, vibration, hauling traffic, and air pollution emissions, because it does not require the relocation of SR 58, has fewer miles of tunnel construction, and has the fewest number of grade separations with local roadways.

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4 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. NEPA impact determination requires consideration of both context and intensity. Chapter 3 of the Final EIS includes a full discussion of the potential impacts of the Bakersfield to Palmdale 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 construction and operation of the project. In determining that the Selected Alternative will not result in impacts on these resources, implementation of IAMFs, mitigation measures, and best management practices (BMP) are presumed and will be required as part of project implementation as described further in Section 6.

Some resource sections do not have adverse impacts under NEPA and have been excluded in the following sections: Electromagnetic Interference and Electromagnetic Fields; Geology, Soils, Seismicity, and Paleontology; and Safety and Security.

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

4.1 Transportation

As discussed in Section 3.2, Transportation of the Final EIS, potential construction-related impacts from the Selected Alternative will include access and circulation disruptions that are equivalent in context and intensity to any of the Build Alternatives.

During operations, the Selected Alternative, as well as the other Build Alternatives, will not result in adverse impacts to alternative transportation modes (i.e., transit, bicycles, and pedestrians) and will not interfere with freight rail or aviation operations. In addition, the project will not result in adverse impacts to studied intersections or roadway segments. The majority of the Selected Alternative footprint (i.e., the rail alignments) will not result in significant or adverse impacts to the 70 intersections and 53 roadway segments evaluated in the Final EIS. Permanent road closures will occur on some low-volume roads, so there is little traffic that will be rerouted because of the Selected Alternative. Furthermore, very few intersections or roadway segments operate at or near capacity under existing conditions, so the potential for impacts is limited. The Palmdale Station would impact 6 intersections and 3 roadway segments in the RSA due to the volume of traffic being drawn to the station, and improvements at several locations in the City of Palmdale are available for future consideration to address these impacts under NEPA.

The Bakersfield Station—F Street (Locally Generated Alternative) will affect 11 intersections and 2 roadway segments. Improvements will be required to mitigate these impacts.

Additionally, the Selected Alternative will provide the following operation benefits:

- Reduction of vehicle trips on freeways, which will improve freeway level of service
- Reduction of vehicle miles traveled, which will reduce highway maintenance
- New grade-separated roadways, which will improve safety

To minimize potential effects on transportation, the Authority will implement numerous strategies and design features (set forth in IAMFs) that will avoid or minimize effects during construction, such as the adoption of a construction transportation plan and contractor requirements to avoid or minimize circulation and emergency access impacts due to road closures. In addition to these IAMFs, the Authority will require numerous mitigation measures that will further minimize and/or compensate for adverse effects of the Selected Alternative. These mitigation measures include use of flaggers, temporary traffic control officers along earthwork haul routes, and intersection and roadway improvements to address traffic delay impacts, provided that the Authority can enter into a Memorandum of Understanding with the City of Palmdale whereby the City assumes right-of-way and maintenance responsibilities for improvements within the City's jurisdiction.

4.2 Air Quality and Global Climate Change

As discussed in Section 3.3, Air Quality and Global Climate Change of the Final EIS, construction of the Selected Alternative will result in temporary construction increases in emissions of ozone precursors (volatile organic compounds and nitrogen oxides). Without mitigation, these emissions are expected to cause exceedances of the applicable air quality criteria thresholds in the Antelope Valley Air Quality Management District (AVAQMD), East Kern Air Pollution Control District (EKAPCD), and San Joaquin Valley Air Pollution Control District (SJVAPCD).

Construction of the Selected Alternative, as well as any of the other Build Alternatives, will cause exceedances of the applicable air quality criteria thresholds during construction. The exceedance of the nitrogen oxide threshold will be 254 tons per year for the Selected Alternative compared to 279 tons per year for Alternative 5 and 213 tons per year for Alternative 1. The exceedance of the volatile organic compounds threshold will be 25 tons per year for the Selected Alternative compared to 27 tons per year for Alternative 5 and 20 tons per year for Alternative 1. Some years under all alternatives have slightly higher emissions under the Refined CCNM Design Option. Implementation of mitigation measures will offset emissions through the Voluntary Emission Reduction Agreement Program (in the SJVAPCD), the Emission Banking Certificate program (in the EKAPCD), and the Air Quality Investment Program (in the AVAQMD) to bring the Selected Alternative into compliance with SJVAPCD, EKAPCD, and AVAQMD air quality plans.

Construction of the Selected Alternative, as well as any of the other Build Alternatives, will also generate direct and indirect greenhouse gas emissions during construction that could contribute to global climate change. However, these emissions will be temporary and will be offset from the emissions benefit that will occur during the operations period. As a result, the Selected Alternative will not result in global climate change impacts from greenhouse gas emissions.

The Selected Alternative, as well as any of the other Build Alternatives, will avoid localized impacts from asbestos and lead-based paint exposure, impacts from guideway/alignment construction, impacts to schools and other sensitive receptors during station construction, and impacts from concrete batch plants. In addition, the Selected Alternative will avoid localized cumulative impacts during construction.

In addition to adhering to general BMPs and required air quality management and GHG reduction strategies, the Authority will implement numerous strategies and design features (set forth in IAMFs) and mitigation measures to address the air quality impacts associated with construction of the Selected Alternative. The Authority will incorporate exhaust emissions requirements for construction equipment into contract specifications. The Authority will require that all heavy-duty off-road construction diesel equipment used during the construction phase uses the cleanest reasonably available equipment (including newer equipment or tailpipe retrofits). The contractor will document efforts undertaken to locate newer equipment (such as, in order of priority, Tier 4, Tier 3, or Tier 2 equipment) or tailpipe retrofit equivalents. All on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel, will consist of an average fleet mix of equipment model year 2010 or newer, but no less than the average fleet mix for the current calendar year as set forth in California Air Resources Board's EMFAC2014 database. Furthermore, the Authority will enter into an agreement through the Voluntary Emission Reduction Agreement Program with the SJVAPCD, will participate in the Emission Banking Certificate program with the EKAPCD, and will participate in the Air Quality Investment Program with AVAQMD to cover the portion of the Project approved and funded for construction within the San Joaquin Valley Air Basin and the Mohave Desert Air Basin, which will offset emissions for those years/pollutants that exceed General Conformity *de minimis* thresholds..

Operation of the Selected Alternative, as well as any of the other Build Alternatives, will provide statewide and regional air quality benefits. This will result in a permanent net benefit to air quality during operations because it will lower emissions of mobile source air toxics, greenhouse gases, volatile organic compounds, nitrogen oxide, sulfur dioxide, carbon monoxide, and particulate matter smaller than or equal to 10 microns and 2.5 microns in diameter by diverting trips from travel modes with higher emissions (e.g., commercial air flights and automobile trips) to HSR,

which has lower emissions. Therefore, the Selected Alternative will not result in exceedances of *de minimis* thresholds or SJVAPCD, EKAPCD, or AVAQMD thresholds.

4.3 Noise and Vibration

As discussed in Section 3.4, Noise and Vibration of the Final EIS, the Selected Alternative will have construction impacts related to noise for rail corridor, roadway, substation and power utility facilities for the Selected Alternative and any other Build Alternative. Construction vibration impacts will occur during rail corridor construction for the Selected Alternative and any other Build Alternative. The Selected Alternative (as well as the other Build Alternatives) will not have construction-related noise impacts due to construction of the maintenance-of-way facilities.

Operation of the Selected Alternative will generate noise levels above ambient levels from train pass-bys, resulting in adverse impacts from the exposure of sensitive receptors to severe noise without mitigation. The Selected Alternative results in the least amount of severe noise impacts to sensitive receptors out of all of the B-P Build Alternatives. With implementation of the Selected Alternative, residences and nonresidential sensitive receptors will experience severe noise and vibration impacts prior to mitigation. After mitigation, no operational vibration impacts will occur under the Selected Alternative or under any Build Alternative.

The Selected Alternative will have no operational impacts related to noise effects on wildlife and domestic animals, or traffic noise. Equestrian users of the PCT may experience impacts related to operational train noise prior to mitigation. The Selected Alternative will result in operational noise impacts on sensitive receptors from HSR stationary facilities, prior to mitigation.

To avoid or to minimize potential noise effects associated with operation, the Authority will adhere to all applicable state and federal regulations, including Federal Highway Administration and FRA guidelines for emissions of noise from transportation sources and for the abatement of excessive noise emissions.

Additionally, the Authority has developed project-specific design strategies that will further reduce the potential for adverse effects associated with operation of the Selected Alternative to levels below those that will be achieved through regulatory compliance alone. However, even with implementation of regulatory requirements and these project-specific design strategies, the Selected Alternative still has the potential to result in adverse impacts. To further reduce project-related operation noise, the Authority has developed mitigation measures that include sound barriers, building sound insulation, and noise easements; requiring preparation of and adherence to a construction noise mitigation and monitoring program; conducting subsequent noise and vibration environmental analysis during and following final design; ensuring that train vehicle procurement meets pertinent federal noise regulations for locomotives and rail cars; and ensuring station, maintenance-of-way facilities, and traction power substations are designed to reduce noise. Additionally, the Authority will implement horse startle effect warning signage along the PCT.

4.4 Public Utilities and Energy

As discussed in Section 3.6, Public Utilities and Energy of the Final EIS, construction of the Selected Alternative (or any of the Build Alternatives) will require the temporary shutdown of utility lines, such as water, sewer, electricity, telecommunications, fuel/petroleum, or gas, to safely move or extend these lines, which could interrupt utility services.

During construction, the potential for accidental disruption of utility systems, including overhead utility lines (e.g., telephone and cable television) and buried utility lines (e.g., water, sewer, and natural gas pipelines), is low due to the established practices of utility identification and notification. In addition, California Government Code Section 4216 establishes required procedures for identifying buried utilities prior to initiating excavation to help avoid accidental disruption of utility services.

Construction activities will use water to prepare concrete, to increase the water content of soil to optimize compaction for dust control, to reseed disturbed areas, for earthwork, and for tunnel

construction and excavation. Whereas Alternative 3 will result in the most construction water use, the Selected Alternative will use less water than existing demand. Because there will be a decrease in water demand, sufficient water supplies will be available; the Selected Alternative will not require the construction or expansion of a water treatment facility and will not require new or expanded entitlements.

Construction activities, such as grading and excavation, could redirect stormwater runoff and increase the volume and rate of stormwater runoff through soil compaction during ground-disturbing activities.

During operation, increased demand for public utilities may take place to operate the HSR system. The operation and maintenance of the Selected Alternative (or any of the Build Alternatives) will result in permanent relocation of one substation and extension of utilities, as well as reduced access to existing utilities in the project footprint. The Selected Alternative will conflict with 383 existing utilities, resulting in the lowest number of existing utility impacts out of the Build Alternatives. The Selected Alternative will implement standard engineering and utility access practices, which will avoid and minimize impacts related to reduced access to existing utilities in the HSR right-of-way; will implement regulatory requirements that will avoid and minimize impacts from upgrade or construction of power lines; and will not result in impacts from water demand, wastewater, waste generation, or hazardous waste generation during operation. Operation of the Selected Alternative will decrease automobile VMT and airplane flights statewide, which will reduce energy consumption, but will increase electricity demand.

The Authority has developed BMPs and IAMFs that will avoid or minimize adverse effects to utilities associated with the construction and operation of the Selected Alternative. These IAMFs include notification of planned utility outages, identifying utility lines prior to construction, implementation of on-site stormwater retention practices, incorporating utility and design elements that minimize electricity consumption, and implementation of the Authority's adopted sustainability policy that establishes project design and construction requirements to avoid and minimize energy consumption, relocation of impacted irrigation infrastructure, and relocation or abandonment of oil wells encountered during construction. Additionally, the Authority will implement mitigation measures that will require the reconfiguration or relocation of one impacted substation.

4.5 Biological and Aquatic Resources

As discussed in Section 3.7, Biological and Aquatic Resources of the Final EIS, the Selected Alternative will reduce adverse impacts on biological resources or wetlands after IAMFs and mitigation measures are implemented.

The Selected Alternative will have the fewest impacts of the Build Alternatives to special-status plant species habitat, permanent impacts to special-status wildlife species habitat, and permanent impacts to federal and state threatened/endangered species habitat. Additionally, the impacts from the Selected Alternative are mostly attributable to built features (i.e., irrigation ditches and ponds).

The Selected Alternative will have no impacts on critical habitat. Other resource impacts are described below:

- **Riparian habitat** will be temporarily and permanently affected during construction of the Selected Alternative. Restoration of riparian habitat shortly after construction disturbance will mitigate construction period impacts. Compensatory mitigation will mitigate permanent impacts.
- The Selected Alternative may disturb **special-status plant species** populations, but will have the lowest impact on overall habitat for special-status plant species of all the Build Alternatives. Measures to mitigate impacts on special-status plant species include developing and implementing a plan to address monitoring, salvage, relocation, and propagation of special-status plant species during and after construction; the purchase of credits from an existing mitigation bank; and/or conducting a special-status plant re-establishment program

within the same watershed or in proximity to the impact area. Mitigation measures and compliance with the FESA Section 7 Biological Opinion and the CDFW Incidental Take Permit will mitigate temporary and permanent impacts on special-status plant species.

- The Selected Alternative may permanently impact **jurisdictional waters and wetlands** consisting of 59.8 acres of permanent impacts to wetlands and other waters and 11.0 acres of temporary impacts. Although the Selected Alternative could cause disturbances to aquatic resources, they will be considered minimal after IAMFs and mitigation measures have been implemented to reduce and offset these impacts.
- The Selected Alternative may permanently impact **special-status wildlife species** populations, but will have the lowest impact on overall suitable habitat for special-status wildlife species of all the Build Alternatives. Measures to mitigate impacts on special-status wildlife populations include implementation of a Habitat Mitigation Plan, buffers for nests and dens, and compensation through habitat replacement or monetary contributions to an offsite mitigation bank, among others. Mitigation measures and compliance with the FESA Section 7 Biological Opinion and the CDFW Incidental Take Permit will mitigate impacts on special-status wildlife species.
- The Selected Alternative will result in permanent and temporary direct and indirect impacts on **wildlife movement corridors**. Project design elements will reduce effects of the project on wildlife movement corridors, and the implementation of wildlife crossings of the selected alignment, wildlife rescue measures, wildlife height requirements for fencing, the installation of wildlife jump-outs, and the implementation of lighting minimization measures for operations will further reduce project effects.

To minimize potential effects on biological resources, the Authority will implement numerous IAMFs that will avoid or minimize effects and will comply with all requirements of biological permits and authorizations. These IAMFs include designated areas for staging, access, and construction; biological monitors; bird-safe design features, and the establishment of protocols to further avoid or minimize impacts. In addition to these IAMFs, the Authority will require numerous mitigation measures that will further minimize and/or compensate for adverse effects of the Selected Alternative. These include broad mitigation strategies designed to minimize impacts through the establishment of environmentally sensitive areas and nondisturbance zones; installing wildlife exclusion fencing; conducting pre-construction surveys; and implementation of off-site habitat restoration, enhancement, and preservation strategies, including the acquisition of conservation easements and the purchase credits from an agency-approved mitigation bank. Additional mitigation measures have been developed to minimize potential effects on specific special-status species or groups of species.

4.6 Hydrology and Water Resources

As discussed in Section 3.8, Hydrology and Water Resources of the Final EIS, construction activities from the Selected Alternative will result in hydrology and water quality impacts on existing drainage patterns, and result in a redirection of stormwater runoff, decreased infiltration, and an increase in the volume and rate of stormwater runoff during storm events prior to mitigation. However, the Selected Alternative will have the least amount of net increases in impervious surfaces among the Build Alternatives. In limited reaches of this project section, tunnel construction may interfere with the groundwater flow systems which could result in the loss or reduction in water available to streams, seeps, springs, and water supply wells.

The Authority will implement IAMFs, BMPs, and mitigation measures to reduce these impacts. These measures include, but are not limited to, project design features for stormwater management and flood protection, preparation of a SWPPP, a construction site BMP field manual, a CMP, an SPCC plan, and a hazardous materials and waste plan; implementation of construction BMPs; delineation of equipment staging areas and traffic routes; reuse or disposal of construction spoils to reduce impacts on surface water quality during construction; erosion and sedimentation controls; dewatering plans; probing ahead of the tunnel face during tunneling; construction methods to reduce inflow of groundwater into the tunnel; tunnel waterproofing;

groundwater modeling; groundwater monitoring; tunnel inspections; implementation of an AMMP; and biological monitoring during construction activities within or adjacent to aquatic resources.

Operation of the Selected Alternative will result in impacts on existing drainage patterns, surface water quality, and groundwater recharge; changes in stormwater runoff; and a redirection of stormwater runoff, decreased infiltration, and an increase in the volume and rate of stormwater runoff during storm events prior to mitigation. During operation and maintenance activities, anticipated pollutants associated with a railway facility include heavy metals, nutrients, sediments, organic compounds, trash and debris, and oil and grease. The placement of piers within floodplain crossings and abutments near waterways also has the potential to cause localized scour. The Authority will implement design measures to reduce increases in floodplain water surface elevation) and compliance with the requirements set forth in USEO 11988 and the FEMA regulations during operation of the Selected Alternative. The Authority will also implement treatment BMPs to capture and treat stormwater runoff to remove pollutants of concern. The Selected Alternative will also be designed to collect and convey stormwater runoff to infiltration/detention basins or a nearby stormwater collection system, or dispersed in a nonerosive manner. The Authority will implement mitigation measures that require erosion control measures at piers and/or bridge abutments to minimize scour and siltation, and design of piers in channels to allow hydraulically smooth flow and to minimize erosion.

4.7 Socioeconomic and Communities

As discussed in Section 3.12, Socioeconomics and Communities of the Final EIS, the construction and operation of the Selected Alternative will have adverse effects on socioeconomics and communities related to community cohesion; displacement and relocation of residential and commercial properties, agricultural businesses, and community facilities; access disruption; changes in property and sales tax revenue and agricultural revenue; and temporary physical deterioration. The Selected Alternative will have the fewest residential and commercial displacements out of the Build Alternatives. In addition, with its location south of SR 58, the Selected Alternative is farther from key community resources, including Edison Middle School, low-income housing, and agricultural packing houses. Furthermore, the Selected Alternative will affect fewer motels that serve as de-facto affordable housing in Lancaster.

The Selected Alternative will incorporate mitigation measures and IAMFs to reduce project effects on socioeconomics and communities. These IAMFs will include transportation, noise, and air quality controls; context-sensitive design; and relocation assistance and benefits to displaced residents, businesses, and agricultural operations. The incorporation of IAMFs will minimize or avoid socioeconomic impacts of the Selected Alternative on community displacements and relocations. Mitigation measures include consultation with property owners and outreach as well as modifying design to ensure property access for remaining parcels.

The Selected Alternative will result in benefits related to socioeconomics and communities. The Selected Alternative will generate temporary and permanent gains in sales tax revenues because of project spending during construction and operation of the HSR system. During operations, the B-P Build Alternatives will provide circulation and economic benefits, and revenue losses anticipated during construction will not be expected to result in long-term economic changes to the regional economy in affected jurisdictions. Employment growth from construction and operation of Selected Alternative would be a benefit for the region, as it would provide jobs in areas with unemployed workers. These benefits will reduce the likelihood of physical deterioration in communities along the alignment.

4.8 Station Planning, Land Use, and Development

As discussed in Section 3.13, Station Planning, Land Use, and Development of the Final EIS, construction of the Selected Alternative will result in the temporary alteration of existing land use patterns, the permanent conversion of existing and planned land uses to transportation uses, and potential disruptions to planned developments.

Construction of the B-P Build Alternatives and the Selected Alternative will result in the temporary alteration of existing land use patterns and the permanent conversion of existing and planned land uses to transportation uses. The Selected Alternative will temporarily use the least amount of land outside the permanent footprint during construction and will permanently convert the least amount of land than all other Build Alternatives except for Alternative 5.

The Bakersfield Station—F-B LGA from the intersection of 34th and L Street to Oswell Street will not cause substantial changes in the long-term pattern or intensity of land use that will be inconsistent with adjacent land uses.

However, the Authority will implement IAMFs pertaining to noise and air quality controls; context-sensitive design; and relocation assistance and benefits to displaced residents, businesses, and agricultural operations. The incorporation of IAMFs will minimize or avoid impacts of Selected Alternative on station planning, land use, and development. The Authority will also implement mitigation measures pertaining to land use, air quality, noise and vibration, aesthetics, socioeconomics and communities, and parks and recreation that will help avoid and/or reduce potential temporary land use and development effects.

4.9 Agricultural Farmland and Forest Land

As discussed in Section 3.14, Agricultural Farmland and Forest Land of the Final EIS, construction of the Selected Alternative (as well as any of the other B-P Build Alternatives) will require the temporary use of Important Farmland for construction staging areas and other construction-related activities, permanent conversion of Important Farmland to a nonagricultural use (i.e., transportation), and will result in the creation of remnant parcels (which are too small to economically farm). However, among the Build Alternatives, the Selected Alternative only results in a temporary use of 2 more acres of Important Farmland than in the other Build Alternatives. Overall, among the Build Alternatives, the Selected Alternative will result in the least direct and indirect permanent conversion of Important Farmland and parcels under Williamson Act Contract, including conversion that may occur through the creation of remnant parcels. Construction and operation of any of the B-P Build Alternatives (not including the CCNM Design Option or Refined CCNM Design Option) has the potential to interfere with aerial spraying activities and generate wind-induced effects, but these effects will not permanently convert Important Farmland to nonagricultural use.

The Authority has developed IAMFs and BMPs that will avoid or minimize the Selected Alternative's impacts on Important Farmland (refer to Appendix C for details). However, even with adherence to these IAMFs, the Selected Alternative will still result in the permanent conversion of Important Farmland to a nonagricultural use. Therefore, through an existing agreement with the California Department of Conservation, the Authority funds the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts as well as the purchase of agricultural conservation easements from willing sellers. This agreement provides for the purchase of agricultural conservation easements to preserve Important Farmland (i.e., Prime, Unique, or Farmlands of Statewide or Local Importance) in an amount commensurate with the quantity and quality of converted farmlands. Because the Selected Alternative will require the lowest acreage of permanent conversion of Important Farmland compared to the other Build Alternatives, the Selected Alternative will require the lowest amount of mitigation for agricultural land.

The Authority will implement mitigation that will offset and minimize the permanent construction impacts that result from direct conversion of Important Farmland and indirect conversion of Important Farmland through the creation of remnant parcels. Because the mitigation will not create new farmland (e.g., convert natural land to agriculture), the Selected Alternative will not avoid permanent conversion of Important Farmland from construction of the Bakersfield to Palmdale Project Section.

4.10 Parks, Recreation, and Open Space

As discussed in Section 3.15, Parks, Recreation, and Open Space, of the Final EIS, the Selected Alternative will result in impacts on four parks and recreation facilities (the Pacific Crest Trail, R. Rex Parris High School, Dr. Robert C. St. Clair Parkway, and Weill Park) during construction. During operations, the Selected Alternative will result in the permanent acquisition of the entire R. Rex Parris High School property and 0.29 acres at Dr. Robert C. St. Clair Parkway. As identified in the Final EIS, the F-B LGA between the intersection of 34th and L Streets to Oswell Street in Bakersfield will result in the permanent acquisition of approximately 0.10 acre at Weill Park.

Under the Selected Alternative (and Build Alternatives 1 and 5) the PCT will be realigned to reduce the number of trail crossings under the proposed HSR viaduct. The proposed PCT realignment will require a permanent easement for the trail and maintenance easement from the property owner. The realignment of the PCT will also minimize visual/aesthetic impacts associated with the Selected Alternative by reducing the contrasting urban appearance of the project with the natural environment near the PCT.

Construction and operation of all B-P Build Alternatives, the CCNM Design Option, and the Refined CCNM Design Option will be near La Paz, which is considered a parks and recreation resource. With the Refined CCNM Design Option, an approximately 1,700-foot berm will be located at the same level as the catenary for the track. The berm would be an average of 80 feet in height from the existing ground, reducing visual impacts. Additionally, areas of ground disturbance would be recontoured and revegetated to minimize the visual effects associated with the earthwork required to construct the project. The alteration to the views will be minimal, distant, and low within the viewsheds, only visible from a few locations within the historic property, and will not reduce the isolation of the setting. Therefore, the Refined CCNM Design Option will avoid visual impacts to La Paz.

The Authority will implement IAMFs that will reduce impacts on parks and recreation facilities. These IAMFs will include design features to provide access to parks and recreational facilities for a range of travel modes (e.g., bicycle, pedestrian, vehicle) and to preserve user experience of recreational facilities near HSR infrastructure. IAMFs specific to transportation, noise, and air quality will also minimize indirect impacts on park facilities related to park access, construction-related noise, and fugitive dust. These IAMFs will minimize most impacts on park and recreation facilities. Additional mitigation for the permanent acquisition of park property will consist of offering compensation or land (or both) for the taking of parkland, consulting with the property owner regarding specific conditions of the impacts, and by working with relevant jurisdictions to establish appropriate compensation and relocation/realignment of a resource.

Mitigation for temporary and permanent effects on the PCT will reduce temporary trail closures and detours on the PCT by development and implementation of a Trail Facilities Plan, visual/aesthetic impacts will be minimized by reducing the contrasting urban appearance of the project with the natural environment near the PCT, and startle impacts on equestrian users would be reduced by providing advance warning signage ahead of the PCT crossing under the HSR viaduct.

4.11 Aesthetics and Visual Quality

As discussed in Section 3.16, Aesthetics and Visual Quality of the Final EIS, construction of the Selected Alternative will involve temporary impacts related to creation of new sources of light, glare, and dust. The Selected Alternative (as well as the remainder of the B-P Build Alternatives) will represent a visual change, with the degree of change dependent on the surrounding environment. The Selected Alternative (as well as the remainder of the B-P Build Alternatives) will result in adverse changes to visual quality in some areas, either by blocking scenic views or by visual intrusion of the HSR, guideways, associated road crossings, and other project structures that will be out of character or scale with the surroundings. However, the Selected Alterative results in the least operational impacts to key viewpoints. Where the HSR features will be compatible with the existing environment or where no sensitive viewers are located, such as most locations in the Tehachapi Mountains, the Selected Alternative will not have an adverse effect.

Implementation of the Refined CCNM Design Option to any of the B-P Build Alternatives reduces the visual effects at four viewpoints in the Tehachapi Mountains and will eliminate adverse effects at La Paz.

Other than the differences discussed above, the Selected Alternative will have comparable impacts to Aesthetics and Visual Quality as the other Build Alternatives.

To avoid or reduce other visual impacts of the Selected Alternative, the Authority has developed BMPs and similar strategies as IAMFs (refer to Appendix C of this ROD for details). These IAMFs include adherence to design strategies that will avoid, minimize, and reduce adverse effects on aesthetic and visual resources.

However, to further reduce potential adverse visual effects associated with construction of the Selected Alternative, the Authority has developed mitigation measures that require contractors to minimize and/or screen construction areas and minimize or avoid nighttime light disturbance. These mitigation measures also require the Authority to engage with local communities to help inform the design of elevated guideways so that they are more visually harmonious with the local context. Landscape treatments, screening, and other plantings after construction will also enhance visual quality, along with mitigation measures to ensure the prompt treatment of graffiti on new infrastructure.

4.12 Cultural Resources

As discussed in Section 3.17, Cultural Resources of the Final EIS, the Selected Alternative will affect prehistoric and historic-era archaeological resources and historic built environment resources and may affect presently unknown or undiscovered cultural resources. All B-P Build Alternatives will result in direct adverse effects on the Big Creek Hydroelectric System Historic District in Bakersfield, which is a historic architectural (or built) property. The adverse changes to the Big Creek Hydroelectric System Historic will be fully mitigated per the mitigation described in the final paragraph of this section and by coordination with Southern California Edison regarding their towers and interpretive signage.

All B-P Build Alternatives and the CCNM Design Option will also result in direct adverse effects on La Paz. The Selected Alternative includes the Refined CCNM Design Option, which was developed in 2019 specifically to avoid impacts to La Paz. Under the Selected Alternative, none of the characteristics of La Paz that qualify it for inclusion in the NRHP will be affected in a manner that will diminish the integrity of the property's location, design, materials, workmanship, feeling, or association. Therefore, the Selected Alternative will not result in an adverse effect on La Paz. Although the setting outside of La Paz will be altered, the alteration will be minimal, distant, natural in appearance, low on the horizon, and only visible from a few locations within the historic property, and it will not make the setting any less isolated. With the inclusion of the contoured vegetated berm and sound barrier, audible and visual effects will be avoided. As such, the undertaking will result in no adverse effect to La Paz, with conditions.

To avoid or reduce cultural resources impacts of the Selected Alternative, the Authority has developed BMPs and similar strategies as IAMFs (refer to Appendix C of this ROD for details). These include requirements for additional surveys, training sessions for construction personnel to be able to identify cultural resources, a monitoring plan, a discovery plan, procedures if unanticipated discoveries are made during ground-disturbing activities, and plans to protect and to avoid or minimize damage to historic properties. Additionally, the Selected Alternative will incorporate mitigation measures concerning both archaeological resources and built environment resources. Mitigation measures include phased identification of archaeological and built environment resources, allowing for the potential discovery of previously unidentified resources once access to all properties within the construction area is secured. Surveys for such resources will be conducted on all properties that have not been subject to prior surveys before construction begins.

4.13 Regional Growth

As discussed in Section 3.18, Regional Growth, of the Final EIS, the Selected Alternative will not induce substantial unplanned employment or population growth or land use consumption.

Regional growth effects related to construction of the Selected Alternative will result in approximately 156,900 direct, indirect, and induced jobs. These jobs will account for an additional 0.7 percent of the total jobs projected in the RSA at the peak of construction, which will not be substantial in the context of the RSA's overall economy. Of these jobs, approximately 17,000 will be direct jobs in the construction sector, which will represent 10.7 percent of the projected construction jobs in the RSA at the peak of construction. The Authority has been implementing a variety of programs to help local residents gain skills to compete for available HSR jobs, as well as the Community Benefits Agreement, which requires contractors to commit 30 percent of all construction dollars to hiring small businesses. The emphasis on job training for local workers and contract requirements to use small businesses should provide employment opportunities for construction workers in the RSA. Additionally, because construction activities will be temporary, it is unlikely that construction workers from outside the RSA who work on the project will relocate their families to communities in the RSA. Thus, the construction of the Selected Alternative will not induce substantial unplanned employment or population growth or land use consumption. Therefore, construction of the proposed improvements for the Selected Alternative will not result in substantial regional growth effects.

Furthermore, it is anticipated that housing constructed in these communities to accommodate such population growth will be consistent with the adopted land use plans, policies, and regulations of local governments. Therefore, the Selected Alternative will not induce substantial unplanned population growth or land use consumption.

4.14 Cumulative Impacts

As discussed in Section 3.19, Cumulative Impacts, of the Final EIS, adherence to IAMFs and/or mitigation measures will avoid or minimize most impacts associated with construction and operation of the Selected Alternative, as well as the other Bakersfield to Palmdale Alternatives. However, when combined with other past, present, and reasonably foreseeable projects, the construction of the Selected Alternative (as well any of the Bakersfield to Palmdale Alternatives) will, even with adherence to mitigation measures, contribute to cumulative impacts in air quality and greenhouse gases, socioeconomics and communities, agriculture and farmlands, and cultural resources, and the operation of the Selected Alternative will, even with adherence to mitigation measures, contribute to cumulative impacts in noise.

Construction of the Selected Alternative, in combination with cumulative projects, has the potential to increase emissions of carbon monoxide, for which the RSA is in nonattainment under federal ambient air quality standards for all B-P Build Alternatives. Even with the purchase of emissions offsets, mitigation would not reduce carbon monoxide emissions below thresholds. Therefore, the Selected Alternative, in combination with cumulative projects, will result in a cumulative impact under NEPA.

Construction of the Selected Alternative, in combination with cumulative projects, will result in permanent disruption or division of communities and permanent displacement and relocation of residents, businesses, and community facilities in the RSA. Cumulative Mitigation Measure CUM-SO-MM#1, Coordination with Cumulative Construction Project Sponsors, will require HSR project sponsors to coordinate construction schedules and potential closures, detours, and other elements of construction with other entities, including local or regional governments, to minimize cumulative effects to the extent feasible. However, cumulative impacts to community cohesion will occur under all B-P Build Alternatives, but the number of residents, businesses, and community facilities displaced will vary. Even though the Selected Alternative will result in the fewest displacements, it will have a cumulative impact under NEPA because, in combination with other projects, the proposed improvements will permanently disrupt established patterns of interaction among community residents and directly displace residents, businesses, and community facilities.

Construction of the Selected Alternative, in combination with cumulative projects, will result in the conversion of Important Farmland and parcels under Williamson Act contracts. The Selected Alternative includes a project-level mitigation measure to address the loss of Important Farmland. However, mitigation would not create new farmland (i.e., convert natural land to agriculture) and therefore would not address the permanent net loss of Important Farmland. No additional mitigation is available to reduce this cumulative impact. Cumulative impacts will occur under all B-P Build Alternatives, but the number of acres of Important Farmland that will be converted to other uses will vary. The Selected Alternative will have the smallest incremental impact, as it will result in the conversion of 565 acres of Important Farmland (522 acres from project construction and an additional 43 acres converted due to parcel severance), 621 of which are zoned for agriculture use and 86 of which are under a Williamson Act contract. Because the Selected Alternative will permanently convert Important Farmland, Important Farmland under a Williamson Act contract, and Important Farmland zoned for agricultural use to nonagricultural use, the project will have a cumulative impact under NEPA.

Operation of the Selected Alternative, in combination with cumulative projects, will result in cumulative noise impacts. Cumulative noise impacts will occur under all B-P Build Alternatives, but the number of sensitive receptors affected varies. The Selected Alternative will result in the smallest incremental noise impacts, as it will severely affect sensitive receptors. Nonetheless, the Selected Alternative will result in a cumulative impact.

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5 MITIGATION COMMITMENTS AND MONITORING

Consistent with 40 C.F.R. 1505.2(c), all practicable means to avoid or minimize environmental harm caused by the Selected Alternative have been identified and incorporated as IAMFs. Further means to reduce and/or compensate for environmental impacts have been identified and included as mitigation measures included in the MMEP, provided as Appendix C. The Authority will monitor the implementation of environmental commitments in the MMEP consistent with the NEPA Assignment MOU and with CEQ 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 Bakersfield to Palmdale Project Section of the California HSR System. Pursuant to its responsibilities under the NEPA Assignment MOU, these measures were developed by the Authority in consultation with appropriate agencies, as well as with input received from the public.

The Selected Alternative also incorporates many IAMFs that are identified in the Final EIR/EIS. The Authority, as part of the EIR/EIS, identified these IAMFs to avoid and minimize potential Project impacts. The Authority will apply these IAMFs and BMPs to avoid impacts in several resource areas. Regulatory requirements (such as hazardous material disposal and various mandatory safety strategies) provide additional assurance that impacts on the environment will not occur or will be minimized to the fullest extent practicable. The applicable regulatory requirements and the IAMFs 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.

All IAMFs and mitigation measures are included in Appendix C of this ROD. 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 design-build contractor, 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.

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6 SUMMARY OF COMMENTS ON THE FINAL EIS AND RESPONSES

During the 30-day waiting period following publication of the Final EIS, the Authority received 33 comment submittals. Staff reached out to individual commenters throughout the waiting period and provided responses. All substantive comments the Authority received during the waiting period referenced issues that were previously addressed in detail in Volume 4 of the Final EIS or by the Authority staff's responses to the individual commenters providing the requested specific information and therefore do not require any further response here. No issues were identified in the comments that were not previously addressed.

The range and types of comments received during the waiting period included concerns and questions on the following topics:

- General opposition to the project
- General support of the project
- Property appraisal process
- Project impacts to specific properties along the Selected Alternative
- Requests for copies of the environmental document(s) or supporting technical studies
- Request for an extension on the comment period

Copies of all correspondence received are included in Appendix D, Comments Received during the Final EIS Waiting Period, of this ROD.

In issuing this ROD, the Authority has considered all comments received on the Final EIR/EIS, as well as the comments previously received on the Draft EIR/EIS and Revised Draft EIR/Supplemental Draft EIS.

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7 CORRECTIONS TO FINAL EIS

As a part of the California High-Speed Rail Authority's review of the Bakersfield to Palmdale Project Section Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS), several minor corrections and clarifications were identified. Corrections are identified in Appendix E of this document. The corrections and clarifications are not considered significant new information, and do not change the analysis or conclusions of the EIS. These corrections and clarifications address items already covered in the Final EIS. These clarifications do not trigger the need to prepare a supplement, per the Council on Environmental Quality National Environmental Policy Act (NEPA) regulations (40 Code of Federal Regulations [C.F.R.] 1502.9(c)(1)). The errata described within Appendix E of this ROD are herewith corrected in the Final EIS and associated technical reports for the Bakersfield to Palmdale Project Section of the California High-Speed Rail System.

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8 DECISION

The Authority finds that Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF, identified in the Final EIS as the Preferred Alternative, is the Selected Alternative. In making this finding, 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. The specific limits of the Selected Alternative are from the intersection of 34th Street and L Street in Bakersfield in the north to Spruce Court in Palmdale in the south.

In reaching this decision, the Authority considered the physical and operational characteristics and potential environmental consequences associated with the B-P Build Alternatives. In reaching this decision, the Authority, as lead agency, consulted with the cooperating agencies and considered the Draft EIR/EIS, Revised Draft EIR/Supplemental Draft EIS, and Final EIR/EIS, including the analysis of the No Action Alternative, all action alternatives, and all public and agency comments received during the review periods.

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

8.1 Section 106

Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) 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 NRHP. The FRA, the SHPO, the Authority, and the Advisory Council on Historic Preservation executed the Section 106 PA on July 22, 2011 and extended the PA by executing a First Amendment on July 21, 2021. The Section 106 PA sets forth numerous requirements intended to ensure appropriate treatment of historic resources during ground-disturbing activities associated with project construction. The Section 106 PA also provides protocols for how and when formal eligibility determinations will be made. Eligibility determinations will be made by the appropriate agency based on information presented in the appropriate, completed state site record forms. Moreover, the Section 106 PA sets forth requirements for tribal monitoring of construction activities to help ensure protection of cultural resources that may be encountered. Adherence to the terms of the Section 106 PA will fulfill all obligations under Section 106.

In accordance with the Section 106 PA, an MOA for the treatment of adverse effects on historic properties in the Bakersfield to Palmdale Project Section of the California HSR System was executed by the SHPO and the Authority on June 22, 2021. Consulting parties include: BLM, National Park Service, Los Angeles County Department of Regional Planning, Cesar Chavez Foundation/National Chavez Center, National Parks Conservation Association, National Trust for Historic Preservation, Southern California Edison, Picayune Rancheria of Chukchansi Indians, San Manuel Band of Mission Indians, Santa Rosa Rancheria Tachi-Yokut Tribe, Table Mountain Rancheria, Tejon Indian Tribe, Tule River Tribe, Barbareño/Ventureño Band of Mission Indians, Fernandeño Tataviam Band of Mission Indians, and the Kern Valley Indian Community.

The MOA summarizes the results of the Section 106 process and the treatment measures for both above- and below-ground cultural resources.

The assessment of adverse effects required under Section 106 of the National Historic Preservation Act was documented in the Section 106 Finding of Effect Report and Section 106 Addendum Finding of Effect Report that the SHPO approved in June 2020, March 2021, respectively. The SHPO concurrence letters are provided in Appendix F to this ROD.

8.2 Section 4(f)

Projects that are undertaken by an operating administration of the U.S. Department of Transportation (DOT) or that may receive federal funding and/or discretionary approvals from such an operating administration must demonstrate compliance with Section 4(f) of the DOT Act

of 1966. Section 4(f) protects publicly owned lands that are parks, recreational areas, and wildlife refuges. 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 Bakersfield to Palmdale Project Section.

As described in Chapter 4 of the Draft EIR/EIS, Section 4(f) properties were considered throughout the planning and alternatives development and analysis process to avoid and minimize impacts on resources protected by Section 4(f). During this process, options were developed to address concerns specific to Section 4(f) resources such as Weill Park, La Paz, the PCT, and Big Creek Hydroelectric System Historic District (BCHSHD), where several design options were developed that will minimize or avoid adverse Section 4(f) resource impacts. The Final EIR/EIS contains the Authority's evaluation of whether the Bakersfield to Palmdale alternatives will result in any of the following "uses" of properties protected under Section 4(f):

- Permanent use (which encompasses permanent easements or temporary easements that exceed limits for temporary occupancy)
- Temporary occupancy
- Constructive use

Impacts were then evaluated to see if the criteria for a *de minimis* impact determination were met and appropriate coordination with officials having jurisdiction over each resource was conducted. Thirty-eight (38) Section 4(f) properties are present in the Selected Alternative's RSA for recreational and cultural resources. Of the 38 properties evaluated, one park (Weill Park) was determined to have a *de minimis* impact, one recreation resource (PCT) was determined to have a *de minimis* impact, and one historic resource (the residence at 332 W Lancaster Boulevard) was determined to have a *de minimis* impact. Another historic resource, the BCHSHD, was determined to have a permanent use. The remaining properties were determined to not have a Section 4(f) use. The Authority issued its Draft Section 4(f) Evaluation in the Draft EIR/EIS and finalized that Section 4(f) Evaluation in the Final EIR/EIS. The analysis and information in the Section 4(f) Evaluation included with the Final EIR/EIS is incorporated herein by reference.

8.2.1 Measures to Minimize Harm/Mitigation

The Authority developed measures to minimize harm to the Section 4(f) resources (discussed under Table 2, below) during project planning to avoid or minimize impacts, as well as mitigation measures to compensate for unavoidable project impacts as described in Tables 4-11, 4-12, and 4-13 in the Final EIR/EIS. The measures identified in these tables are now incorporated into the Selected Alternative. The Authority is continuing ongoing coordination, as appropriate, with the officials with jurisdiction over the Section 4(f) properties. During final design, the Authority, in consultation with the officials with jurisdiction, may identify and implement additional measures to further reduce potential impacts to Section 4(f) properties.

8.2.2 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. After making a Section 4(f) determination and identifying measures to minimize harm, if there is more than one alternative that results in the use of a Section 4(f) property, the Authority must also compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute.

As described in Chapter 4 of the Draft and Final EIR/EIS and the Fresno to Bakersfield Section Final Supplemental EIS, the Authority finds that the impacts on the two park/recreational resources, Weill Park and the PCT, will be *de minimis* and that the impacts on the Lancaster historic resource will also be *de minimis*. The City of Bakersfield, the official with jurisdiction over

Weill Park, concurred in writing with this finding on September 12, 2018 (see Appendix G). The U.S. Forest Service, the official with jurisdiction over PCT, concurred in writing with this finding on February 17, 2021 (see Appendix G). The SHPO, the official with jurisdiction over the Lancaster historic resource, also concurred in writing with this finding (see Appendix G).

The Authority has made a permanent use determination under Section 4(f) for the Big Creek Hydroelectric System Historic District (BCHSHD). As described in Chapter 4 of the Draft and Final EIR/EIS, the Authority came to this determination after undertaking an evaluation to conclude that there are no feasible or prudent avoidance alternatives to the Selected Alternative, the Selected Alternative includes all possible planning to minimize harm to the 4(f) property resulting from such use, and the Selected Alternative causes the least overall harm in light of Section 4(f)'s preservation purpose.

Among all of the B-P Build Alternatives, the Selected Alternative would result in the least overall harm to resources protected by Section 4(f) because they would not result in the permanent use of Whit Carter Park or the removal of the Denny's Restaurant #30 (Village Grille) that would take place under Alternative 5. Thus, the Selected Alternative would cause the least overall harm to Section 4(f) resources.

8.3 General Conformity Determination

As part of the environmental review of the Bakersfield to Palmdale Project Section, the Authority conducted and FRA approved a general conformity evaluation pursuant to 40 C.F.R. Part 51, Subpart W, and 40 C.F.R. Part 93, Subpart B. The Authority conducted the general conformity evaluation following all regulatory criteria and procedures and in coordination with the U.S. Environmental Protection Agency, the SJVAPCD, the EKAPCD, the AVAQMD, and the California Air Resources Board. As a result of this review, the FRA found that project-generated emissions will be fully offset (for construction phase) or less than zero (for operational phase), considering the following commitments:

- Prior to commencement of construction of the Bakersfield to Palmdale Project Section, the Authority will enter into a Voluntary Emission Reduction Agreement with the SJVAPCD, will participate in the Emission Banking Certificate Program with EKAPCD, and will participate in the Air Quality Investment Program with AVAQMD.
- The Authority has committed, at a minimum, to offset emissions for those years/pollutants that exceed General Conformity *de minimis* thresholds.

Therefore, the FRA has concluded that the proposed project, as designed, conforms to the purpose of the approved State Implementation Plan and is consistent with all applicable general conformity requirements. The Final General Conformity Determination is included with this ROD as Appendix A.

8.4 Section 7 Endangered Species Findings

The proposed action (construction and operation of the Selected Alternative) is in compliance with Section 7 of FESA. Because the proposed action is likely to have an impact on threatened or endangered species subject to USFWS jurisdiction, the Authority prepared a Biological Assessment (BA) for the project and consulted with USFWS, as required under Section 7 of FESA. After evaluating the potential effects of the proposed action, but prior to implementation of IAMFs and/or mitigation, the Authority determined that the Bakersfield to Palmdale Project Section may affect, and is likely to adversely affect, the following species:

- Kern mallow (*Eremalche kernensis*)
- Bakersfield cactus (*Opuntia basilaris* var. *treleasei* [*O. treleasei*])
- San Joaquin adobe sunburst (*Pseudobahia peirsonii*)
- Kern primrose sphinx moth (*Euproserpinus euterpe*)
- Blunt-nosed leopard lizard (*Gambelia sila*)
- Desert tortoise (*Gopherus agassizii*)
- Least Bell's vireo (*Vireo bellii pusillus*)

- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)

The Authority submitted the BA, which evaluated direct, indirect, and cumulative effects of the project on federally listed species and their designated critical habitat, to the USFWS on April 28, 2020, and requested the initiation of formal Section 7 Consultation. The Authority's informal and formal Section 7 consultation with USFWS has been ongoing and was instrumental in scoping the biological resource analysis for the EIS Documents, as well as for the BA.

Following USFWS review and additional consultation and coordination, USFWS issued a Biological Opinion (BO) for the Bakersfield to Palmdale Project Section on June 16, 2021 (provided as Appendix B to this ROD). In the BO, USFWS concurred with the determinations made by the Authority that the Selected Alternative for the Bakersfield to Palmdale Project Section, as proposed, is not likely to jeopardize the continued existence of the nine listed wildlife and plant species above that occur in the action area. Consistent with Section 7 requirements, the Biological Opinion also stipulates several reasonable and prudent measures to avoid or minimize potential incidental take of the six animal species. The Authority will implement the measures identified in the USFWS BO.

Because the Selected Alternative does not encounter marine or anadromous fish habitat within the project footprint, the Selected Alternative would not affect any marine or anadromous fish species or habitat. There is no essential fish habitat in the Selected Alternative footprint. Therefore, the Authority was not required to consult with the NMFS under Section 7 of the ESA or the Magnuson-Stevens Fishery Conservation and Management Act. The proposed action complies with the Magnuson-Stevens Act.

8.5 Wetlands Finding

In addition to NEPA and other environmental laws, the federal lead agency is also required to make findings pursuant to Executive Order 11990, Protection of Wetlands, and the U.S. DOT Wetlands Order, DOT Order 5660.1A.

Aquatic resources in the Bakersfield to Palmdale Project Section include state streambeds and lakes and other waters of the state, which are regulated by the CDFW and the State Water Resources Control Board. Aquatic resources were identified during the jurisdictional delineation (see the *Bakersfield to Palmdale Project Section Aquatic Resources Delineation Report* [Authority 2016a]). In 2017, the USACE concurred with the Authority's determination that, although many features in these areas meet federal technical criteria that define wetlands and other waters, these features are not jurisdictional under the CWA due to their isolation. Because the waterbodies identified in the Bakersfield to Palmdale Project Section are all isolated, the USACE is not asserting jurisdiction under Section 404 of the CWA over any areas that would otherwise be delineated as wetlands or waters of the U.S.

Aquatic resources for the portion of the project from the intersection of 34th Street and L Street to Oswell Street in Bakersfield are limited to one 0.37-acre retention/detention basin at 30th Street between San Dimas Street and SR 204. Aquatic resources were identified during the jurisdictional delineation (see the *Fresno to Bakersfield Locally Generated Alternative Final Wetlands Report* [Authority 2017]). Based on the Preliminary Jurisdictional Determination letter dated June 1, 2017, the USACE determined this feature is a potential jurisdictional aquatic resource ("waters of the United States") regulated under Section 404 of the CWA. Therefore, a Section 404 permit may be required for impacts to this resource.

Based upon USACE findings and the Authority's evaluation, the Authority determines that the project is consistent with Executive Order 11990 and DOT Order 5660.1A.

8.6 Floodplains Finding

DOT Order 5620.2 implements Executive Order 11988, Floodplain Management. These orders state that the federal lead agency may not approve an alternative involving a significant encroachment on floodplains unless the agency can make a finding that the proposed

encroachment is the only practicable alternative. The major purposes of Executive Order 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 EIR/EIS, the Authority, as the federal lead agency under the NEPA Assignment MOU, concludes that the Selected Alternative will not result in any substantial adverse impacts on natural and beneficial values of the floodplains, will not result in a substantial change in flood risks or damage, and will not have a substantial potential for interruption or termination of emergency service and evacuation routes. Design of the Selected Alternative includes effective measures to avoid or to 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 will not occur. Based upon these findings, the Authority determines that the project is consistent with requirements of Executive Order 11988.

8.7 Environmental Justice Finding

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and the DOT Order on Environmental Justice require that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations ("environmental justice communities").

The Bakersfield to Palmdale alternatives, including the Selected Alternative, will result in adverse effects on all populations, including low-income or minority populations residing along the project corridor, primarily within the community of Edison, City of Bakersfield, City of Lancaster, and City of Palmdale. For the Selected Alternative, the Authority has held more than 150 meetings, briefings, and outreach activities to date with community stakeholders, businesses, local agencies, and elected officials in environmental justice communities to gather, confirm, and understand key community concerns so that these concerns are considered both in the development of alternatives and during the environmental process. As discussed in Chapter 5 of the Final EIR/EIS, the Selected Alternative may result in disproportionately high and adverse effects on minority or low-income populations related to the following during construction:

- Residential and/or business displacement and relocation (portions of Lancaster and Palmdale)[5]

The Selected Alternative may also result in disproportionately high and adverse effects on minority or low-income populations related to the following during operation:

- Noise (portions of Bakersfield, Edison, Palmdale, and Lancaster)[6]
- Visual/Community cohesion (portions of Edison)[7]
- Residential and/or business displacements and relocation (portions of Bakersfield)[8]

The Selected Alternative will include the application of IAMFs and all practicable mitigation measures that reduce but may not eliminate disproportionate adverse effects on low-income and

[5] Effects would be limited to identified parcels in the census block groups or neighborhoods identified in Chapter 5 of the Final EIR/EIS, with most such displacements occurring in Palmdale and Lancaster.

[6] Effects would be limited to identified sensitive receptors located in portions of the census block groups identified in Chapter 5 of the Final EIR/EIS.

[7] Effects would be limited to portions of the census block groups identified in Chapter 5 of the Final EIR/EIS, with all such community cohesion effects occurring in two neighborhood portions of Edison.

[8] Effects would be limited to portions of the census block groups identified in Chapter 5 of the Final EIR/EIS, with most displacements occurring in portions of Bakersfield.

minority populations (see the MMEP, Appendix C). Among these measures, three mitigation measures specific to environmental justice communities were identified during the 30-day FEIS availability period to address potential disproportionately high and adverse effects and were added to the MMEP as EJ-MM#1 through EJ-MM#3. These mitigation measures will reduce but may not eliminate disproportionate effects. With compliance with the Uniform Act, it is expected that most displaced businesses would relocate within relatively close proximity (e.g., within the same or adjacent community or city) to their current locations. If most displaced businesses and residents are able to relocate within relatively close proximity to their current location, then this impact will not be disproportionately high and adverse. The project includes various mitigation measures that address relocation through locating suitable replacement properties and facilities and additional outreach to affected minority and low-income populations, such as, but not limited to, facilitated community workshops. The Authority will continue to consider community input received from impacted low-income or minority communities in determining whether changing circumstances or new information could result in additional practicable measures, if any, to reduce effects within the Bakersfield to Palmdale Project Section.

The Authority also considered the potential offsetting benefits associated with the Selected Alternative. The HSR project would result in beneficial effects to all populations, including low-income and minority populations: sales tax gains, regional employment, regional transportation, transportation safety, and regional air quality. Some benefits such as sales tax gains would be particularly concentrated in the vicinity of the Bakersfield and Palmdale HSR station sites and the maintenance facilities, which are in or near areas where most of the Selected Alternative's low-income and minority populations live.

Other alternatives have been evaluated as described in Chapter 2, Alternatives, of the Final EIR/EIS. The Authority, as NEPA lead agency, has determined none would have fewer adverse effects on environmental justice communities and satisfy the need for the project. For example, alternatives that were eliminated from consideration generally had more tunnel miles, higher capital costs, more relocation impacts and displacements, and greater effects on cultural and Section 4(f) resources. Therefore, the Authority, as NEPA lead agency, has determined that no other alternatives to the B-P Build Alternatives are practicable that would have fewer adverse effects on protected populations while also satisfying the purpose of the HSR project.

The Authority, as NEPA lead agency, also has determined that there is a substantial need, based on the overall public interest and great public benefit (as described in Section 1.2.4, Statewide and Regional Need for the High-Speed Rail System in the Bakersfield to Palmdale Project Section Vicinity, of the Final EIR/EIS) for an HSR system that connects the Los Angeles area to the San Francisco Bay Area (of which the connection with the Bakersfield to Palmdale Project Section is an indispensable part).

The approximately 80-mile-long Bakersfield to Palmdale Project Section is an essential component of the statewide HSR system. The Bakersfield to Palmdale Project Section would provide the cities of Bakersfield, Lancaster, and Palmdale, as well as other communities in the vicinity of the proposed HSR stations, with access to a new transportation mode, bridge a statewide passenger rail gap, and contribute to increased mobility throughout California, filling the statewide need for intercity passenger rail transportation connectivity.

9 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 its statutory mission and the responsibilities assigned to it by FRA pursuant to NEPA Assignment, considering economic, environmental, technical, and other factors and based on the information contained in the Final EIR/EIS and the project record.

For the Bakersfield to Palmdale Project Section, the Authority approves Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF, with the specific limits extending from the intersection of 34th Street and L Street in Bakersfield in the north to Spruce Court in Palmdale in the south. The Authority has selected this alternative because (1) it best satisfies the Purpose, Need, and Objectives for the proposed action and (2) minimizes impacts on the natural and human environment by using an existing transportation corridor where practicable and incorporating mitigation measures. Accordingly, Alternative 2 with the Refined CCNM Design Option, the Palmdale Station, and the Avenue M Maintenance Site and MOWF with a specific limit of between the intersection of 34th Street and L Street in Bakersfield in the north to Spruce Court in Palmdale in the south has been selected and approved for project implementation.

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

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10 REFERENCES

California Department of Transportation (Caltrans). 2003a. *Construction Site Best Management Practice (BMP) Field Manual and Troubleshooting Guide*.

———. 2003b. *Construction Site Best Management Practices (BMPs) Manual*.

California High-Speed Rail Authority (Authority). 2009a. *Technical Memorandum 2.10.4, Interim Seismic Design Criteria.* Sacramento, CA, Rev R1, June 8, 2009.

_____. 2009b. *Technical Memorandum 2.9.3, Fault Rupture Analysis and Mitigation.* Sacramento, CA. June 11, 2009. Revised June 3, 2011.

———. 2010a. *Bakersfield to Palmdale Preliminary Alternatives Analysis Report.* September 2010.

_____. 2010b. *Technical Memorandum 2.9.10, Geotechnical Analysis and Design Guidelines.* Sacramento, CA. June 11, 2010. Revised May 22, 2011.

———. 2012. *Bakersfield to Palmdale Section Supplemental Alternatives Analysis Report Volumes 1 and 2.* February 2012.

_____. 2014. *Technical Memorandum 2.10.6, Fault Rupture Analysis and Mitigation.* Sacramento, CA, Rev R1, May 13, 2014.

_____. 2016a. *Bakersfield to Palmdale Project Section Aquatic Resources Delineation Report.*

_____. 2016b. *Supplemental Alternatives Analysis Report, Bakersfield to Palmdale Section High-Speed Rail Project EIR/EIS.*

_____. 2017. *Fresno to Bakersfield Locally Generated Alternative Final Wetlands Report*.

_____. 2018. *Fresno to Bakersfield Section Draft Supplemental Environmental Impact Report/Environmental Impact Statement.*

_____. 2019a. *Design Options Screening Report for the César E. Chávez/Nuestra Señora Reina de la Paz National Historic Landmark.*

_____. 2019b. *Addendum to the Design Options Screening Report for the César E. Chávez/ Nuestra Señora Reina de la Paz National Historic Landmark*.

_____. 2019c. *Fresno to Bakersfield Section Final Supplemental Environmental Impact Statement.*

_____. 2020a. *2020 Business Plan: Delivering the Vision*.

_____. 2020b. *Bakersfield to Palmdale Project Section Section 106 Finding of Effect*.

———. n.d. *Technical Memorandum 500.08, Roadway Vehicle Hazard Assessment Methodology*.

California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). 2005. *Final Program EIR/EIS for the Proposed California HSR System*. Sacramento, CA, and Washington, D.C. August 2005.

Federal Highway Administration. 2012. *Section 4(f) Policy Paper.*

Federal Railroad Administration (FRA). 2012. *High-Speed Ground Transportation Noise and Vibration Impact Assessment.* September 2012. Washington, D.C.: U.S. Department of Transportation. https://www.fra.dot.gov/eLib/Details/L04090 (accessed July 14, 2016).

Thorne, Robert M. 1989. *Archaeological Assistance Program, Technical Brief Number 5: Intentional Site Burial, A Technique to Protect Against Natural or Mechanical Loss.* Department of the Interior, National Park Service. Washington, D.C.

U.S. Department of the Interior. 1995. *Secretary of the Interior's Standards for the Treatment of Historic Properties*. January 1995. https://www.nps.gov/tps/standards.htm

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APPENDIX A: GENERAL CONFORMITY DETERMINATION FOR AIR QUALITY, JULY 16, 2021

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APPENDIX B: U.S. FISH AND WILDLIFE SERVICE BIOLOGICAL OPINION, JUNE 16, 2021

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APPENDIX G: SECTION 4(F) CONCURRENCE LETTERS

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