

## 3 Affected Environment, Environmental Consequences, and Mitigation Measures

### 3.1 Introduction

Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, addresses existing environmental conditions relevant to the Central Valley Wye alternatives and the potential impacts of the Central Valley Wye alternatives, examining each environmental resource topic in a separate section. The project footprints of the Central Valley Wye alternatives are located in portions of Merced and Madera Counties. Network upgrades would also be necessary in Fresno and Stanislaus Counties to support the electrical load requirements of the high-speed rail (HSR) system. Accordingly, as appropriate, all four counties are included in the analyses in Chapter 3.

This introduction lists the environmental resource topics covered in this chapter, describes the key changes in the analysis since publication of the *Merced to Fresno Section California High-Speed Train Final Project Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Merced to Fresno Final EIR/EIS) (California High-Speed Rail Authority [Authority] and Federal Railroad Administration [FRA] 2012), and describes the organization and content of each section.

Since publication of the Draft Supplemental EIR/EIS, Section 3.1.3, Changes between the Draft Supplemental EIR/EIS and this Final Supplemental EIR/EIS, has been expanded to include a summary of changes between the Draft and this Final Supplemental EIR/EIS.

#### 3.1.1 Chapter 3 Environmental Resource Topics

Chapter 3 presents the environmental resource topics 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 Wastes\*
- Section 3.11, Safety and Security
- Section 3.12, Socioeconomics and Communities\*
- Section 3.13, Land Use and Development
- Section 3.14, Agricultural Farmland
- 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

The asterisks (\*) in the list of Chapter 3 sections indicate topics that have a separate technical report providing more detailed technical analyses and data than that included in this Chapter 3.<sup>1</sup> In addition to the technical reports, Volume II, Technical Appendices, provides detailed, resource-specific background information, data, and other evidence supporting some of the analysis and conclusions in this chapter. These appendices include a comprehensive inventory of regional and local policies in Appendix 3.1-A, Regional and Local Plans and Laws Inventory; detailed mapping of the parcels intersected by each of the Central Valley Wye alternatives in Appendix 3.1-B, Parcels Within the Central Valley Wye Alternatives Project Footprints; Appendix 3.1-C, Comparison of Mitigation Measures and Impacts: Central Valley Wye and Merced to Fresno Final EIR/EIS; and Appendix 3.1-D, Central Valley Wye Technical Report Memorandum of Updates. The technical reports and Volume II, Technical Appendices, prepared for this Final Supplemental EIR/EIS are available via the California High-Speed Rail Authority's (Authority) website: [https://www.hsr.ca.gov/programs/environmental/eis\\_eir/draft\\_supplemental\\_merced\\_fresno.aspx](https://www.hsr.ca.gov/programs/environmental/eis_eir/draft_supplemental_merced_fresno.aspx).

### 3.1.2 Changes in Analysis between the Merced to Fresno Final EIR/EIS and Central Valley Wye Draft Supplemental EIR/EIS

To improve readability, the structure of the impact analysis in the *Merced to Fresno Section: Central Valley Wye Draft Supplemental EIR/EIS* (Draft Supplemental EIR/EIS) differs from that used in the Merced to Fresno Final EIR/EIS with respect to the following items.

- **Order in which impacts are presented.** Both the Merced to Fresno Final EIR/EIS and the Draft Supplemental EIR/EIS present impacts that could occur during construction and operations. The impact titles and numbers have changed. Some impacts previously listed under construction are now listed under operations because, while the Merced to Fresno Final EIR/EIS asked the underlying question “how long does the impact last?” the Draft Supplemental EIR/EIS asked the question “when does the impact occur?” This means, for example, that an impact that lasts a long time but occurs during construction, such as removing riparian trees to clear the construction site, was moved from the operations analysis in the Merced to Fresno Final EIR/EIS to the construction analysis in the Draft Supplemental EIR/EIS. This organizational shift does not change the overall analysis of impacts in terms of context, duration, or intensity but rather improves the way in which these impacts are organized and presented to the reader.
- **Numbering of impacts.** The Merced to Fresno Final EIR/EIS included impact numbering only for impacts determined to be significant under the California Environmental Quality Act (CEQA) and that merited discussion of mitigation measures for both the National Environmental Policy Act (NEPA) and CEQA. The Draft Supplemental EIR/EIS numbered all impacts to improve clarity and readability.
- **Electrical interconnections and network upgrades.** The Merced to Fresno Final EIR/EIS described and analyzed electrical interconnection facilities associated with the HSR. While network upgrades were anticipated, the locations of such upgrades were unknown. A 2016 Technical Study Report completed by Pacific Gas and Electric (PG&E) determined what network upgrades would be required to existing infrastructure to meet the projected power demands of the HSR system within the 345-mile portion of the train corridor located within

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<sup>1</sup> All Merced to Fresno: Central Valley Wye Technical Reports were finalized in 2016; however, the content of the Draft Supplemental EIR/EIS continued to evolve to incorporate the most current data and other sources of information relevant to the environmental analyses, some of which were not available at the time that the technical reports were prepared. As a result, some of the information presented in the Draft Supplemental EIR/EIS was more current than the information presented in the technical reports. To provide clarity on any information and data differences between the Draft Supplemental EIR/EIS and the technical reports and the location of the most current information, a Central Valley Wye Technical Report Memorandum of Updates had been produced and included as Appendix 3.1-D, Central Valley Wye Technical Report Memorandum of Updates. Further changes between Draft and Final are not recorded in that memorandum.

PG&E's service territory (PG&E 2016). Appendix 2-D, Electrical Interconnections and Network Upgrades, contains a detailed project description of specific electrical interconnections and network upgrades (EINU) associated with the Central Valley Wye alternatives, as well as the related air quality modeling, noise modeling, and a biological resources survey memo. Archeological and Historical Architectural Survey Reports Addendums have also been prepared and appended to the corresponding technical reports. With the exceptions noted previously, the existing conditions and impact analysis specific to the EINU are contained entirely within the resources sections of the Draft Supplemental EIR/EIS.

- **Impact avoidance and minimization features (IAMF).** Project features identified in the Merced to Fresno Final EIR/EIS that avoid or minimize impacts and are applicable to the Central Valley Wye alternatives are renamed and included in the Draft Supplemental EIR/EIS as IAMFs. IAMFs would be incorporated by the Authority as part of the selected Central Valley Wye alternative's design and would become standard conditions of future construction contracts. In addition, in some cases, mitigation measures identified in the Merced to Fresno Final EIR/EIS are included in the Draft Supplemental EIR/EIS as IAMFs. For example, the Merced to Fresno Final EIR/EIS included mitigation measure Bio-MM#1, Designate Project Biologist(s), Contractor's Biologist(s), and Project Biological Monitor(s). The Authority has since made this a standard program-wide requirement applicable to all HSR project sections, and therefore BIO-MM#1 is now included in the Draft Supplemental EIR/EIS, as well as other HSR project sections, as BIO-IAMF#1, Project Biologist.
- **Mitigation measures.** The Draft Supplemental EIR/EIS included mitigation measures for environmental impacts that could result from construction and operation of the Central Valley Wye alternatives. The mitigation measures in the Draft Supplemental EIR/EIS were largely included in the Merced to Fresno Final EIR/EIS; however, in some cases the mitigation measures in that document are reworded or combined for clarification. For example, the Merced to Fresno Final EIR/EIS included mitigation measure Bio-MM#24, Erect Amphibian Exclusion Fencing, which requires exclusion fencing for the protection of California tiger salamander as well as other amphibious species. The Draft Supplemental EIR/EIS includes BIO-MM#12, California Tiger Salamander Exclusion Fencing, which provides the same level of protection for California tiger salamander, but is worded slightly differently from mitigation measure Bio-MM#24 in the Merced to Fresno Final EIR/EIS to better address specific requirements for this species.

Protection for other amphibious species in the Draft Supplemental EIR/EIS was provided in IAMFs and mitigation measures. In some cases, there were also new mitigation measures in the Draft Supplemental EIR/EIS that were not included in the Merced to Fresno Final EIR/EIS.
- **Determination of Significance for NEPA Impacts.** The Merced to Fresno Final EIR/EIS included determinations of whether NEPA impacts were significant, based on considerations of whether the impacts were substantial in light of their context and intensity. The Draft Supplemental EIR/EIS did not do so, as explained in 3.1.5.4, Methods for Evaluating Impacts.

### 3.1.3 Changes between the Draft Supplemental EIR/EIS and this Final Supplemental EIR/EIS

Since publication of the Draft Supplemental EIR/EIS, several changes have been made. This Final Supplemental EIR/EIS is a "full" final document that includes the text of the Draft Supplemental EIR/EIS with text and figure revisions reflecting one or more of the global issues detailed in Section 3.1.3.1, Global Changes in the Final Supplemental EIR/EIS.

The Authority considered whether all of the revisions described below would require further supplementation under NEPA or further recirculation under CEQA, and determined that neither were required.

### 3.1.3.1 Global Changes in the Final Supplemental EIR/EIS<sup>2</sup>

As warranted, Volumes I and II have been revised to reflect one or more of the following global issues.

- NEPA Assignment Changes to Electrical Interconnections and Network Upgrades
- Additional background information, impacts, and mitigation measures concerning the Crotch bumble bee, as was reflected in the *Revised Draft Supplemental Environmental Impact Report/Second Draft Supplemental Environmental Impact Statement, Biological Resources Analysis* (Revised/Second Draft Supplemental EIR/EIS, Biological Resources Analysis).
- Updates to IAMFs and mitigation measures consistent with program-wide updates

Throughout the document, vertical bars in the left- and right-hand margins indicate areas where substantive edits<sup>3</sup> to text, tables, or graphics were made between the Draft Supplemental EIR/EIS and this Final Supplemental EIR/EIS.

#### NEPA Assignment

Pursuant to 23 United States Code (U.S.C.) Section 327, the FRA and the State of California executed a NEPA Assignment Memorandum of Understanding (MOU), dated July 23, 2019 (FRA and State of California 2019). Pursuant to this MOU, the State of California, acting through California State Transportation Agency and the Authority, assumed FRA's responsibilities under NEPA and other federal environmental laws, as assigned by FRA under the MOU, for projects necessary for the design, construction, and operation of the California HSR System and for other passenger rail projects that directly connect to the HSR system, including documents that were not final for distribution as of the publication date of the memorandum.

Accordingly, the Authority is now the Lead Agency for complying with NEPA and other federal environmental laws for the Central Valley Wye and will now be identified as such in this and other environmental documents.

#### Changes to Electrical Interconnections/Network Upgrades

Since publication of the Draft Supplemental EIR/EIS, design studies associated with the required EINU for the Preferred Alternative at Site 6 and Site 7 have progressed, resulting in modified interconnection and telecommunications facilities.

At Site 6, the previously analyzed traction power substation (TPSS) site is no longer being considered. A new site for the TPSS has been proposed, along with an associated Site 6—EI Nido 115-kilovolt Tie-Line between the TPSS at Site 6 and the Site 6—EI Nido Substation.

In addition, telecommunications infrastructure has been defined and is needed between the following facilities:

- TPSS 6 and the Site 6—EI Nido Substation
- TPSS Site 7 and the Site 7—Wilson Substation

Fiber optical groundwire would be co-located along the tie-lines. Fiber optic cables would also be underground along the tie-line alignments to provide telecommunications between these facilities. These and other EINU changes concerning the Preferred Alternative are further detailed in

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<sup>2</sup> As noted in Section 2.3, Updated Travel Demand and Ridership Forecasts, the Draft Supplemental EIR/EIS used ridership assumptions from the Authority's 2016 Business Plan. These forecasts were updated from the Merced to Fresno Final EIR/EIS. This Final Supplemental EIR/EIS for the Central Valley Wye retains the 2016 Business Plan ridership forecasts, as further described at Section 2.3, as these forecasts provide a conservative and reasonable basis for determining environmental impacts.

<sup>3</sup> Changing references to the "Draft Supplemental EIR/EIS" to the "Final Supplemental EIR/EIS" is considered a substantive change.

Section 2.2.3.4, SR 152 (North) to Road 11 Wye Alternative (Proposed Project/Preferred Alternative). Changes in resource impacts as a result of these refinements, are primarily indicated by table notes in the resource discussions in Chapter 3, as well as in this section.

Other than the EINU-related revisions to Sites 6 and 7, there are no changes to the design of the Wye alignment alternatives, therefore no changes to the alignment footprint as identified in Appendix 3.1-B or in the preliminary designs included in Volume III. However, since publication of the Draft Supplemental EIR/EIS, the following appendices have been updated to reflect these EINU changes:

- Appendix 2-D: Electrical Interconnections and Network Upgrades
  - Appendix 2-D.1: Detailed Project Description<sup>4</sup>
  - Appendix 2-D.2: Air Quality Modeling<sup>5</sup>
  - Appendix 2-D.4.B: Amendment to Biological Resources Survey Summary Site 6 & 7<sup>6</sup>

Changes in resource impacts as a result of these refinements are primarily indicated by table notes in the resource discussions in Chapter 3. As noted in Appendix 2-D.1, the work at Sites 6 and 7 is projected to occur immediately following the anticipated 5-year period of construction for the Preferred Alternative. The analysis of construction related air quality impacts was conducted based on this assumption. Refer to Appendix 2-D.2, Air Quality Modeling, as well as Table 3.3-16 and Table 3.3-17 in Section 3.3.

### **Crotch Bumble Bee and Revised/Second Draft Supplemental EIR/EIS, Biological Resources Analysis**

Following the Authority's publication of the Draft Supplemental EIR/EIS for CEQA purposes in May 2019 and subsequent publication of the Draft Supplemental EIR/EIS for NEPA purposes in September 2019, the Authority learned that the California Fish and Wildlife Commission had accepted for consideration a petition to list as endangered under the California Endangered Species Act a bumble bee species that may be present in the relevant resource study area (RSA) for the Central Valley Wye alternatives.

The California Fish and Game Commission provided notice on June 18, 2019 that it had decided to accept for consideration a petition to list four bumble bee species, and that the four species are now candidate species for listing under the California Endangered Species Act as defined by Section 2068 of the Fish and Game Code. Only one such species, the Crotch bumble bee (*Bombus crotchii*), is assumed to be present in the RSA for the Central Valley Wye alternatives based on historic records as well as the presence of suitable habitat for the species.

Both CEQA and NEPA provide guidance on the recirculation and supplementation of published environmental documents. Pursuant to pertinent requirements of both laws,<sup>7</sup> the Authority, as lead CEQA and NEPA agency for the Merced to Fresno Section: Central Valley Wye, issued the Revised/Second Draft Supplemental EIR/EIS, Biological Resources Analysis, limited to the portions of the Draft Supplemental EIR/EIS that required revision based on the new information about the Crotch bumble bee candidate species. Only Section 3.7, Biological Resources and Wetlands and a related appendix (Appendix 3.7-C.2, Biological Resources and Wetlands Special-Status Wildlife) required revisions; the document was comprised of these elements along with an unaltered excerpt from the Draft Supplemental EIR/EIS, Section 3.19.6.6, regarding cumulative impacts. Section 3.7 was revised to incorporate new background information, methodology,

<sup>4</sup> Revised since publication of the Draft Supplemental EIR/EIS to show changes at Sites 6 and 7.

<sup>5</sup> Appended to since publication of the Draft Supplemental EIR/EIS to included analysis of changes at Sites 6 and 7.

<sup>6</sup> Appendix 2-D.4.B has been added to the Final Supplemental EIR/EIS to account for changes to the EINU biological resources survey included at Appendix 2-D.4 with the Draft Supplemental EIR/EIS. Appendix 2-D.4 has been renamed as Appendix 2-D.4.A in this Final Supplemental EIR/EIS but has no substantive edits since publication of the Draft Supplemental EIR/EIS.

<sup>7</sup> CEQA Guidelines Section 15088.5(c) and 40 Code of Federal Regulations 1502.9(c)(1)(ii).

impact analysis, and mitigation measures concerning this species. All of the above, including the revised Appendix 3.7-C.2, are incorporated into this Final Supplemental EIR/EIS.

### Revisions to Impact Avoidance and Mitigation Features and/or Mitigation Measures

Since printing and publication of the Draft Supplemental EIR/EIS, the Authority has revised its IAMFs and mitigation measures. The revisions generally added detail to IAMFs and mitigation measures, and no impact conclusion from the Draft Supplemental EIR/EIS required alteration as a result. Pertinent chapters, sections, and appendices were revised to reflect these changes. Refer to Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features, for a complete list of the Authority's IAMFs.

These revisions are in addition to further, topic-specific mitigation changes described below regarding Section 3.7 and Chapter 5, Environmental Justice.

#### 3.1.4 Revisions in Response to Comments on the Draft Supplemental EIR/EIS or to Changes in Regulations/Case Law

In addition to the revisions associated with the global issues noted above, Volumes I and II of this Final Supplemental EIR/EIS reflect other text and/or figure revisions. These revisions are related to responses to comments received on the draft documents, changes to regulations/case law, and other nonsubstantive text edits (e.g., grammar, punctuation, headers and footers).

Within Volume I, all chapters and sections had such updates, except Chapter 13, Glossary. As noted above, several appendices were revised in association with the global issues detailed in Section 3.1.3.1. In addition, several other appendices within Volume II were updated as described below. For all other appendices, no substantive changes were necessary.

Vertical bars in the left- and right-hand margins indicate areas where substantive edits to text, tables, or graphics were made between the Draft Supplemental EIR/EIS and this Final Supplemental EIR/EIS.

No changes were made to Volume III, Alignment Plans.

#### *Volume I*

- **Chapter 1, Introduction and Purpose, Need, and Objectives.** A footnote has been added to the project objectives to acknowledge a change in anticipated timing of construction of the statewide HSR system compared to the objectives in the Merced to Fresno Final EIR/EIS (Authority and FRA 2012).
- **Chapter 2, Alternatives.** Text has been added to Section 2.3, Updated Travel Demand and Ridership Forecasts, and Section 2.4, Updated Operations and Service Plan regarding updates to the Authority's Business Plan since printing and publication of the Draft Supplemental EIR/EIS. Text has also been added to Section 2.4.2, Maintenance Activities, reflecting program updates to the Authority's maintenance of its properties. Table 2-2 has been updated in response to a comment on the Draft Supplemental EIR/EIS (refer to Volume IV, submission 247, comment 214).
- **Section 3.2, Transportation.** Impact conclusions concerning traffic flow which had been previously based on a "level of service" analysis were updated to add conclusions based on the project's potential to affect vehicles miles traveled. This text was added to reflect the requirements of Senate Bill 743, whose requirements were incorporated into December 2018 updates to the CEQA Guidelines. Revisions also include additional information about the Freeway Agreement between the California Department of Transportation (Caltrans) and Madera County regarding the ultimate disposition of State Route (SR) 152 as well as clarifications regarding considerations of impacts on school bus routes.
- **Section 3.3, Air Quality and Global Climate Change.** Explanatory text has been added in connection with the California Supreme Court's December 2018 decision regarding *Sierra Club v. County of Fresno* (also known as the "Friant Ranch decision"), providing greater clarity on how identified air pollutant emissions connect to human health impacts. In response

- to comments on the Draft Supplemental EIR/EIS, AQ-MM#4 was revised to better incorporate terms of an agreement between the Authority and the San Joaquin Valley Air Pollution Control District. The text has also been revised to reflect FRA's 2020 General Conformity determination and make regulatory updates.
- **Section 3.6, Public Utilities and Energy.** Text added in response to comments regarding groundwater wells and septic systems; regulatory updates are also included.
  - **Section 3.7, Biological Resources and Wetlands.** In response to comments from the California Department of Fish and Wildlife, revisions in this section are primarily focused on mitigation measures, including the conversion of several measures previously identified as IAMFs to mitigation measures. Also, see above concerning the Revised/Second Draft Supplemental EIR/EIS, Biological Resources Analysis.
  - **Section 3.12, Socioeconomics and Communities.** Text added clarifying considerations of impacts on school bus routes. In addition, a correction has been made in Table 3.12-10, Estimated Number of Residential Displacements by Alternative, for the SR 152 (North) to Road 11 Wye Alternative in Unincorporated Madera County. The correction reduces the estimated number of displaced residents.
  - **Section 3.14, Agricultural Farmland.** Text added clarifying groundwater wells as an element of agricultural infrastructure.
  - **Section 3.16, Aesthetics and Visual Resources.** Revisions incorporated including addition of a key viewpoint, further acknowledgement the rural aesthetic, and clarifications regarding how AVR-MM#6 addresses potential impacts related to graffiti and deterioration.
  - **Section 3.17, Cultural Resources.** Text added to include a summary of the Native American Grave Protection and Repatriation Act as well as Section 106 Findings for three impact conclusions (Impacts CUL#4, CUL#5, and CUL#6).
  - **Chapter 4, Section 4(f) and Section 6(f) Resources.** This chapter has been updated to identify the alternative with the least overall harm and finalize the Authority's determinations under Section 4(f) of the US Department of Transportation Act of 1966 (49 U.S.C. § 303).
  - **Chapter 5, Environmental Justice.** As a result of the Authority's ongoing consultation with the Fairmead community and Madera County following the May 2019 publication of the Draft Supplemental EIR/EIS for CEQA purposes, the Authority is revising a mitigation measure (EJ-MM#1) with equally effective terms. In the Draft Supplemental EIR/EIS, EJ-MM#1 had outlined a process by which the Authority would purchase Fairmead Elementary School (assuming the property became available for sale) and convert the school into a community center for Fairmead.  
  
In this Final Supplemental EIR/EIS, EJ-MM#1 has been revised to reflect that the Authority will instead provide funding to Madera County towards the purchase of a site and construction of a community center to serve Fairmead. EJ-MM#1 includes a number of performance standards to avoid/minimize any potential for secondary environmental effects.
  - **Chapter 6, Project Costs and Operations.** This chapter has been revised with additional discussion of project cost considerations.
  - **Chapter 7, Other CEQA/NEPA Considerations.** This chapter was revised to include clarifying text on NEPA regulations.
  - **Chapter 8, Preferred Alternative.** Revisions in this chapter include updates regarding determination of the Preferred Alternative (SR 152 (North) to Road 11 Wye) as the least environmentally damaging practicable alternative, including agency concurrence on this determination as well as updates to public outreach and public comment following publication of the Draft Supplemental EIR/EIS.

- **Chapter 9, Public and Agency Involvement.** Text was added to include discussion of the circulation of the Draft Supplemental EIR/EIS and the Revised/Second Draft Supplemental EIR/EIS, Biological Resources Analysis, as well as additional meetings conducted by the Authority since printing and publication of the Draft Supplemental EIR/EIS.
- **Chapter 10, Final Supplemental EIR/EIS Distribution.** Text was updated to reflect changes in elected officials and provide updated information about the Final Supplemental EIR/EIS distribution.
- **Chapter 11, List of Preparers.** This list has been updated to reflect changes since printing and publication of the Draft Supplemental EIR/EIS.
- **Chapter 12, References.** References were updated to include additional resources consulted since printing and publication of the Draft Supplemental EIR/EIS.
- **Chapter 14, Index.** The Index was initially prepared for the Draft Supplemental EIR/EIS and has been revised to reflect this Final Supplemental EIR/EIS.
- **Chapter 15, Acronyms.** This chapter was updated to include revisions as well as additional acronyms introduced after printing and publication of the Draft Supplemental EIR/EIS.

### *Volume II*

- **Appendix 3.1-C, Comparison of Mitigation Measures and Impacts: Central Valley Wye and Merced to Fresno Final EIR/EIS.** Revisions included summaries of changes to mitigation measures between the Merced to Fresno Final EIR/EIS and the Central Valley Wye Draft Supplemental EIR/EIS and a comparison of impact conclusions between the two documents.
- **Appendix 3.2-A, High-Speed Rail Grade Separation and Road Closures for Central Valley Wye Alternatives.** Revised to indicate how project-related roadway closures compared to earlier Caltrans agreement documents with Madera County.
- **Appendix 3.3-B, Memorandum Describing Consistency with the Merced to Fresno General Conformity Determination.** Additional correspondence between the Authority and FRA has been included with this appendix.
- **Appendix 3.4-A, Noise and Vibration Mitigation Guidelines.** Revised to reflect program-wide changes since the printing and publication of the Draft Supplemental EIR/EIS.
- **Appendix 3.12-D, Economic Effects on School Districts.** Clarifying text was added regarding the potential bonding capacity of school districts and school bus route impacts.
- **Appendix 3.16-A, Aesthetics and Visual Quality Local and Regional Plans and Laws Consistency Analysis.** Updates to IAMFs were added.
- **Appendix 3.17-C, Tribal Consultation.** The proper name of one tribe was corrected in several locations.
- **Appendix 3.19-A, Cumulative Plans and Non-Transportation Project List.** In response to a comment on the Draft Supplemental EIR/EIS, one update was added to this list.



### 3.1.5 Chapter 3 Organization and Content

This Final Supplemental EIR/EIS divides each section for the resource topics in Chapter 3 into the subsections described below.

#### 3.1.5.1 Introduction

The introduction presents an overview of the resource topic and the issues considered in the analysis, and it defines the relevant resource issues. This section also identifies separate technical reports and appendices that support the analysis, as applicable, and other related environmental resource sections where this topic is discussed. This Final Supplemental EIR/EIS uses many of the same sources and methods as the Merced to Fresno Final EIR/EIS; this section identifies the similarities and differences between the two analyses.

#### 3.1.5.2 Laws, Regulations, and Orders

This section identifies any applicable updates or additions to the legal and regulatory framework that have occurred since publication of the Merced to Fresno Final EIR/EIS.

#### 3.1.5.3 Compatibility with Plans and Laws

This section addresses CEQA and NEPA requirements to describe a proposed project's inconsistencies or conflicts with applicable federal, state, and local land use and other plans and laws. CEQA Guidelines require that an EIR discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans (CEQA Guidelines, § 15125(d)).<sup>8</sup> The Council on Environmental Quality (CEQ) regulations require a discussion of conflicts between a proposed undertaking and the objectives of federal, regional, state, local and tribal<sup>9</sup> land use plans, policies, and laws, as well as a description of the extent to which the Authority would reconcile the inconsistencies (CEQ Regulations, §§ 1502.16(c), 1506.2(d)). This discussion is provided in each resource section under the heading Compatibility with Plans and Laws. A complete inventory of the pertinent regional and local Plans and Laws appears in Appendix 3.1-A.

#### 3.1.5.4 Methods for Evaluating Impacts

This section defines the RSA, describes the methods used to evaluate the impacts of implementing the Central Valley Wye alternatives, and discusses the thresholds used for determining significance under CEQA for each resource topic. The methods for evaluating NEPA impacts are consistent with FRA Procedures for Considering Environmental Impacts (64 Fed. Reg. 28545), and the methods for evaluating CEQA impacts are consistent with the CEQA Guidelines, including the December 2018 Guidelines Amendments.

The methods for evaluating impacts apply to the analysis for both NEPA and CEQA unless otherwise indicated. In most cases, the methods used to collect data and evaluate potential impacts for each resource topic are the same as the data collection and impact evaluation methods found in the Merced to Fresno Final EIR/EIS. A complete description of the methods is presented in the sections for each resource along with a description of any substantive differences in the methods for analysis between this Final Supplemental EIR/EIS and the Merced to Fresno Final EIR/EIS. In some instances, the Authority updated its methods for the impact

#### *Content of Resource Sections*

Each resource section in Chapter 3 includes the following sections:

1. Introduction
2. Laws, Regulations, and Orders
3. Compatibility with Plans and Laws
4. Methods for Evaluating Impacts
5. Affected Environment
6. Environmental Consequences
7. Mitigation Measures
8. Impacts Summary for NEPA Comparison of Alternatives
9. CEQA Significance Conclusions

<sup>8</sup> All citations in this document to the "CEQA Guidelines" are references to the California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387.

<sup>9</sup> No designated tribal lands exist in the vicinity of the Central Valley Wye alternatives and no analysis of tribal land use policies is provided.

analysis or used new thresholds for determining significance under CEQA. This Final Supplemental EIR/EIS includes updated data collected since the Merced to Fresno Final EIR/EIS was approved. If still current, data collected for the Merced to Fresno Final EIR/EIS also informs this impact evaluation.

### **Definition of Resource Study Areas**

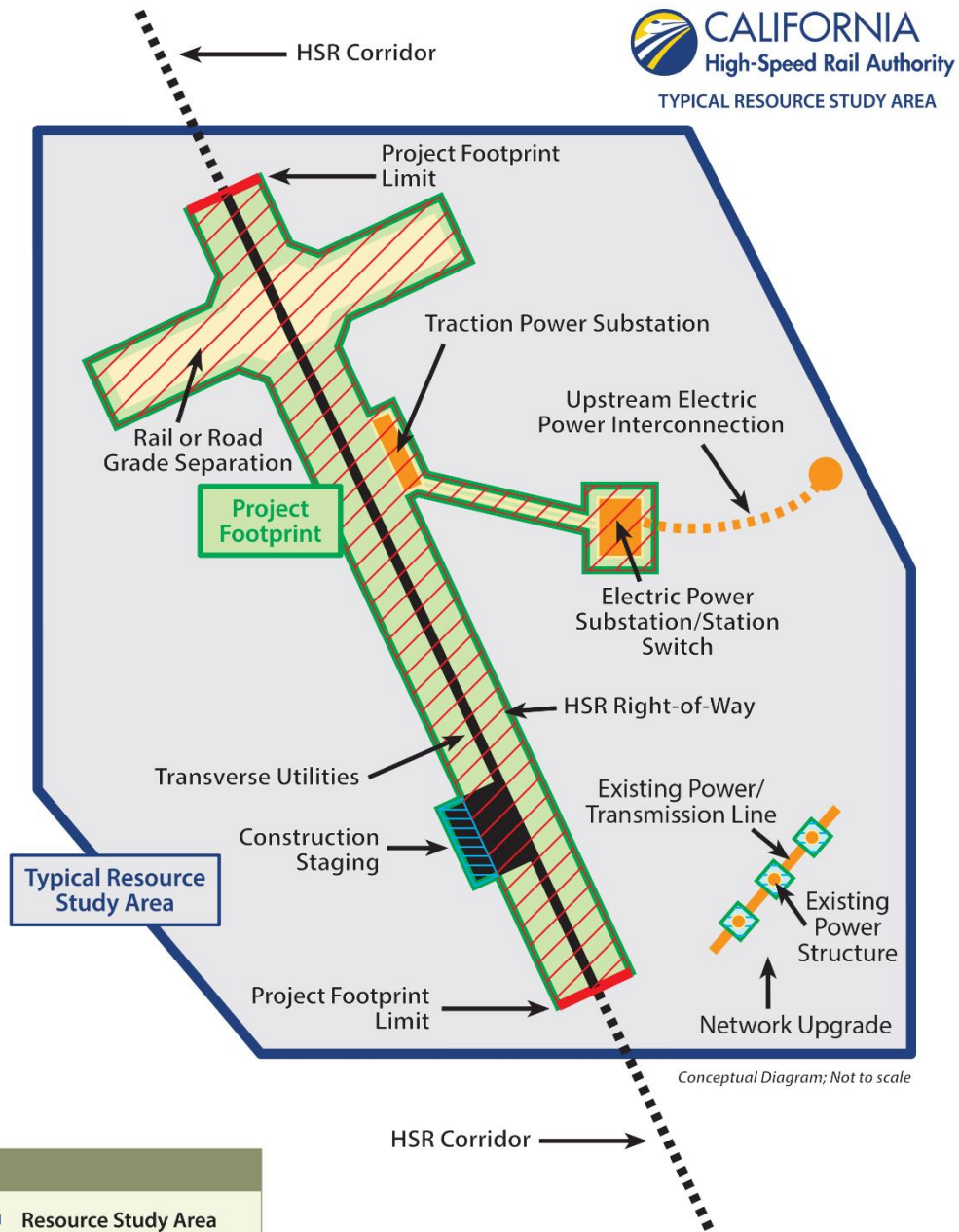
The RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted and therefore vary in context by each resource topic. A resource topic may have more than one RSA depending on the impacts being analyzed. The RSAs pertinent to each specific resource topic are described in each resource subsection (Section 3.2 through Section 3.18) and for cumulative impacts (Section 3.19). Figure 3.1-1 illustrates the components of a typical RSA.

Each RSA covers a geography that includes:

- Area necessary to define characteristics and context of the resource
- Facilities or features within the project footprints of the Central Valley Wye alternatives and associated activities that could affect the resource
- Area necessary to determine the direct and indirect impacts (both beneficial and adverse) of the Central Valley Wye alternatives

### **Impact Avoidance and Minimization Features**

The evaluation of impacts takes into account the beneficial influence of IAMFs, which are part of the Central Valley Wye alternatives and would be included by the Authority as part of final design and construction to avoid and minimize impacts (see Section 2.2.3.7, Impact Avoidance and Minimization Features, for more information). IAMFs are standard practices and design features that provide specific means to avoid and minimize environmental and community impacts. IAMFs may involve the development of a plan or program, such as a dust control plan to minimize impacts on air quality, or require or restrict an action, such as limiting construction material delivery hours to minimize impacts on traffic during peak travel times, to achieve a specific outcome. IAMFs differ from mitigation measures in that they are part of the Central Valley Wye alternatives and would be implemented by the Authority as a binding commitment included as part of project approval. In contrast, mitigation measures (where adopted) would further reduce, compensate for, or offset impacts of the Central Valley Wye alternatives. This Final Supplemental EIR/EIS labels and numbers IAMFs. For example, AG-IAMF#1 refers to the first agricultural (AG) resources-related IAMF.



Conceptual Diagram; Not to scale

LEGEND	
	Resource Study Area
	Project Footprint
	Permanent Impact Area
	Temporary Impact Area

11/30/16

Note: The resource study area for analysis of proposed off-site mitigation impacts may occur outside the project footprint.

Source: Authority and FRA 2016

NOVEMBER 30, 2016

Figure 3.1-1 Typical Resource Study Area

## Methods for NEPA and CEQA Impact Analysis

Each resource section describes the methods and data sources analysts used for identifying impacts on that resource. The methods for analysis vary by resource and rely on both quantitative and qualitative techniques. Where appropriate to understand the impacts, fieldwork was conducted to collect data. The sections identify any differences in methods or data sources employed between this Final Supplemental EIR/EIS and the Merced to Fresno Final EIR/EIS. In most cases, the methods are the same and are presented again in each section to facilitate a clear understanding. However, in some instances, the methods have been refined, and these updates are presented in each section.

While the terms “context” and “intensity” themselves are not used in the analysis, these concepts are employed to fully illustrate the impacts and facilitate comparison between alternatives. *Context* refers to the environment in which a proposed project occurs, and may include affected interests or resources, the specific locality, the region, or society as a whole, depending on the resource. *Intensity* refers to the severity of the impact; its analysis encompasses the type, quality, and sensitivity of the resource involved; location and extent of the impact; duration of the impact; whether the action threatens a violation of federal or state law or requirements imposed for the protection of the environment; and other intensity considerations (40 C.F.R. 1508.27). Under NEPA, once a decision to prepare an EIS is made, the analysis focuses on the magnitude of the impact; no explicit judgment of its significance is made. Nonetheless, the Authority acknowledges that the Merced to Fresno Final EIR/EIS identified NEPA impacts in terms of significance. In this Final Supplemental EIR/EIS however, each analytical section within Chapter 3 provides a detailed discussion of NEPA impact conclusions.

Conversely, CEQA requires the identification of each “significant effect on the environment” resulting from the project and uses a threshold-based approach to determine significance (CEQA Guidelines §§ 15064(a) and 15126.4). All significant impacts on the environment must be disclosed and mitigated, if feasible. Because of the difference in the approach to the determinations of significance under NEPA and CEQA, impacts determined to be significant under CEQA will not have a similar label under NEPA.

Each impact is identified by a name and number (e.g., Impact AG#1, Temporary Use of Important Farmland). The impact names in this Final Supplemental EIR/EIS are similar to the impact names in the Merced to Fresno Final EIR/EIS. Appendix 3.1-C of this Final Supplemental EIR/EIS provides added text and tables to better show the relationship between the impact names/conclusions used in the Merced to Fresno Final EIR/EIS and this Final Supplemental EIR/EIS. Any differences in the impact names are the result of organizational changes made to improve readability, changes in the approach to identifying construction impacts and operations impacts, and impacts that are specific to either document.

### Determining Significance under CEQA

The Authority has established thresholds in each resource category based on Appendix G of the CEQA Guidelines to determine the level of significance of impacts under CEQA and, where appropriate, the requirement for mitigation measures to reduce the magnitude and severity of impacts. If a threshold is exceeded, the impact is considered significant and the impact is specifically identified. For significant impacts, feasible mitigation measures are identified. For example, in Section 3.4, the first significant impact discussed is Impact NV#1: Temporary Exposure of Sensitive Receivers to Construction Noise, and mitigation measure NV-MM#1: Construction Noise Mitigation is provided to reduce this impact. If mitigation does not reduce an impact below the threshold, the impact remains significant after mitigation. The CEQA thresholds of significance are presented in each resource section.

#### 3.1.5.5 Affected Environment

The affected environment section describes the existing conditions within the RSA for that resource. The affected environment section provides the basis and context for environmental analysis and evaluation of impacts. This Final Supplemental EIR/EIS updates the descriptions in the Merced to Fresno Final EIR/EIS with new information about conditions of resources in the

affected environment for each resource and extends the Merced to Fresno wye design options to include the area west of Road 8 (see Section 2.2.1, Central Valley Wye Alternatives, for additional information). The area associated with the electrical interconnections and network upgrades are also included as part of the Central Valley Wye alternatives. The updates focus on changes in the regional setting and context since publication of the Merced to Fresno Final EIR/EIS in 2012, including information updated through additional fieldwork, research, and meetings with stakeholders. However, for readability, the affected environment is presented comprehensively and includes relevant data from the Merced to Fresno Final EIR/EIS as well information that has been updated since 2012.

CEQA requires an EIR to include a description of the existing physical environmental conditions in the vicinity of the project and states that those conditions will “normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant” (CEQA Guidelines § 15125(a)). The existing conditions baseline year for this Final Supplemental EIR/EIS is generally 2015, the time when the environmental analysis for the Central Valley Wye alternatives began. As such, this Final Supplemental EIR/EIS evaluates the impact of the Central Valley Wye alternatives against the current environmental conditions for the purposes of the CEQA analysis. A description of the requirements under NEPA to provide a comparison to the No Project Alternative follows in Section 3.1.3.6, Environmental Consequences.

### **3.1.5.6 Environmental Consequences**

The environmental consequences section describes the impacts resulting from the Central Valley Wye alternatives as well as the impacts resulting from the No Project Alternative.

#### **No Project Alternative**

The CEQA Guidelines also require that an EIR examine “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community service” (CEQA Guidelines § 15126.6(e)(2)). Similarly, NEPA requires that the alternatives analysis in an EIS “include the alternative of no action” (CEQ regulations 1502.14(d)). Accordingly, the No Project Alternative is included in this Final Supplemental EIR/EIS to provide decision-makers and the public with a basis of comparison for evaluating the impacts of the Central Valley Wye alternatives. The No Project Alternative in this Final Supplemental EIR/EIS serves as both the “no action” alternative under NEPA and the “no project” alternative under CEQA.

Each resource section contains an analysis of the No Project Alternative under a “No Project Alternative” subheading. This analysis is qualitative in nature and considers the impacts of current land use and transportation plans in Merced and Madera Counties, including planned improvements to the highway, aviation, conventional passenger rail, and freight rail systems through the 2040 planning horizon for the environmental analysis. The No Project Alternative assumes no high-speed rail is constructed in the area of the Central Valley Wye alternatives, but that the construction that is currently underway in the Merced to Fresno section would continue to completion and connect to the adjacent Fresno to Bakersfield section, which is also under construction. The No Project Alternative also assumes that other parts of the Phase 1 HSR System between San Francisco and Los Angeles would be built and operational by 2040, achieving many, but not all, of the benefits of a continuous, 520 mile Phase 1 system. A gap in the Phase 1 HSR System in the wye area, like a gap in the system anywhere else in the state, would reduce the transportation connectivity and environmental benefits of the Phase 1 system as a whole until the gap is eliminated.

As noted in Section 2.2.3, Description of the Central Valley Wye Alternatives, the EINU proposed in Merced, Madera, Fresno, and Stanislaus Counties are ancillary project features, specifically designed to allow PG&E to accommodate the planned electrical load required for the HSR system only. Consequently, if none of the Central Valley Wye alternatives is approved, these upgrades would not be required. It is anticipated that the network upgrade areas in Merced, Madera, Fresno, and Stanislaus Counties would remain the same as the existing conditions for the foreseeable future because no other PG&E projects are currently proposed or reasonably

foreseeable. Therefore, the analysis of the No Project Alternative throughout this chapter is focused on Merced and Madera Counties where reasonably foreseeable consequences of not implementing the Central Valley Wye alternatives would occur.

### Central Valley Wye Alternatives

The environmental consequences section continues with a discussion of the potential temporary and permanent impacts resulting from construction and operation of the Central Valley Wye alternatives. The analysis includes sufficient information to allow for meaningful evaluation, analysis, and comparison of the Central Valley Wye alternatives. The section presents the environmental consequences in comparative form. As described in Chapter 2, Alternatives, the Central Valley Wye alternatives resemble each other because of their geographic proximity and uniform design features, and consequently in many cases they would result in similar impacts. Where the impacts of the alternatives differ, the chapter section identifies those differences to clearly define the choices each of the alternatives presents.

Each impact discussion that addresses a CEQA threshold also includes a subsection entitled CEQA Conclusion. The CEQA Conclusion subsection identifies the relevant CEQA threshold and describes the level of CEQA significance for that threshold. A discussion of mitigation is included where it is required to address a significant CEQA impact. The full text of applicable mitigation measures is provided later in the resource section. For example, Impact NV#1 in Section 3.4 includes mitigation measure NV-MM#1 to reduce the impact. The full text of NV-MM#1 is provided in Section 3.4.7, Mitigation Measures.

NEPA and CEQA also require examination of a project's cumulative impacts (i.e., a project's impacts considered in conjunction with the impacts of other past, present, and reasonably foreseeable projects causing related impacts). Section 3.19 discusses the Central Valley Wye alternatives' contribution to any cumulative impact for each resource.

#### 3.1.5.7 Mitigation Measures

This section identifies and describes proposed mitigation measures to avoid, minimize, repair or restore, reduce over time, or compensate for adverse impacts. Because this is a supplemental analysis, mitigation measures will apply in the following ways:

- Implementation of the previously adopted mitigation measures from the Merced to Fresno Final EIR/EIS that are applicable to the Central Valley Wye
- Modified mitigation measures from the Merced to Fresno Final EIR/EIS<sup>10</sup>
- New mitigation measures not included in the Merced to Fresno Final EIR/EIS

This approach tailors mitigation to reduce or offset adverse impacts potentially resulting from implementing each of the Central Valley Wye alternatives, including those impacts previously identified in the Merced to Fresno Final EIR/EIS as well as impacts specific to the Central Valley Wye alternatives. Included in the discussion is mitigation adopted as part of the May 2012 Mitigation Monitoring and Reporting Program and the September 2012 Mitigation Monitoring and Enforcement Plan (and subsequent amendments). The Authority anticipates adoption of a Supplemental Mitigation Monitoring and Enforcement Program for the Merced to Fresno Section: Central Valley Wye.

A discussion of potential secondary impacts resulting from the implementation of each mitigation measure follows the full text of each measure (CEQA Guidelines § 15126.4(a)(1)(D)). If, during project implementation, changing facts or circumstances render mitigation infeasible, additional environmental review may be required. The Authority will continue the current practice of developing memoranda of understanding and funding agreements with local governments to

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<sup>10</sup> Measures have been modified to address the specific circumstances of the Central Valley Wye. See Section 3.1.2, Changes in Analysis since the Merced to Fresno Final EIR/EIS, for further information.

facilitate implementation of off-site mitigation measures on property owned at the local agency level, where required.

Most mitigation measures identified in Chapter 3 would be implemented within the project footprints of the Central Valley Wye alternatives. These measures may include physical actions accomplished within the Central Valley Wye alternatives' rights-of-way (for example, planting trees along the edges of the HSR right-of-way to visually screen the guideway) and construction methods and techniques, among others. In rare cases when mitigation is not possible within the project footprints of the Central Valley Wye alternatives, some of the proposed mitigation would take place outside the project footprints and therefore outside property the Authority would own as part of its right-of-way acquisitions. Such *off-site* mitigation that occurs outside the project footprints would require cooperation with the property owners involved or with the jurisdiction that regulates the property.

### **3.1.5.8 Impacts Summary for NEPA Comparison of Alternatives**

This section summarizes the impacts from implementing the No Project Alternative and the Central Valley Wye alternatives described in the Environmental Consequences section. This summary of impacts takes into account the effects of the IAMFs. For any listed impacts, mitigation measures that are applied to reduce impacts are also discussed. This summary includes quantitative data, where available.

### **3.1.5.9 CEQA Significance Conclusions**

This section includes a table that summarizes all construction and operations impacts and CEQA significance determinations for the Central Valley Wye alternatives. The table lists impacts identified for each resource (by name and number as presented earlier in the Environmental Consequences section), reports the level of significance of each impact prior to mitigation, indicates mitigation measures that have been developed to reduce significant impacts, and identifies the level of significance after mitigation measures are implemented.