

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

3.1 Introduction

This chapter addresses existing environmental conditions and the Fresno to Bakersfield Locally Generated Alternative's (F-B LGA) potential impacts on environmental resources, examining each resource in a separate subsection. The Federal Railroad Administration (FRA) has prepared this Draft Supplemental Environmental Impact Statement (EIS) for the F-B LGA of the *Fresno to Bakersfield Section California High-Speed Train¹ Final Project Environmental Impact Report/Environmental Impact Statement* (Fresno to Bakersfield Section Final EIR/EIS) under the National Environmental Policy Act (NEPA). The California High Speed Rail Authority (Authority) has prepared this Supplemental Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA). The Authority and FRA have prepared this Draft Supplemental EIR/EIS as a joint CEQA/NEPA document. The Authority and the FRA have used their best judgment in preparing this combined Draft Supplemental EIR/EIS to satisfy both NEPA and CEQA requirements. Please refer to the Fresno to Bakersfield Section Final EIR/EIS Chapter 3.1, Introduction, for more information on the NEPA and CEQA requirements.

In addition to CEQA and NEPA, the F-B LGA is subject to other federal and state environmental statutes and regulations, requiring analyses that must be incorporated into the joint Draft Supplemental EIR/EIS (as applicable, compliance analysis for federal and state environmental statutes and regulations is presented in Chapter 3 of this Supplemental EIR/EIS). In circumstances where more than one regulation or statute might apply, this joint Draft Supplemental EIR/EIS has been prepared to comply with the more stringent or inclusive set of requirements, whether federal or state.

The Authority and FRA have focused on avoiding and minimizing potential impacts of the F-B LGA through rigorous planning and thoughtful design, informed by the decisions they made at the conclusion of the Statewide Program EIR/EIS process, including the adopted mitigation strategies. The F-B LGA described in Chapter 2 and analyzed in Chapter 3 incorporates, as part of its description, means to avoid and minimize impacts through design, and compliance with applicable laws and regulations, and with established industry standards, as reflected in Appendix 2-D, Applicable Design Standards, of the Fresno to Bakersfield Section Final EIR/EIS. Chapter 3 of this Draft Supplemental EIR/EIS summarizes mitigation strategy measures for the system-wide HSR project and the Fresno to Bakersfield Section and, as applicable, identifies mitigation strategy measures specific to the F-B LGA, including the proposed station and additional facilities, such as the power conveyance and maintenance facilities. For new mitigation measures that are identified specific for the F-B LGA the adopted Mitigation Monitoring and Enforcement Plan would be amended to include new mitigation measures should the F-B LGA be selected as the Preferred Alternative from Shafter to Bakersfield.

3.1.1 Purpose of Chapter 3

The purpose of this chapter is to analyze the effect on the environment from implementation of the F-B LGA as described in Chapter 2, F-B LGA Project Description per CEQA and NEPA guidelines. The analyses address the impacts of the F-B LGA (including the F Street Station and the Maintenance of Infrastructure Facility). The analyses also evaluate impacts associated with related infrastructure changes required to accommodate the F-B LGA, such as roadway and interchange modifications, utility relocation, addition of power substations, and construction staging and laydown areas. This document also identifies appropriate mitigation measures,

¹ It should be noted that at the time of circulation of the Fresno to Bakersfield Section Final EIR/EIS, the Authority used the "California High-Speed Train" as the name of the overall Project rather than the "California High-Speed Rail" as is currently used. In instances where this Draft Supplemental EIR/EIS refers to the Fresno to Bakersfield Section Final EIR/EIS, the name "California High-Speed Train" will be used.

analyzes potential secondary impacts resulting from mitigation, and describes the feasibility of mitigation.

3.1.2 Organization of Chapter 3

Chapter 3 presents each environmental resource topic in its own section, as follows:

- Section 3.2, Transportation
- Section 3.3, Air Quality and Global Climate Change
- Section 3.4, Noise and Vibration
- Section 3.5, Electromagnetic Fields and Electromagnetic Interference
- Section 3.6, Public Utilities and Energy
- Section 3.7, Biological Resources and Wetlands
- Section 3.8, Hydrology and Water Resources
- Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources
- Section 3.10, Hazardous Materials and Waste
- Section 3.11, Safety and Security
- Section 3.12, Socioeconomics and Communities²
- Section 3.13, Station Planning, Land Use, and Development
- Section 3.14, Agricultural Lands
- Section 3.15, Parks, Recreation, and Open Space
- Section 3.16, Aesthetics and Visual Resources
- Section 3.17, Cultural Resources
- Section 3.18, Regional Growth
- Section 3.19, Cumulative Impacts

Many of the sections prepared for the Fresno to Bakersfield Section Final EIR/EIS were supported by technical reports containing additional detailed technical analyses and data. The Authority and FRA determined that several of the technical reports prepared for the Fresno to Bakersfield Section Final EIR/EIS contained sufficient detail and comparable regional analysis to use for the F-B LGA. Some technical reports were prepared in support of agency approvals, for example, the Supplemental Biological Assessment was prepared for the United States Fish and Wildlife Service's consultation. The F-B LGA technical reports containing technical analyses and data used to analyze the impacts of the F-B LGA include the following:

- Transportation Technical Report
- Air Quality Technical Report
- Noise and Vibration Technical Report
- Biological Resources and Wetlands Technical Reports
 - Wetlands Report (Preliminary Jurisdictional Delineation)
 - Biological Resources and Wetlands Report
 - Biological Assessment Report
- Hazardous Materials and Wastes Technical Report
- Supplemental Community Impact Assessment Technical Report
- Cultural Resources Technical Reports
 - Area of Potential Effects (APE) Maps
 - Architectural APE Map
 - Archaeological APE Map
- Archaeological Survey Report (ASR)
- Historic Architectural Survey Report (HASR)
- Traditional Cultural Properties Study
- Historic Property Survey Report

² It should be noted that the Fresno to Bakersfield Section Final EIR/EIS combined Socioeconomics, Communities, and Environmental Justice into Chapter 3, Section 3.12, but Environmental Justice is discussed in Chapter 5 of this Draft Supplemental EIR/EIS.

- Finding of Effect
- Archaeology and Built Environment Treatment Plans
- Supplemental ASR and Archaeological APE Map
- Supplemental HASR and Architectural APE Map
- Section 4(f) and Section 6(f) Methodology Memorandum

The technical reports that were not updated for the F-B LGA can be found at the California High-Speed Rail Authority website. The technical reports that were not updated include:

- Aesthetics and Visual Resources
- Geology, Soils, and Seismicity
- Paleontological Resources
- Geoarchaeological Investigation

The technical reports were not circulated with the Draft, the Revised Draft, or the Final EIR/EIS for the Fresno to Bakersfield Section EIR/EIS, and they will not be circulated with this Draft Supplemental EIR/EIS. Although the resource topic sections summarize technical material, models, and similar information, the detailed and highly technical data are available as appendices to this Draft Supplemental EIR/EIS. Analysts used many sources to prepare this document. Chapter 12, References/Sources Used in Document Preparation, lists these sources.

3.1.3 Content of Chapter 3

This section summarizes the type of information contained in the subsections for each resource and generally describes the approach to the impact analysis.

In all resource sections, information for the F-B LGA is presented from north to south. See Section 2.0 of the Fresno to Bakersfield Section Final EIR/EIS for a full discussion of the alternative alignments evaluated in the Fresno to Bakersfield Section Final EIR/EIS. In some instances, references used in the Fresno to Bakersfield Section Final EIR/EIS are used in evaluating the F-B LGA in this Draft Supplemental EIR/EIS. References used for this Draft Supplemental EIR/EIS are shown at the end of each resource section in Chapter 3.

For the purposes of this Draft Supplemental EIR/EIS, the project vicinities used to describe and illustrate the affected environment and impacts focus on the cities of Shafter and Bakersfield. The community of Oildale and unincorporated Kern County are included in the discussion, as appropriate. Each resource topic addressed in Chapter 3 includes the following sections:

3.1.3.1 Introduction

The introduction presents the reader with an overview of the resource topic and the critical issues and concerns considered in the analysis.

3.1.3.2 Regulatory Setting

The detailed regulatory setting discussion for each resource topic can be found in the appropriate section of the Fresno to Bakersfield Section Final EIR/EIS. In this Draft Supplemental EIR/EIS, each resource topic section identifies the relevant regulatory framework, and includes statutes of CEQA and NEPA, as well as other regulatory agency guidelines relevant to project approvals or decisions that are new or revised since the Authority certified the Fresno to Bakersfield Section Final EIR/EIS. This section also describes consistencies and/or conflicts between the F-B LGA and adopted regional or local plans or laws pertaining to the resource topic.

3.1.3.3 Methods for Evaluating Impacts

The methods used to collect data and evaluate potential impacts in this Draft Supplemental EIR/EIS are similar and consistent to the data collection and impact evaluation methods used in the Fresno to Bakersfield Section Final EIR/EIS. The regional study areas presented in the Fresno to Bakersfield Section Final EIR/EIS are used to evaluate resources in the Draft Supplemental EIR/EIS, as appropriate. Where applicable, data collected for the Fresno to Bakersfield Section Final EIR/EIS (including data from 2010) have been used to evaluate impacts associated with development of the F-B LGA. As described in more detail below, preparation of

this Draft Supplemental EIR/EIS also includes current (2015) data to evaluate impacts of the F-B LGA. Comparable 2015 data is also used, as needed, for the May 2014 Project, as reflected in the individual resource sections and in Chapter 8 and Appendix 8-A of this Draft Supplemental EIR/EIS, in order to facilitate an apples-to-apples comparison with the F-B LGA.³

For the analysis of each resource area, this Supplemental EIR/EIS uses either data collected for the Fresno to Bakersfield Section Final EIR/EIS (including data from 2010) or current (2015) data to evaluate impacts of the F-B LGA relative to the May 2014 Project. For each analysis, the same data set is used to evaluate the May 2014 Project and F-B LGA to allow for direct comparison of the two alternatives. Where applicable, the data sets that were used for the Fresno to Bakersfield Section Final EIR/EIS are used for the evaluation of the F-B LGA to allow for direct comparison between the two alternatives without requiring reevaluation of the May 2014 Project. Examples of this include geologic and paleontological resources, where the initial data collected for the Fresno to Bakersfield Section Final EIR/EIS were still valid for performing analysis of the F-B LGA because the existing setting had not changed substantially. In cases where the existing setting had changed substantially since publication of the Fresno to Bakersfield Section Final EIR/EIS, this Supplemental EIR/EIS uses updated data sets to evaluate the F-B LGA. In these cases, the May 2014 Project was reevaluated based on the updated data set in order to allow for direct comparison of the two alternatives. Specifically, data sets for traffic, socioeconomics and communities, and agricultural lands have been updated for the May 2014 Project analyses to account for any changes that have occurred since circulation of the Fresno to Bakersfield Section Final EIR/EIS and to reflect the most current conditions in the project area in order to provide an accurate and equivalent comparison with the F-B LGA. For example, the baseline and future (year 2035) traffic conditions for the F-B LGA are analyzed in this Supplemental EIR/EIS using new baseline data (year 2015) and the updated Kern Council of Governments Model Improvement Program travel demand model. As a result, the traffic analyses for the No Project Alternative and the May 2014 Project have been updated with the same baseline data to allow for comparison of all three alternatives under the same baseline and future conditions. Analysis of the roadways and intersections for the F-B LGA, including those in the vicinity of the proposed F Street Station, also required current traffic counts. Accordingly, updated traffic counts were taken for F-B LGA study area roadways and intersections, as well as for the May 2014 Project's Truxtun Avenue Station, to accurately reflect roadway modifications not yet developed or planned when the Fresno to Bakersfield Section Final EIR/EIS was approved.

In other instances, the data set included in the Fresno to Bakersfield Section Final EIR/EIS was provided for the entire segment from Fresno to Bakersfield and discrete data sets for the subsection comprised of the May 2014 Project were not provided. In these cases, updated data sets have been used to evaluate both the F-B LGA and May 2014 Project. For example, the socioeconomic analysis of the F-B LGA required a count of displaced residential units, businesses, community facilities, and agricultural lands. Because the Fresno to Bakersfield Section Final EIR/EIS did not provide this information specifically for the May 2014 Project, the number of displacements discussed in the Final EIR/EIS were not comparable to those evaluated

What is the Project Study Area?

For this Draft Supplemental EIR/EIS, the study area extends southeast from just north of Poplar Avenue in the city of Shafter, continues east through the agricultural lands within the city of Shafter limits, continues southeast through northern Bakersfield, and then continues east to Oswell Street in the city of Bakersfield.



³ The May 2014 Project consists of a portion of the BNSF Alternative [from Poplar Avenue to Hageman Road] and the Bakersfield Hybrid Alternative [from Hageman Road to Oswell Street]. For additional description of the May 2014 Project, refer to Sections 2.2 and 8.2 of this Draft Supplemental EIR/EIS.

for the F-B LGA. Rather than attempt to extract the 2010 values from the Final EIR/EIS for just the May 2014 Project, instead the analysis in this Draft Supplemental EIR/EIS includes a count of displacements for the F-B LGA and May 2014 Project based on the most recent land use information.

This section describes the methods used to collect data and evaluate potential impacts and includes the following:

- **Study Area for Analysis.** The resource study area is the area in which all environmental investigations specific to each Supplemental EIR/EIS resource topic are conducted in order to determine the resource characteristics and potential impacts of the F-B LGA. A discussion of the differences between the F-B LGA and those identified in the Fresno to Bakersfield Section Final EIR/EIS are provided in Technical Appendix 8-A. Furthermore, the resource study areas applied in the comparison of the F-B LGA and the May 2014 Project are the same and are discussed further in Technical Appendix 8-A. The resource study area contains all of these components:
 - All facilities or features within the project footprint, particularly the proposed F Street Station, maintenance facilities, and consequential actions that affect the environmental resource
 - Areas necessary to determine characteristics and context for a specific resource area within a project segment
 - Areas specific to each resource to evaluate the intensity and determine the significance of direct and indirect impacts, beneficial and adverse impacts of HSR improvements and activities
 - Areas needed to implement, operate, or maintain mitigation measures
 - Off-site mitigation measures and mitigation sites (including relocations)
 - Areas to identify and analyze potential secondary impacts from implementing mitigation

The project footprint is a more focused area that includes all project components and right-of-way needed to construct and operate the F-B LGA. The project footprint components include the proposed HSR right-of-way and associated facilities, such as traction power supply stations and switching and paralleling stations, as well as the shifts in roadway rights-of-way associated with those facilities—including overcrossings and interchanges—that would be modified or shifted to accommodate the HSR project, as described in Chapter 2 of this Draft Supplemental EIR/EIS, F-B LGA Project Description. Figure 3-1 shows an example of shifts in the roadway and other infrastructure that would be included in the project footprint. Note that the figure is provided as an example and does not show an actual location along the F-B LGA.

Development of the F-B LGA would require acquisition of property necessary for project operation. When the remnant portion of an acquired parcel beyond the right-of-way is too small to sustain current use without other modifications, the remnant portion would also be acquired. These remnant parcels would not be used for construction and would be sold after project construction.

The Authority will not acquire temporary construction staging areas through the right-of-way acquisition process. It will be the responsibility of the Design-Build Contractor to negotiate with the property owners to secure access and temporary use of their property for staging or lay-down areas. To provide the Design-Build Contractor with sufficient potential staging areas, this Draft Supplemental EIR/EIS, consistent with the Fresno to Bakersfield Section Final EIR/EIS, includes an evaluation of the environmental impacts on various vacant parcels that are located adjacent to or near parts of the project that would require construction staging and lay-down areas such as bridges, and elevated structures, etc. An evaluation of impacts from potential construction areas would result in a conservative analysis because this Draft Supplemental EIR/EIS uses parcel boundaries and not the actual acreage that would be necessary for staging or storage of materials to calculate impacts.

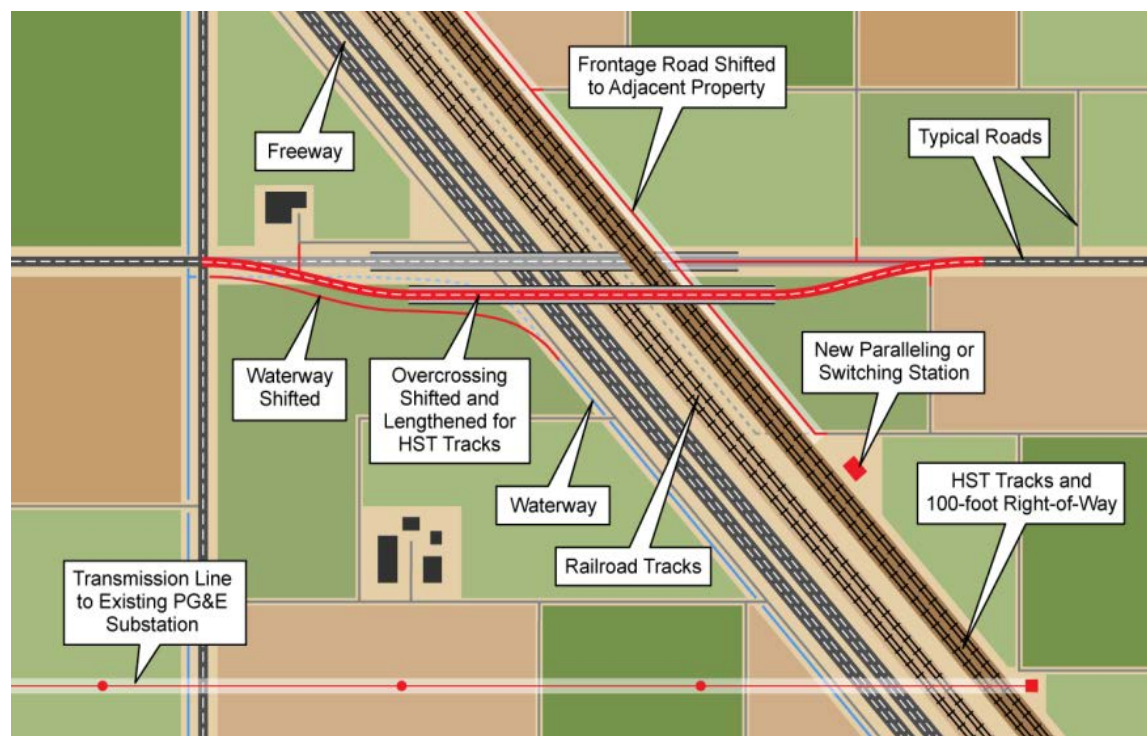


Figure 3-1 Shifts of Roadways and Other Infrastructure

Methods for Evaluating Impacts under NEPA

Regulations implementing NEPA require the analysis of potential impacts in terms of the project's context, intensity, and duration. FRA, Federal Highway Administration, and Federal Transit Administration guidelines are used when applicable. In other cases, qualitative or quantitative analysis describe potential impacts in terms of context, intensity, and duration. The nature of this analysis depends on the resource analyzed.

In the Fresno to Bakersfield Section Final EIR/EIS, analysts applied specified thresholds for each resource topic to assess whether the intensity of each impact is negligible, moderate, or substantial for the Build Alternatives, and provided a conclusion of whether the impact was "significant". Since the Fresno to Bakersfield Section Final EIR/EIS does not evaluate the May 2014 Project as a discrete subsection of the Fresno to Bakersfield Project (as it did for example for the Allensworth Bypass), it does not provide conclusions using intensity thresholds for the May 2014 Project. Therefore, intensity thresholds are not used for the F-B LGA. Instead, the evaluation of impacts under NEPA in this Draft Supplemental EIR/EIS focuses on a comprehensive discussion of the project's potential impacts in terms of context, intensity, and duration and provides agency decision makers and the public with an apples-to-apples comparison between the May 2014 Project and the F-B LGA.

Methods for Determining Significance under CEQA

For each resource topic, analysts use criteria based predominantly on the CEQA Guidelines to determine where and when mitigation measures are warranted to reduce the magnitude and severity of adverse impacts. These criteria generally describe whether impacts would be considered significant or whether a substantial, or potentially substantial, adverse change would occur in any of the physical conditions within the area affected by the project. Where possible, significance criteria use state or federal standards. For example, air quality significance criteria follow the state and federal ambient air quality standards; noise significance criteria use thresholds defined by FRA. In other cases, for example in the visual resources analysis, the

significance criteria rely on guidelines, policies, and assessment methodologies such as those used by FRA, as well as standards of professional practice.

3.1.3.4 Affected Environment

The affected environment discussion summarizes the information that provides the basis for analysis of potential impacts on each environmental resource. Information in the affected environment discussion is presented for the F-B LGA of the Fresno to Bakersfield Section, including a discussion of the regional context. The affected environment discussions describe the existing conditions available in the most recent publicly available data, or in data collected during fieldwork in 2015 and 2016. The Draft Supplemental EIR/EIS discusses the F-B LGA affected environment as well as a summary of the affected environment associated with the May 2014 Project. In some chapters, 2035 conditions adopted by regional or local planning agencies are discussed where relevant to particular resources, such as transportation and air quality.

3.1.3.5 Environmental Consequences

The environmental consequences discussion summarizes the analysis for the May 2014 Project and describes the potential environmental impacts of the F-B LGA. Evaluations of direct and indirect project impacts reflect integration of project features that avoid or minimize impacts as a part of design or as consistent with mitigation adopted based on the Mitigation Monitoring and Enforcement Plan (Authority and FRA 2014). The explanations of the impact include the context, intensity, and duration of the impact, other impact characteristics as appropriate (e.g., direct, indirect, adverse, or beneficial), the consideration of mitigation measures as required by NEPA.

The Fresno to Bakersfield Section Supplemental EIR/EIS also evaluates potential effects to the Buena Vista Lake ornate shrew for the Fresno to Bakersfield Section from East American Avenue in Fresno County to Oswell Street in the City of Bakersfield. Since the release of the Fresno to Bakersfield Section Final EIR/EIS, the United States Fish and Wildlife Service issued an amended Biological Opinion (USFWS 2017a) for the Fresno to Bakersfield Section from East American Avenue in Fresno County (the northern terminus of Construction Package 2/3) to Poplar Avenue in Kern County (the southern terminus for Construction Package 4). Pursuant to CEQA Guidelines Section 15163, Section 3.7, Biological Resources and Wetlands of this Draft Supplemental EIR/EIS evaluates the expansion of the range of species and considers potential effects to the Buena Vista Lake ornate shrew.

3.1.3.6 Mitigation Measures and Avoidance and Minimization Measures

Mitigation measures adopted by the FRA as part of the Fresno to Bakersfield Section Final EIR/EIS June 2014 Mitigation Monitoring and Enforcement Plan, and by the Authority as part of the May 2014 Mitigation Monitoring and Reporting Plan and subsequent amendments, are discussed, as applicable, in each resource section. If resource topics identify new significant adverse impacts for the F-B LGA, the mitigation measures section identifies possible measures to avoid, minimize, rectify, reduce, eliminate, or compensate for these effects. The section also summarizes potential impacts associated with implementing mitigation measures. If no mitigation measures are required, this section is not included. The abbreviations and numerical values of the mitigation measures identified in the resource sections follow the structure of the mitigation measures adopted as part of the June 2014 Mitigation Monitoring and Enforcement Plan.

3.1.3.7 Cumulative Impacts

To understand the environmental implications of a proposed project, CEQA and NEPA require that effects be examined in conjunction with other past, present, and reasonably foreseeable projects. Section 3.19, Cumulative Impacts, discusses cumulative impacts for each resource and determines whether the proposed project's incremental contribution to the significant cumulative impacts identified for each resource area is cumulatively considerable under CEQA, and whether its contribution would be significant under NEPA.

3.1.4 Legal Authority to Implement Off-site Mitigation

Chapter 3 analyzes the HSR project's potential physical environmental effects on various resource areas. If a potential significant effect is found, mitigation measures are proposed. Most mitigation measures identified are within the Authority's jurisdiction and control. Some of the proposed mitigation measures, however, would occur on property the Authority would not own as part of its right-of-way acquisitions. These mitigation requirements are sometimes referred to as "off-site" mitigation. Mitigation that would occur on property not owned by the Authority would require working with the property owners or with the jurisdiction that regulates the property in order to accomplish that mitigation.

The Authority and the FRA have not identified any off-site mitigation measures that are infeasible or unlikely to occur. The off-site mitigation measures recommended in this Draft Supplemental EIR/EIS are physically feasible. The Authority will continue the current practice of developing memoranda of understanding and funding agreements with local governments to facilitate implementation of off-site mitigation measures on property owned at the local agency level.