

3 Affected Environment, Environmental Consequences, and Mitigation Measures

3.17 Cultural Resources

3.17.1 Introduction

Section 3.17, Cultural Resources, of this *Merced to Fresno Section: Central Valley Wye Final Supplemental Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* (Final Supplemental EIR/EIS) updates the *Merced to Fresno Section California High-Speed Train Final Project EIR/EIS* (Merced to Fresno Final EIR/EIS) (California High-Speed Rail Authority [Authority] and Federal Railroad Administration [FRA] 2012a) with new and revised information relevant to cultural resources. It analyzes the potential impacts of the No Project Alternative and the Central Valley Wye alternatives and describes how the project would avoid, minimize, or reduce these impacts. Where applicable, mitigation measures are proposed to further reduce, compensate for, or offset impacts of the Central Valley Wye alternatives. Section 3.17 also defines the cultural resources within the region and describes the affected environment in the resource study areas (RSA).

Cultural resources include archaeological, built environment, and traditional cultural artifacts, features, sites, and landscapes that are related to the heritage of past or modern people. The analysis follows the requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, which requires federal agencies to consider the effects of federal undertakings on historic properties. Historic properties are cultural resources that are listed or eligible for listing in the National Register of Historic Places (NRHP).

The analysis herein has similarities to and differences from the analysis conducted in the Merced to Fresno Final EIR/EIS. Both analyses rely on a 2011 Programmatic Agreement (PA) developed among the FRA, the Authority, the Advisory Council on Historic Preservation (ACHP), the State Historic Preservation Officer (SHPO), and consulting parties, including Native American tribes, to document the terms and conditions agreed upon to resolve the potential adverse effects of the California High-Speed Rail (HSR) Project in accordance with Section 106 (36 Code of Federal Regulations [C.F.R.] § 800.14(b)) (Authority and FRA 2011).

The implementing regulations for Section 106 allow for programmatic alternatives to the implementation of Section 106 if the review of the undertaking is governed by a federal agency program alternative established under 36 C.F.R. § 800.14. Accordingly, the Authority and FRA consulted with the California SHPO and the ACHP in the drafting of an agreement identifying programmatic alternatives for conducting Section 106 for the HSR system. The *Programmatic Agreement among the Federal Railroad Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California High-Speed Rail Authority Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the California High-Speed Train Project* (Authority and FRA 2011) was executed in 2011. While the studies conducted primarily follow the Section 106 process as well as industry standards, programmatic alternatives as agreed upon in this PA, and pursuant to 36 C.F.R. § 800.14, include the exemption of certain properties deemed to have little or no potential to be eligible for the NRHP; “streamlined” documentation of significantly altered resources that have reached 50 years of age; a requirement to prepare a memorandum of agreement (MOA) for each project section that adversely affects, or has the potential to adversely affect, historic properties; and a requirement to prepare treatment plans—one for built historic properties and one for archaeological properties—that tier off each MOA.

The *California High-Speed Train Merced to Fresno Section: Memorandum of Agreement for the Treatment of Adverse Effects on Historic Properties under Section 106 of the National Historic Preservation Act* (Merced Fresno MOA) was also signed by the same parties in 2012 (Authority and FRA 2012d). The Merced Fresno MOA was amended in 2013 to add the Surface Transportation Board and the U.S. Army Corps of Engineers (USACE) to the signatories

(Authority and FRA 2013) and again, in 2017, to add efficiencies for re-examinations (Authority and FRA 2017).

Since publication of the Draft Supplemental EIR/EIS, this section has been revised to address the global changes described at Section S.1.2, Global Changes in the Final Supplemental EIR/EIS, of the Summary as well as to incorporate a summary of the Native American Grave Protection and Repatriation Act and Section 106 Findings for the following impact discussions:

- Impact CUL#4, Temporary Public Access and Disturbance of Archaeological Resources,
- Impact CUL#5, Common Impacts on Archaeological Resources, and
- Impact CUL#6, Intermittent Vibration Impairments on Historic Architectural Resources.

Where information has changed or new information has become available since the Merced to Fresno Final EIR/EIS was prepared in 2012, the Central Valley Wye alternatives analysis uses updated versions of these sources or datasets. However, relevant portions of the Merced to Fresno Final EIR/EIS that remain unchanged are summarized and referenced in this section but are not repeated in their entirety. The analyses differ in the following way:

- The Merced to Fresno Final EIR/EIS analyzed cultural resources and paleontological resources as one section, while this Final Supplemental EIR/EIS analyzes paleontological resources with geology, soils, and seismicity in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources.

This analysis relies on studies prepared for the Merced to Fresno Final EIR/EIS, which are fully described in Section 3.17.5, Methods for Impact Analysis. Should a new impact on a historic property be determined, it could require the amendment of the treatment plans associated with the Merced Fresno MOA (Authority and FRA 2012d). If no new impacts are identified, but new or additional mitigation are necessary, the treatment plans can be amended accordingly. Stipulation VIII.C.1 of the PA and Stipulation V.D. of the 2013 Amended Merced Fresno MOA allow for associated treatment plans to be amended, upon agreement with the signatories, without formal amendment to the Merced Fresno MOA.

The Central Valley Wye cultural resources technical reports provide technical details on the project's cultural resources:¹

- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Archaeological Survey Report* (Central Valley Wye ASR) (Authority and FRA 2016b)
- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Archaeological Survey Report Addendum 1 Electrical Interconnections and Network Upgrades (Site 6 and 7)* (Authority and FRA 2016c)
- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Archaeological Survey Report Addendum 2* (Authority 2019a)
- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Historic Architectural Survey Report* (Central Valley Wye HASR) (Authority and FRA 2016d)

¹ The Historic Architectural Survey Report was 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 survey report was prepared. As a result, some of the information presented in the Draft Supplemental EIR/EIS was more current than the information presented in the survey report. To provide clarity on any information and data differences between the Draft Supplemental EIR/EIS and the survey report and the location of the most current information, a Central Valley Wye Technical Report Memorandum of Updates had been produced and included in Appendix 3.1-D, Central Valley Wye Technical Report Memorandum of Updates. Further changes between the Draft and Final Supplemental EIR/EIS are not recorded in that memorandum. The reports added since publication of the Draft Supplemental EIR/EIS relate to EINU changes.

- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Electrical Interconnections and Network Upgrades Historic Architectural Survey Report, Addendum 1* (Authority and FRA 2016a)
- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Historic Architectural Survey Report, Addendum 2* (Authority 2019b)
- *California High-Speed Rail Merced to Fresno Section: Central Valley Wye Final Supplemental Section 106 Findings of Effect Report* (Authority and FRA 2018)

The Historic Architectural Survey Reports (HASR) and Findings of Effect (FOE) are available via the Authority's website:

https://www.hsr.ca.gov/programs/environmental/eis_eir/draft_supplemental_merced_fresno.aspx.

In accordance with state and federal laws that aim to protect archaeological sites from damage or destruction through looting by prohibiting the public distribution of site locations, the ASRs are not publicly available to protect site location details. Additional details on cultural resources are provided in the following appendices in Volume II of this Final Supplemental EIR/EIS:

- Appendix 3.17-A, Cultural Resources Local and Regional Plans and Laws Consistency Analysis, provides a discussion of inconsistencies or conflicts that may exist between the Central Valley Wye alternatives and regional or local plans or laws.
- Appendix 3.17-B, Section 106 Programmatic Agreement and Merced to Fresno Section Memoranda of Agreement, provides the PA among the FRA, the ACHP, the California SHPO, and the Authority regarding compliance with Section 106 of the NHPA, as it pertains to the California HSR Project. This appendix also includes the Merced to Fresno Section 106 Memorandum of Agreement (with addenda) that stipulates specific actions that will be taken to address the adverse effects of the Merced to Fresno Project Section and the Central Valley Wye alternatives.
- Appendix 3.17-C, Tribal Outreach and Consultation, provides a contacts list and a tabulated summary of consultation conducted by the Authority and FRA for the HSR Section 106 Programmatic Agreement with an emphasis on tribal outreach and consultation for the Central Valley Wye alternatives.

Cultural resources, including archaeological resources and historic architectural resources, in the Central Valley Wye alternatives' RSA and surrounding San Joaquin Valley are important factors for interpreting and connecting to the past on a regional and national scale. Two other resource sections and one chapter in this Final Supplemental EIR/EIS provide additional information related to cultural resources:

- **Section 3.4, Noise and Vibration**—Impacts of constructing the Central Valley Wye alternatives on cultural resources related to damage caused by vibration and disturbance caused by noise.
- **Section 3.16, Aesthetics and Visual Resources**—Impacts of constructing the Central Valley Wye alternatives on the visual context and setting of historic properties.
- **Chapter 4, Final Section 4(f) and Section 6(f) Evaluations**—Identifies and analyzes the impacts of construction of the Central Valley Wye alternatives on historic properties protected by Section 4(f) of the Department of Transportation Act.

Definition of Resources

The following are definitions for cultural resources analyzed in this Final Supplemental EIR/EIS. These definitions are the same as those used in the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a).

- **Cultural Resources**—Cultural resources refer to prehistoric archaeological sites, historic-era archaeological sites, traditional cultural properties, and historic buildings, structures, landscapes, districts, and linear features.
- **Archaeological Sites**—Archaeological sites are defined for the purposes of this study as cultural resources from the non-built environment in which evidence of past human activity is preserved and includes features or artifacts created or modified by humans. The line between prehistoric and historic-era archaeological sites in the Americas is generally defined as the point of time in a region when European contact occurred and thus writing systems were introduced to the peoples of that region. For the region under study, the historic era generally begins with the period of Spanish colonization beginning in the 18th century, though isolated historic sites have been found before this time.
- **Historic Architectural Resources**—Historic architectural resources refer to all built-environment resources such as buildings, structures, objects, landscapes, linear features, and districts that are 50 years of age or older.
- **Historic Properties**—Historic properties are those cultural resources that are listed or have been determined eligible for listing in the NRHP. Historic properties are protected under Section 106 of the NHPA and under Section 4(f) of the Department of Transportation Act, and therefore are sometimes referred to as Section 106 properties and/or Section 4(f) properties.

3.17.2 Laws, Regulations, and Orders

This section identifies laws, regulations, and orders that are relevant to the analysis of cultural resources and historic properties in this Final Supplemental EIR/EIS. Also provided are summaries of new or updated laws, regulations, and orders that have occurred since publication of the Merced to Fresno Final EIR/EIS.

3.17.2.1 Federal

The following federal laws, regulations, orders, and plans are the same as those described in Section 3.17.2, Laws, Regulations, and Orders, of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-2 through 3.17-4):

- NHPA (54 United States Code [U.S.C.] § 300101, et seq., including Section 106 of the NHPA, 54 U.S.C. § 306108)
- Implementing Regulations, Section 106 NHPA (36 C.F.R. § 800)
- Archaeological and Historic Preservation Act (16 U.S.C. §§ 469–469(c)-2)
- American Antiquities Act (16 U.S.C. §§ 431–433)
- American Indian Religious Freedom Act (42 U.S.C. § 1996)
- Section 4(f) of the Department of Transportation Act (49 U.S.C § 303)
- Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments, April 29, 1994
- U.S. Presidential Executive Order (USEO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- USEO 13175, Consultation with Indian Tribal Governments
- U.S. Department of Transportation Tribal Consultation Plan (DOT Order 5301.1)

New, additional, or updated federal laws, regulations, and orders follow.

U.S. Presidential Executive Order 13007, Indian Sacred Sites

USEO 13007 requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. USEO 13007 applies to federal projects on federal lands.

Native American Grave Protection and Repatriation Act (25 U.S.C. §§ 3001–3013)

The Native American Grave Protection and Repatriation Act (NAGPRA) describes the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, referred to collectively in the statutes as cultural items, with which they can show a relationship of lineal descent or cultural affiliation. One purpose of the statute is to provide greater protection for Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on federal and tribal lands.

3.17.2.2 State

The following state laws, regulations, orders, and plans are the same as those described in Section 3.17.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-4 through 3.17-6):

- California Native American Graves Protection and Repatriation Act

New or updated state laws, regulations, and orders follow.

California Environmental Quality Act (Cal. Public Res. Code § 21083.2, §21084.1 and CEQA Guidelines (Cal. Code Regs, title 14, § 15064.5)

California Environmental Quality Act (CEQA) Guidelines were revised in 2016, updating the previous version of guidelines included in Section 3.17.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a; pages 3.17-4 through 3.17-5). Section 15064.5 provides specific guidance for determining the significance of impacts on historic resources and unique archaeological resources. CEQA Public Resources Code sections 21083.2 and 21084.1 and CEQA Guidelines Section 15064.5(c) provide further definitions and guidance for archaeological sites and their treatment. Updates to CEQA since the Merced to Fresno Final EIR/EIS include requirements of Assembly Bill (AB) 52, signed by California Governor Brown in 2014. For projects that issue a Notice of Preparation after July 1, 2015, AB 52 requires the lead agency to offer Native American tribes with an interest in tribal cultural resources located within its jurisdiction the opportunity to consult on CEQA documents. AB 52 does not apply to the Central Valley Wye alternatives because the Notice of Preparation was issued prior to July 1, 2015.

3.17.2.3 Regional and Local

The following county and local plans are the same as those described in Section 3.17.2 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-6 through 3.17-8):

- *Madera County General Plan, Policy Document* (1995)
- *Fresno County General Plan* (2000)
- *City of Chowchilla 2040 General Plan* (2011)

Table 3.17-1 lists new or updated county policies and objectives relevant to the Central Valley Wye alternatives.

Table 3.17-1 Local Plans and Policies

Policy Title	Summary
Merced County	
<i>2030 Merced County General Plan (2013)</i>	<p>Merced County adopted the <i>2030 Merced County General Plan</i> on December 10, 2013, updating the previous version of the general plan that was included in Section 3.9.2.3 (page 3.9-4) of the Merced to Fresno Final EIR/EIS. The general plan includes the following goals and policies:</p> <ul style="list-style-type: none"> ▪ Recreation and Cultural Resources Element Goal RCR-2: Protect and preserve the cultural, archaeological, and historic resources of the County in order to maintain its unique character. ▪ Policy RCR-2.1: Archaeological Site and Artifact Protection—Require development projects that affect archaeological sites and artifacts to avoid disturbance or damage to these sites. ▪ Policy RCR-2.2: Historic Area Preservation—Support the preservation of historic structures and areas, particularly those listed on the National Registrar [sic] of Historic Places and California Registrar [sic] of Historic Places. ▪ Policy RCR-2.3: Architectural Character Preservation—Require that the original architectural character of significant State and Federally listed historic structures be maintained in compliance with preservation standards and regulations. ▪ Policy ROS-2.4: Park and Open Space Historic Resource Preservation—Require the preservation of historic resources located in parks and publicly owned open-space areas. ▪ Policy RCR-2.5: Human Remains Discovery—Require that, in the event of discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified. ▪ Policy RCR-2.6: Historic Buildings and Areas—Identify and preserve buildings and areas with special and recognized historic, architectural, or aesthetic value during the Community Plan update process. New development should respect architecturally and historically significant buildings and areas. ▪ Policy RCR-2.7: Historic Preservation—Support the efforts of local preservation groups and community property owners to preserve or improve building facades and exteriors consistent with the historic visual character of the specific building or area. ▪ Policy RCR-2.8: Historical Preservation Area/Site Designations—Allow sites of historic and archaeological significance to be designated as historic preservation areas or sites during the Community Planning process or on individual sites in rural areas.
Stanislaus County	
<i>Stanislaus County General Plan (2016)</i>	<p>Stanislaus County adopted the <i>Stanislaus County General Plan</i> on August 23, 2016. The general plan includes the following goals and policies:</p> <ul style="list-style-type: none"> ▪ Policy 24: The County will support the preservation of Stanislaus County's cultural legacy of archeological, historical, and paleontological resources for future generations.
City of Waterford	
<i>Waterford Vision 2025 General Plan (2006)</i>	<p>The City of Waterford adopted the <i>Waterford Vision 2025 General Plan</i> on October 26, 2006. The general plan includes the following goals and policies:</p> <ul style="list-style-type: none"> ▪ Policy SD-2.1: Identify and preserve the City's archaeological resources. ▪ Policy SD-2.2: Identify and preserve the City's historic and cultural resources.

Policy Title	Summary
City of Merced	
<i>Merced Vision 2030 General Plan (2015)</i>	<p>The <i>Merced Vision 2030 General Plan</i> was updated in 2015, updating the previous version of the plan that was included in Section 3.17.2.3 (3.17-6) of the Merced to Fresno Final EIR/EIS. The plan was adopted by the City Council on January 3, 2012 with updates following in 2015, and includes the following policies:</p> <ul style="list-style-type: none"> ▪ Policy SD-2.1: Identify and preserve the City's archaeological resources. ▪ Policy SD-2.2: Identify and preserve the City's historic and cultural resources.

Source: *City of Merced, 2015; City of Waterford, 2006; Merced County, 2013; Stanislaus County, 2016*

3.17.3 Compatibility with Plans and Laws

As indicated in Section 3.1.5.3, Compatibility with Plans and Laws, CEQA and the National Environmental Policy Act (NEPA) regulations² require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. As such, this Final Supplemental EIR/EIS describes the inconsistency of the Central Valley Wye alternatives with federal, state, regional, and local plans and laws to provide planning context.

There are a number of federal and state laws and implementing regulations, listed in Section 3.17.2.1, Federal, and Section 3.17.2.2, State, that direct the preservation and management of cultural resources on federal and state lands. There are also several federal and state acts that pertain to tribal consultation regarding cultural resources and historic properties which are applicable to this Final Supplemental EIR/EIS. A summary of the federal and state requirements considered in this analysis follows:

- Federal and state acts and laws that provide comprehensive requirements for cultural resources preservation and management. Applicable laws include the NHPA, the Archaeological and Historic Preservation Act, the American Antiquities Act, Section 4(f) of the Department of Transportation Act, CEQA, and the California Register of Historical Resources (CRHR).
- Federal and state acts and laws that outline the treatment of Native American human remains and cultural items, and that establish guiding principles for government-to-government consultation and collaboration. Applicable laws, executive orders, and mandates include the American Indian Religious Freedom Act; the Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments; USEO 13175, Consultation with Indian Tribal Governments; USEO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; U.S. Department of Transportation Tribal Consultation Plan; and the California Native American Grave Protection and Repatriation Act.

The Authority, as the NEPA and CEQA lead agency proposing to construct and operate the HSR system, is required to comply with all federal and state laws and regulations and to secure all applicable federal and state permits prior to initiating construction on the selected alternative. Therefore, there would be no inconsistencies between the Central Valley Wye alternatives and these federal and state laws and regulations.

The Authority is a state agency and therefore is not required to comply with local land use and zoning regulations; however, it has endeavored to design and construct the HSR project so that it is compatible with land use and zoning regulations. For example, the Central Valley Wye alternatives would incorporate impact avoidance and minimization features (IAMF) to minimize impacts on cultural resources and historic properties. A total of 37 local and regional policies and ordinances were reviewed. The Central Valley Wye alternatives would be consistent with 33

² NEPA regulations refer to the regulations issued by the Council on Environmental Quality (40 C.F.R. 1500 -1508).

policies and ordinances and inconsistent with one goal and three policies within the following regional and local plans and laws:

- **Merced Vision 2030 General Plan** (Merced County 2013)—Goal RCR-2, Policy RCR-2.1, and Policy RCR-2.5: While the Central Valley Wye alternatives would not affect any known archaeological resources, there is a potential for construction activities to encounter unknown archaeological resources or human remains. Therefore, the Central Valley Wye alternatives would be inconsistent with this goal and two related policies. Through project design features and mitigation measures, the Authority would reconcile potential inconsistencies and avoid, minimize, or mitigate impacts on cultural resources by requiring an inventory of archaeological resources, instituting training for construction crews, and following proper state and federal procedures in the event that Native American remains are discovered.
- **Madera County General Plan** (Madera County 1995)—Policy 4.D.3: While the Central Valley Wye alternatives would not affect any known archaeological resources, there is a potential for construction activities to impair the significance of unknown archaeological resources, including in areas where permission to enter has not been granted. Unknown archaeological sites might represent the full range of prehistoric or historic activities conducted over time, from prehistoric lithic scatters and village sites, to historic-era homestead remains, to human burials. Therefore, the Central Valley Wye alternatives would be inconsistent with this policy. Through project design features and mitigation measures, the Authority would avoid, minimize, or mitigate impacts on cultural resources and reconcile potential inconsistencies by requiring an inventory of archaeological resources, instituting training for construction crews, and following proper state and federal procedures.

All four Central Valley Wye alternatives would be inconsistent with this goal and these policies in the same manner. Further details and reconciliations are discussed in Appendix 3.17-A. After implementation of mitigation measures, all inconsistencies would be reconciled and the Central Valley Wye alternatives would be consistent with all regional and local plans and laws. Through implementation of CUL-MM#1, Amend Archaeological and Built Environment Treatment Plans, the Authority would complete the inventory for archaeological resources and develop treatment plans for any identified resources that would be impaired by the alternatives. Implementation of CUL-MM#2, Mitigate Adverse Impacts on Archaeological and Built Environment Resources Identified During Phased Identification; Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the PA and MOA, and CUL-MM#3, Halt Work in the Event of an Archaeological Discovery and Comply with the PA, MOA, ATP, and all State and Federal Laws, as Applicable, would require that construction crews are trained to identify buried cultural resources during construction activities, provide for construction monitoring by qualified professionals in areas of archaeological sensitivity, and establish procedures to stop work in the event of a discovery. In accordance with CUL-MM#3, if human remains are encountered, the appropriate state and federal laws would be followed to determine whether the remains are affiliated with a Native American tribe; if so, such remains would be treated appropriately.

3.17.4 Coordination of Section 106 with NEPA and CEQA Compliance

The ACHP advises federal agencies to coordinate compliance with Section 106 of the NHPA and the procedures in the regulations implementing Section 106, with steps taken to meet the requirements of NEPA so that they can meet the purposes and requirements of both statutes in a timely and efficient manner. The Section 106 process and documentation requirements are defined at 36 C.F.R. Part 800.

When NEPA review and Section 106 are integrated, ways to avoid, minimize, or mitigate adverse effects while identifying alternatives and preparing NEPA documentation can be assessed. Similarly, both CEQA guidelines and NEPA regulations encourage the preparation of joint documents as a way to avoid duplication and delay and to coordinate design features and mitigation measures to avoid, minimize, or mitigate impacts on historic resources. Such measures are binding commitments documented in the EIR/EIS, as well as in compliance with Section 106 by the preparation of a MOA.

As mentioned previously, the July 2011 PA provides an overall framework for how the Authority would achieve compliance with Section 106 of the NHPA, and includes stipulations regarding the identification, evaluation, and treatment of historic properties; delineation of the area of potential effect (APE); consultations with tribal governments, local agencies, and interested parties; and standards for technical documentation.

Although changes to the Merced Fresno MOA (Authority and FRA 2012d) are not anticipated at this time, if such changes to the Merced Fresno MOA or the Merced to Fresno Section treatment plans are determined to be necessary following consultation on the Central Valley Wye alternatives Finding of Effect, amendments to the Merced Fresno MOA and treatment plans (i.e., the archaeological treatment plan [ATP] and built environment treatment plan [BETP]) would be developed for the Central Valley Wye alternatives. These amendments would address historic properties and historic resources determined eligible for listing in the NRHP and the CRHR within the APEs for both the Merced to Fresno Section and the Central Valley Wye alternatives. If Merced Fresno MOA amendments are required, they would be executed prior to or concurrent with the Record of Decision for the Central Valley Wye; the Record of Decision would be issued concurrently with or after the completion of the Final Supplemental EIR/EIS.

In accordance with Section 106 PA Stipulations VIII.B.i and VIII.B.ii, the Authority would develop amended treatment plans to detail the treatment measures for all historic properties within the Merced to Fresno Section, including the Central Valley Wye alternatives, and to update archaeological sensitivity mapping for areas not previously covered under the Merced to Fresno APE. The Merced Fresno MOA (Authority and FRA 2012d) Stipulation V.D., allows for associated treatment plans to be amended, upon agreement with the signatories, without formal amendment to the Merced Fresno MOA.

3.17.4.1 Contact with Potential Interested and Consulting Parties

In accordance with Stipulation V.A. of the PA, outreach and consultation with potential interested parties, including the public, historic preservation interest groups and individuals, and other federal, state, regional, or local agencies, regarding potential impacts on historic properties in the Merced and Madera County regions have been ongoing throughout the Central Valley Wye alternatives' process.³ In accordance with Stipulation V.B. of the PA, those parties with a demonstrated interest in the Central Valley Wye alternatives were invited by letter to participate as consulting parties to the Merced Fresno MOA (Authority and FRA 2012d). As previously described, the Merced Fresno MOA, Stipulation V.D., allows for associated treatment plans to be amended, upon agreement with the signatories, without formal amendment to the Merced Fresno MOA. The Merced Fresno MOA would not be amended because there are no newly identified historic properties in the Central Valley Wye alternatives; however, the ATP would be amended to address expansion of the project footprint with the addition of the Central Valley Wye alternatives.

Table 3.17-2 summarizes outreach efforts, to date, to local agencies, area museums, and local historic societies that may have responsibilities for historic properties and that may want to participate as consulting parties for the Central Valley Wye alternatives. None of these organizations has responded with acceptance of the invitation to consult, and thus there are no official consulting parties at this time. Table 3.17-2 also summarizes ongoing outreach efforts and agency consultation.

Table 3.17-2 Summary of Outreach Efforts

Entity	Action	Date	Response
Heritage Preservation Commission, Chowchilla	Letter from Authority to Consulting/Concurring Party	June 28, 2013, and May 26, 2015	None
The Milliken Museum Society of Los Banos	Letter from Authority to Consulting/Concurring Party	June 28, 2013, and May 26, 2015	None

³ The EINU components in Stanislaus and Fresno Counties include updates to existing infrastructure in areas of previous disturbance. There are no impacts on historic resources and accordingly no consultation was conducted.

Entity	Action	Date	Response
Merced County Historical Society/Merced County Courthouse Museum	Letter from Authority to Consulting/Concurring Party	May 26, 2015	None
Madera County Historical Society	Letter from Authority to Consulting/Concurring Party	May 26, 2015	None
Fairmead Community and Friends; Preserve Our Heritage	Public meeting for the Central Valley Wye	December 8, 2016	None
Bureau of Reclamation	Email from Bureau of Reclamation; concurs on Central Valley Wye FOE	December 6, 2017	None
FRA	Email from FRA; concurs on Central Valley Wye FOE	March 8, 2018	None
SHPO	Letter from SHPO; concurs on the Central Valley Wye FOE that was sent on March 16, 2018, and agrees that amending the BETP and ATP in accordance with Stipulation V.D of the Memorandum of Agreement is sufficient to address the adverse effects	April 6, 2018	None
SHPO	Letter from SHPO; agrees with sufficiency of the proposed measures to minimize adverse effects to the Robertson Tree Row in the draft BETP No. 3 for MF (CV Wye)	July 23, 2018	None
SHPO	Letter to SHPO; Authority responds to SHPO's query received July 23, 2018, regarding implementation of review process described in memo for Robertson Tree Row.	July 27, 2018	None

Source: Authority and FRA, 2016a; Authority, 2019

Authority = California High-Speed Rail Authority

ATP = archaeological treatment plan

BETP = built environment treatment plan

CV Wye = Central Valley Wye

FOE = Finding of Effect

FRA = Federal Railroad Administration

MF = Merced to Fresno

SHPO = State Historic Preservation Officer

3.17.4.2 Native American Outreach and Consultation

The input and participation of the Native American tribal community are important elements of the cultural resources investigation for the California HSR program. As required by the HSR Section 106 PA (Appendix 3.17-B), and in accordance with the Authority's tribal engagement policies, outreach to tribal governments was initiated early in the project planning process to begin obtaining input from the tribal community regarding potential sensitive Native American cultural resources in proximity to the Central Valley Wye alternatives. This section presents a summary of the tribal outreach efforts conducted by the Authority and the FRA for the program with an emphasis on tribal outreach and consultation for the Central Valley Wye alternatives. A comprehensive log of the tribal outreach and consultation efforts conducted for the Central Valley Wye alternatives can be found in Appendix 3.17-C.

The Authority and FRA began the first phase of a tiered environmental review process for the statewide HSR program in 2001 and completed the *Final Program EIR/EIS for the Proposed California High-Speed Train System* (Authority and FRA 2005) in 2005. During that period, the

Authority and FRA consulted with the California Native American Heritage Commission (NAHC) and initiated statewide outreach efforts to tribal governments whose ancestral tribal territories lay within the HSR project areas to identify tribal concerns regarding potential impacts on Native American cultural resources and/or areas of cultural sensitivity. Such outreach efforts consisted of searches of the NAHC's Sacred Lands File, sending outreach letters to tribal governments including information about the project and requesting input from the tribal community, and a series of face-to-face informational meetings about the project to foster tribal awareness and encourage participation in the program. In approving the *Final Program EIR/EIS for the Proposed California High-Speed Train System* in 2005, the Authority and FRA selected certain corridors/general alignments and general station locations for further study, incorporated mitigation strategies and design practices, and specified further measures to guide the development of the HSR system at the site-specific level of environmental review to avoid, minimize, or mitigate potential adverse environmental impacts. In 2010, the Authority and FRA conducted statewide outreach to tribal governments to initiate government-to-government consultation for each of the individual HSR project sections and invite the tribes to participate in the process. Early tribal outreach efforts conducted for both the Merced to Fresno and the San Jose to Merced project sections, which included the Central Valley Wye alternatives, date back to 2009. Tribal outreach specifically for the revised Central Valley Wye alternatives was initiated in 2013 (see Appendix 3.17-C).

The Authority relies upon the NAHC to provide contact information for tribal governments with whom the Authority and FRA may consult for the HSR project areas and to conduct searches of the NAHC Sacred Lands File to determine the potential presence of sacred Native American cultural resources. The NAHC Sacred Lands File searches conducted for the Central Valley Wye alternatives did not indicate the presence of sacred tribal sites that could be affected by the Central Valley Wye alternatives.⁴ Based on the tribal contact lists provided by the NAHC, at least 20 tribal governments were contacted to seek input and identify any tribal concerns about potential impacts on cultural resources within the Central Valley Wye alternatives. A comprehensive list of tribal governments contacted for the Central Valley Wye alternatives can be found in Appendix 3.17-C. To date, eight tribes, both federally recognized and nonfederally recognized tribal governments, have opted to participate in the project as Section 106 Consulting Parties, as follows:

- Chowchilla Tribe of Yokuts – Chairperson Bart Topping
- North Valley Yokuts – Chairperson Katherine Erolinda Perez
- North Fork Mono Tribe – Chairperson Ron Goode
- North Fork Rancheria – Chairperson Maryann McGovran
- Picayune Rancheria of the Chukchansi Indians – Chairperson Claudia Gonzales
- Santa Rosa Rancheria Tachi Tribe – Chairperson Rueben Barrios
- Table Mountain Rancheria – Chairperson Leanne Walker-Grant
- Tule River Indian Tribe – Chairperson Neil Peron

The Authority and FRA hosted a tribal information meeting in July 2014 to present the tribes an overview of the HSR program and to provide information about the Central Valley Wye alternatives process. In August 2014, the Authority hosted the tribes in a tour of the Central Valley Wye alternatives to enable the tribes to view the landscape in which impacts on cultural resources could potentially occur. In accordance with the framework provided in Attachment E of the statewide Section 106 PA, the Authority and FRA are actively engaged in ongoing communications and consultations with the consulting party tribes at key decision points in the project delivery process, including numerous meetings, letters, emails, and phone calls with tribal representatives regarding the status of the project and the cultural resources investigation for the Central Valley Wye alternatives. The Authority and FRA encouraged the involvement of the tribal consulting parties in the cultural resources investigation, including the participation of tribal representatives in the pedestrian archaeological field surveys; the contribution of the tribes' own ethnohistories for

⁴ The NAHC Sacred Lands File searches and outreach with tribal organizations conducted as part of the environmental process for the Central Valley Wye alternatives did not identify any sacred lands; therefore, the Central Valley Wye alternatives would not conflict with the requirements set forth in USEO 13007, Indian Sacred Sites.

inclusion in the ASR; cultural resources data-sharing with the tribes to facilitate the inventory and identification effort; tribal review and comment on the cultural resources technical reports; tribal review and comment on any APE modifications; tribal participation in the development of the Merced Fresno MOA (Authority and FRA 2012d) and ATP to determine cultural resources treatment measures and mitigation; and tribal monitor participation during construction activities in culturally sensitive areas. A comprehensive log of the tribal outreach and consultation efforts conducted for the Central Valley Wye alternatives can be found in Appendix 3.17-C.

For more information regarding responses received during initial tribal coordination activities, please refer to the Central Valley Wye alternatives ASR, Attachment B: Correspondence (Authority and FRA 2016b).

Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in property or rights held in trust by the United States for Indian Tribes or individual Indians. The closest ITA to the Central Valley Wye alternatives is in Madera County, approximately 47 miles from the Central Valley Wye alternatives. Given the scope, scale, and extent of the activities necessary for construction and operations of the Central Valley Wye alternatives, there will be no effect on ITAs.

3.17.5 Methods for Evaluating Impacts

The evaluation of impacts on cultural resources is a requirement of NEPA and CEQA. The following sections summarize the RSAs and the methods used to analyze impacts on cultural resources.

The separate assessment of adverse effects required under Section 106 of the NHPA was documented in the *Merced to Fresno Section: Central Valley Wye Final Supplemental Section 106 Findings of Effect Report* that was approved by SHPO in 2018 (Authority and FRA 2018). A brief statement of the Section 106 findings is included in Section 3.17.7, Environmental Consequences, following the CEQA Conclusions at the end of each impact discussion. These statements use the terms *no effect*, *no adverse effect*, and *adverse effect* to describe the Section 106 findings. These terms and findings have no direct correlation to similar terms and determinations of impact made for CEQA, because they are made in accordance with the regulations for a separate federal law. For further discussion of the criteria used in assessing Section 106 effects, refer to the Section 106 Finding of Effect.

3.17.5.1 Definition of Resource Study Area/Area of Potential Effect

As defined in Section 3.1, Introduction, RSAs are the geographic boundaries in which the environmental investigations specific to each resource topic were conducted. The RSAs for the purposes of the NEPA and CEQA analysis are the same as APEs for the Section 106 evaluation, and are hereafter referred to as the APE. An APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 C.F.R. § 800.13(d)). Consequently, the APE is all-encompassing in terms of considering potential impacts on cultural resources, including direct and indirect impacts, for both construction and operations activities, and for temporary and permanent impacts. The APEs for architectural history and archaeology were delineated in accordance with Attachment B of the PA.

The APEs address all potential impacts on cultural resources that could be caused by the Central Valley Wye alternatives, including the area of direct physical impact as well as indirect impacts more distant in time or space, such as visual or vibration impacts. The APEs were used to perform cultural resources impacts analysis under NEPA and CEQA in determining if actions implementing the Central Valley Wye alternatives would alter those characteristics that convey the historic significance of a resource. The archaeological APE and the historic architectural APE are collectively referred to as the Central Valley Wye alternatives APE, or simply the APE, except where the text is explicitly discussing archaeology or historic architecture distinct from each other.

A portion of the Central Valley Wye alternatives APE located near the city of Madera along State Route (SR) 99 overlaps with the APE for the Merced to Fresno Section. Only one historic cultural resource, the Robertson Boulevard Tree Row, is located in the APE overlap area and is described and evaluated in Section 3.17 of the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-9 through 3.17-81). Compliance with Section 106 and CEQA with respect to historic resources, including resources within the overlapping APEs, was completed as part of the environmental review process for the Merced to Fresno Final EIR/EIS. The Central Valley Wye alternatives APE incorporates those properties in the overlapping APEs that were inventoried, evaluated, and concurred upon by the SHPO (Office of Historic Preservation [OHP] 2012, 2016, 2017) in the Merced to Fresno Section APE.

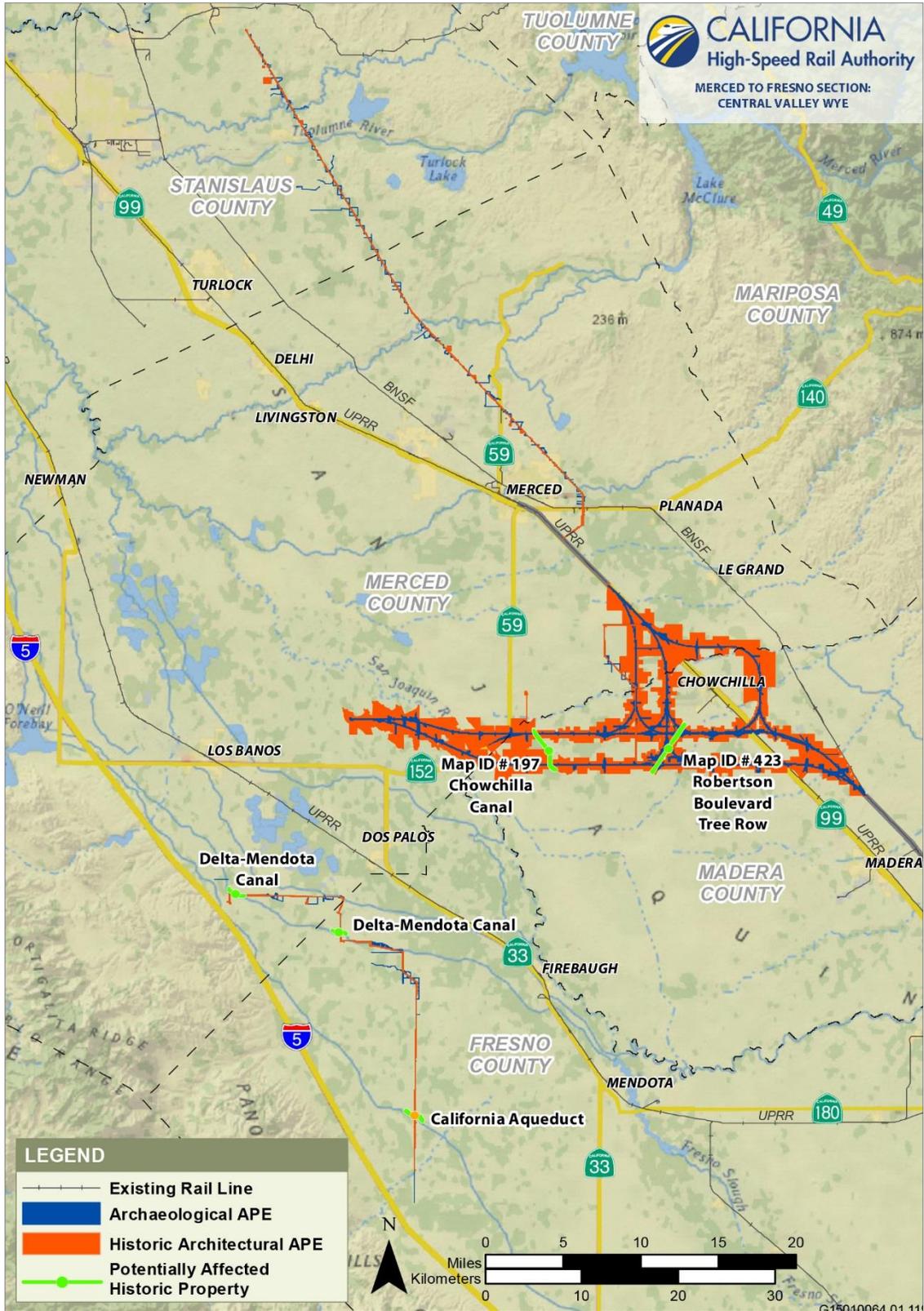
The need for expansion of the Central Valley Wye alternatives APE was identified in 2016 to address the EINU. Consequently, the Central Valley Wye alternatives archaeological and historic architecture APEs were amended to include the area of direct physical impact of the undertaking as well as indirect impacts, such as visual or vibration impacts as related to the EINU. Addenda to the HASR and ASR were prepared in October 2016 (Authority and FRA 2016c and Authority and FRA 2016a) and November 2019 (Authority 2019a, 2019b). Figure 3.17-1 provides an overview of the combined final archaeological and historic architectural APEs along with the locations of the historic properties identified.

Archaeological Area of Potential Effect

According to Attachment B of the PA, the APE for archaeological properties is typically established based on an undertaking's potential for direct impacts from ground-disturbing activities. Therefore, in following this guidance, the archaeological APE for the Central Valley Wye alternatives was delineated to include the area of ground proposed to be disturbed before, during, or after construction of the undertaking, including, but not limited to geotechnical drilling, grading, cut-and-fill, easements, staging/laydown areas, utility relocations, borrow sites, and biological mitigation areas. The archaeological APE used for the baseline analysis for this section was established using the project design information obtained in February 2016 and EINU-related revisions in 2019.

Because the Central Valley Wye alternatives would generally pass through land that is largely farmland and does not have an existing rail system (i.e., large areas do not have currently established infrastructure and access points), the archaeological APE is broadly considered to include areas of potential staging, access roads, and whole parcels that would ultimately be purchased. In areas of larger proposed construction (such as large overcrossings), an additional 300 feet was included in the archaeological APE on both sides of the proposed rail line to provide flexibility for contractor needs, such as access and staging. In addition, the project footprint of all water crossings was expanded to include possible temporary diversion areas (while new crossings are being constructed), as well as utility relocations areas. In areas planned for parking and substations, the archaeological APE includes newly acquired land. This portion of the archaeological APE consists of a 75-foot buffer or 150-foot corridor surrounding the power/transmission lines, a 15-foot buffer or 30-foot corridor surrounding the centerline of existing dirt roads and new temporary access roads, as well as the full extent of proposed structure work areas and staging areas.

The vertical extent of the archaeological APE for at-grade construction extends from the existing ground surface to the final depth necessary for the railbed and for footings or foundations of structural components, which would be determined during final Central Valley Wye alternatives design. The vertical extent of the electrical interconnections installation is anticipated to range from a few inches, as in the case of minor blading or grading of access roads, to 16 feet, the maximum required auger depth for the installation of new light-duty steel poles. As the Central Valley Wye alternatives design is refined, revisions to the APE may be required. Any necessary changes would be made in accordance with Stipulation VI.A and Attachment B of the PA.



Source: Authority and FRA, 2013, 2016b, 2016c, 2016d; Authority 2019a, 2019b

NOVEMBER 22, 2019

Figure 3.17-1 APE Overview with Historic Properties Locations

Historic Architectural Area of Potential Effect

The historic architectural APE for the Central Valley Wye alternatives was established in accordance with Attachment B of the PA and in consideration of the rural agricultural setting of Merced and Madera Counties. Historic architectural resources include all built-environment resources including buildings, structures, objects, landscapes, and districts, comprised of non-archaeological resources. The historic architectural APE was delineated to inventory and evaluate all possible built-environment resources (50 years of age at the time of survey) that may be directly or indirectly affected by the Central Valley Wye alternatives through construction or operations activities. Impacts on historic architectural properties include, but are not limited to, demolition of buildings or structures, property takes, and road closures, changes to property access and a property's historic setting, alteration of historic viewsheds, noise, and vibration that lead to physical damage.

The introduction of a rail line through this area is only likely to be visible from properties on parcels adjacent to the rail corridor, because most parcels are large and the terrain is generally flat. The new rail line may introduce temporary changes to the type and volume of noise during construction; noise levels generated during operations of the HSR would extend a maximum of 1,200 feet from the right-of-way. Vibration levels related to operations of the electric trains would extend a maximum of 275 feet from the right-of-way. (Section 3.4 provides more details on the methods, thresholds, and analysis of noise and vibration.)

Consequently, the historic architectural APE includes all legal parcels intersected by the proposed HSR right-of-way for all Central Valley Wye alternatives, including construction of proposed ancillary features (such as grade separations or maintenance facilities), construction staging areas, utility relocations, easements, and biological mitigation areas. The historic architectural APE includes the extent of potential impacts from both construction activities and operations. For upgrades to existing linear infrastructure, the historic architectural APE was set at the existing right-of-way line (or parcel line) because there would not be a potential to cause indirect impacts on built resources. The methodology for establishing the historic architectural APE for the Central Valley Wye alternatives is consistent with the Section 106 PA, Attachment B, and was refined in consultation with the Authority.

The historic architectural APE presented in this Final Supplemental EIR/EIS reflects the project footprint for each of the Central Valley Wye alternatives as of November 2019. As the Central Valley Wye alternatives design is refined, modifications to the historic architectural APE may be required. Any necessary revisions would be made in accordance with the Stipulation VI.A and Attachment B of the Section 106 PA.

3.17.5.2 Impact Avoidance and Minimization Features

As noted in Section 2.2.3.7, Impact Avoidance and Minimization Features, the Central Valley Wye alternatives would incorporate standardized IAMFs to avoid and minimize impacts. The Authority would incorporate IAMFs during project design and construction and, as such, the analysis of impacts of the Central Valley Wye alternatives in this section factors in all applicable IAMFs. Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features, provides a detailed description of IAMFs that are included as part of the Central Valley Wye alternatives design. IAMFs applicable to cultural resources include:

- CUL-IAMF#1: Geospatial Data Layer and Archaeological Sensitivity Map
- CUL-IAMF#2: Worker Environmental Awareness Program (WEAP) Training Session
- CUL-IAMF#3: Preconstruction Cultural Resource Surveys
- CUL-IAMF#4: Relocation of Project Features when Possible
- CUL-IAMF#5: Archaeological Monitoring Plan and Implementation
- CUL-IAMF#6: Preconstruction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage

- CUL-IAMF#7: Built Environment Monitoring Plan
- CUL-IAMF#8: Implement Protection and/or Stabilization Measures

3.17.5.3 Methods for NEPA and CEQA Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts from implementing the Central Valley Wye alternatives on cultural resources. These methods apply to both NEPA and CEQA unless otherwise indicated. Refer to Section 3.1.5.4, Methods for Evaluating Impacts, for a description of the general framework for evaluating impacts under NEPA and CEQA. As described in Section 3.17.1, Introduction, and in the following discussions, the Authority has applied the same methods and many of the same data sources from the Merced to Fresno Final EIR/EIS to this Final Supplemental EIR/EIS. Refer to the Central Valley Wye alternatives ASR (Authority and FRA 2016b) and the HASR (Authority and FRA 2016d) for more information regarding the methods, evaluation criteria, and data sources used in this analysis. Section 3.4 and Section 3.16 describe the methods used to analyze indirect impacts on cultural resources from damage caused by vibration, disturbance caused by noise, or a change in visual context and setting. Laws, regulations, and orders (see Section 3.17.2) that regulate cultural resources were also considered in the evaluation of impacts on prehistoric archaeological resources, historic archaeological resources, and historic architectural resources.

The analysis considers both direct and indirect impacts on cultural resources that could result from construction and operations of the Central Valley Wye alternatives. Section 3.17.5.1, Definition of Resource Study Area/Area of Potential Effect, describes the geographic area in which these impacts were considered. The analysis also considers the permanent impacts from implementing the Central Valley Wye alternatives and its components, and the temporary impacts of construction activities. Both temporary and permanent impacts are discussed together because the temporary construction activities necessary to permanently introduce the Central Valley Wye alternatives have the same potential to cause direct and indirect impacts on cultural resources.

Prehistoric and Historic Archaeological Resources

Archaeologists meeting the professional qualifications under the Secretary of Interior's Standards for Archaeologists and meeting the definition of qualified investigator in accordance with the Section 106 PA conducted the identification and evaluation of archaeological resources for the Central Valley Wye alternatives. The archaeological resources for the Central Valley were identified using a combination of records searches and field surveys.

Records Search

In June 2012, background records searches were conducted at the two California Historical Resource Information System Information Centers that cover a 0.5-mile search area extending from the Central Valley Wye alternatives APE: the Central California Information Center for Merced County, and the Southern San Joaquin Valley Information Center for Madera County. Subsequent records searches were conducted in December 2015, March 2016, and October 2019.

Information obtained from the record searches included geographic locations of cultural resources previously recorded within the record search area, the site records, and a list of previous studies conducted within the record search area. In 2014, each U.S. Geological Survey topographic quadrangle within the APE was geo-referenced to real-world coordinates and placed in a geographic information system (GIS) environment to allow for accurate digitization of the individual resources recorded on the maps.

The following information files were also reviewed:

- NRHP-Listed Properties and Determined Eligible Properties
- Directory of Properties in the Historic Property Data File for Merced, Madera, Fresno and Stanislaus Counties
- California Inventory of Historic Resources

- California Points of Historical Interest
- California Historical Landmarks Interest
- Handbook of North American Indians, Volume 8, California (Heizer 1978)
- Sanborn Maps in urban areas
- Historic U.S. Geological Survey quadrangles

The following results include the archaeological APE for the Central Valley Wye alternatives. The records searches identified 61 cultural resource studies that have been conducted within the archaeological APE. The boundaries of the 61 studies were digitized and converted into GIS shapefiles with survey data (i.e., study number, title, and type of study) noted in the attributes table and overlaid onto the APE. The records searches identified one previously recorded site within the APE and an additional 14 archaeological sites and one isolated archaeological find within 0.5 mile of the APE.

In July 2016, project archaeologists requested cultural resources records searches for the Central Valley Wye alternatives potential biological mitigation areas (Blasingame Ranch, Fenston Ranch, and Roen-Le Grand Ranch). The searches were conducted at the California Historical Resources Information System Central California Information Center for Merced and Mariposa Counties and the Southern San Joaquin Valley Information Center for Madera and Fresno Counties. Eighteen studies were reported previously in the biological mitigation areas, and three previous studies were reported within a 0.25-mile buffer of the biological mitigation areas. Studies included cultural resources surveys and historic resources evaluations. The records searches identified nine resources in the biological mitigation areas, including historic and prehistoric archaeological sites, historic features and structures, and an historic district. Resource P-24-636, the Gwin Post Office (HRI 5333-2), is a California Point of Historical Interest. In total, 11 resources were identified outside of the biological mitigation areas but in the 0.25-mile buffer, including historic and prehistoric archaeological sites and historic-era structures. None of the previously reported resources is listed in the CRHR or NRHP. These potential biological mitigation areas are not in the Central Valley Wye alternatives APE. If they are selected, these areas would be studied in accordance with the PA. None of the resources in these biological mitigation areas is further discussed in this chapter since they have not yet been surveyed and records search results have not been field verified.

Field Survey Methods

Archaeologists conducted pedestrian field surveys to identify prehistoric and historic archaeological resources within the APE, in addition to the archival research and outreach efforts previously discussed. For the current Central Valley Wye alternatives design (as of November 2019), the combined archaeological APE encompasses 10,605 acres. Pedestrian field surveys occurred on 2,188 acres (76 percent) of the 2,888 total acres where permission to enter was granted. The ground surface was visually inspected for any evidence of cultural deposits using closely spaced, 15-meter parallel transects. Areas with disturbed ground surfaces were observed during field survey, including areas subsumed by active canals or drainages, and heavily graded roads that would likely require no improvement. Areas with disturbed ground surfaces do not preclude intact, buried cultural resources. Three of the nine previously recorded resources are located in close enough proximity to the APE to warrant a closer inspection to determine whether surface evidence of the sites extends beyond the previously recorded boundaries. Archaeological survey crews used 5-meter transects to inspect the APE visually near these previously recorded resources, and concluded that no evidence of archaeological deposits is present.

Three previously unrecorded archaeological sites and four isolated archaeological finds were identified during the pedestrian field surveys of the APE. One of the three archaeological sites, which is referred to by the identification code WW-01, is a prehistoric lithic scatter and assumed eligible for listing. Per the Section 106 PA Attachment D, two of the archaeological sites are exempt from evaluation because they are historic-era isolated refuse scatters, and all four

isolated finds are categorically exempt from evaluation because they are isolated historic-era artifacts.

Stipulation VI.E of the Section 106 PA (CUL-IAMF#3) provides for phased identification in situations where identification of historic properties cannot be completed, for instance, because of lack of permissions to enter private properties. In such cases, development and implementation of a post-review identification and evaluation effort are stipulated in the Merced Fresno MOA (Authority and FRA 2012d) so that the historic properties identification effort is completed once property access is obtained.

Details of the pedestrian field surveys are documented in the Central Valley Wye alternatives ASR (Authority and FRA 2016b) and in ASR addendum 1 for electrical interconnections (Authority and FRA 2016c). Field inventory would be completed for previously unsurveyed areas of the APE for the selected alternative when legal access has been granted following the issuance of the Record of Decision.

Historic Architectural Resources

Architectural historians meeting the professional qualifications under the Secretary of Interior's Standards for Architectural History and meeting the definition of qualified investigator in accordance with the Section 106 PA conducted the identification and evaluation of historic architectural resources (also referred to as built-environment resources) for the Central Valley Wye alternatives. The historic architectural resources for the Central Valley were identified using a combination of background research and intensive field surveys conducted from vehicles in the public right-of-way or on foot for parcels where visibility was limited and rights of entry were obtained.

Background Research

Project qualified investigators conducted research in conjunction with the field survey and refined those research efforts in accordance with the results of the survey. Project qualified investigators also undertook property-specific research to confirm construction dates or to narrow estimated dates, using Google Earth Pro U.S. Parcel Data, county maps and U.S. Geologic Survey topographic maps, county assessor records (when available), historic aerial photographs, and other primary and secondary sources. Research on the historic themes and survey population was conducted in the following repositories and local agencies:

- Merced County:
 - Merced County Assessor
 - Merced County Planning & Community Development Department
 - Merced County Library
 - City of Merced Planning Division
 - Merced County Courthouse Museum/Merced County Historical Society
- Madera County:
 - Madera County Assessor's Office
 - City of Madera Planning Department
 - Madera County Library
 - Chowchilla Library
 - The Milliken Museum, Los Banos
- Fresno County:
 - Fresno County Assessor
- Stanislaus County:
 - Stanislaus County Assessor
- Statewide sources:
 - California History Room, California State Library, Sacramento
 - Online Archive of California (www.oac.cdlib.org)
 - Los Angeles Public Library, Online Database Collections

- Los Angeles Public Library, Central Library
- Earth Sciences and Map Library at University of California, Berkeley
- Map and GIS Data Collection, Shields Library, University of California, Davis
- Map Room of Earth Sciences Library, University of California, Berkeley
- The California Digital Newspaper Collection at the Center Bibliographic Studies and Research, University of California, Riverside

Research also included reviews of California Historical Resource Information System listings (Records Search findings); California Historical Landmarks and Points of Historical Interest publications and updates; and NRHP, CRHR, and local register listings; as well as published and digital versions of U.S. Census Bureau information (available through www.Heritage.com), including population schedules (1850–1940). In addition, research included reviews of previous cultural resources reports, historic-period maps, aerial photography, public documents such as deeds and property assessment records (when available), along with various newspaper and journal articles. Research in the rural areas of Merced and Madera Counties is challenging and sometimes unfruitful because commonly utilized property-specific research tools such as city directories and Sanborn maps were not published for properties outside of city limits. All property evaluations were based on available data and professional expertise.

Merced to Fresno Eligibility Determinations

As noted earlier, there are properties in the Central Valley Wye alternatives APE that were originally recorded and evaluated as part of the work conducted for the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-9 through 3.17-65). The SHPO concurred with the eligibility findings for these properties in 2012 (OHP 2012). The Central Valley Wye alternatives APE incorporates the properties that were inventoried, evaluated, and concurred upon by the SHPO in the Merced to Fresno APE; no new survey or evaluation efforts were conducted for the properties previously studied in the Merced to Fresno Section APE that overlap with the Central Valley Wye alternatives APE.

Field Survey Methods

Project qualified investigators for historic architectural resources conducted intensive pedestrian field survey and field research for preparation of the Central Valley Wye HASR intermittently between April 2010 and July 2016. Consistent with the Section 106 PA, qualified investigators conducted an intensive-level survey of known historic properties and historic architectural resources that were 50 years of age or older at the time of the survey.

The historic architectural survey population consists of 1,005 parcels that fall within the historic architectural APE based on the November 2019 project footprint. The surveys included known resources identified through the record search and through studies conducted for the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a: pages 3.17-12 through 3.17-14). Because the APE includes all parcels that intersect the project footprint, all parcels in the APE have been documented in the Central Valley Wye HASR and addenda (Authority and FRA 2016a, 2016d; Authority 2019b). This includes properties that contained buildings or structures that were not yet 50 years of age (built after 1965), were vacant, or were agricultural fields. Properties in the APE that contained buildings or structures 50 years old or older at the time of surveys were subject to intensive-level surveys and subsequent detailed research, and recordation in the Central Valley Wye HASR and addenda (Authority and FRA 2016a, 2016d; Authority 2019b). The survey population was established between 2010 and 2019 by considering the following sources of information about each parcel:

- Proximity of property to project-related activities
- Record search data
- Windshield surveys and visual inspection by qualified investigators

- Google Earth Pro U.S. Parcel Data indicating a property may contain buildings at least 50 years old⁶
- Historic maps were analyzed to evaluate linear resources (water conveyances and railroads) as well as individual properties containing buildings 50 years old or older

Most field surveys and inventories were conducted from public rights-of-way. Because of this limited access and the size of many of the subject parcels, not all buildings and structures were adequately visible for survey purposes. Stipulation VI.E of the Section 106 PA allows for phased identification of historic properties, recognizing property owner permission may be required to adequately assess the built environment and archaeological resources, and such permission may not be granted until later stages of the project.

A total of 1,005 parcels are located in the APE. Table 3.17-3 identifies NRHP- and CRHR-eligible resources, ineligible resources, and parcels that were exempt from evaluation pursuant to criteria in Attachment B of the PA. Table 3.17-4 provides such a summary from the ASRs.

Table 3.17-3 Summary of Evaluation Efforts in the Historic Architectural Survey Reports

Type of Evaluation/Survey Status	Central Valley Wye Records Search Results	Merced to Fresno Section Results ¹	Central Valley Wye Survey Results ⁴	Total Number of Properties
NRHP and CRHR Eligible ²	0	1	3	4
NRHP and CRHR Not Eligible ²	0	24	159	183
“CEQA-Only” Cultural Resources ^{2, 3}	0	0	0	0
Streamlined Documentation (Not Eligible for listing in the NRHP or CRHR) ²	0	13	24	37
Phased ID Required ²	0	0	67	67
Vacant, Agricultural, or No Effect Parcels	0	0	421	421
Exempt Properties: properties exempt from evaluation because they are not of age or meet one or more of the criteria for exempt properties as stated in the Section 106 PA	2	0	291	293
Total Number of Properties in the APE (Survey Population)	2	38	965	1,005
Total Properties in the APE that require recordation (i.e., properties containing buildings or structures constructed in 1965 or earlier and cannot be exempted from NRHP/CRHR evaluation, including properties that require Phased ID) ²	0	38	253	291

Source: Authority and FRA, 2016a, 2016d; Authority, 2019b

¹ Merced to Fresno Section results obtained from Authority and FRA 2012a, 2012b.

² Category that contributes to the portion of the APE survey population requiring recordation in the HASR and addenda.

³ “CEQA-only” resources do not meet the significance criteria for listing in the NRHP, but may meet either the CRHR, or be listed in a local register and therefore may qualify as historic resources for the purposes of the California Environmental Quality Act. See Section 2.3, “CEQA-Only” Cultural Resources (Authority and FRA 2016d).

⁴ Updated since publication of the Draft Supplemental EIR/EIS to reflect EINU changes as described in Section 2.2.4.3.

APE = area of potential effect

NRHP = National Register of Historic Places

⁶ Please note, Qualified Investigators found that the year-built data for Merced and Madera Counties were not always accurate. Consequently, all parcels within the APE containing buildings have been visually inspected to verify that they contain historic-era resources.

CRHR = California Register of Historical Resources

CEQA = California Environmental Quality Act

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

Table 3.17-4 Summary of Evaluation Efforts in the Archaeological Survey Reports

Type of Evaluation/Survey Status	Central Valley Wye Records Search Results	Central Valley Wye Survey Results	Electrical Interconnections Records Search Results	Electrical Interconnections Field Survey Results	Total Number of Properties
Resources assumed eligible for inclusion in the NRHP and/or CRHR	3	0	0	1	4
Resources exempt from evaluation as stated in the Section 106 PA	0	0	1	6	7
Total Number of Resources in the APE (Survey Population)	3	0	1	7	11

Source: Authority and FRA, 2016a, 2016d; Authority, 2019a

APE = area of potential effect

NRHP = National Register of Historic Places

CRHR = California Register of Historical Resources

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

Parcels Containing Properties at Least 50 Years Old

Of the 1,005 properties in the Central Valley Wye alternatives APE survey population, 38 properties contained buildings or structures built in 1965 or earlier that were previously evaluated in the Merced to Fresno Section HASR (Authority and FRA 2012b) and in the *Merced to Fresno Section Historic Property Survey Report* (Authority and FRA 2012c). Of these, one property, the Robertson Boulevard Tree Row, was previously determined eligible for listing in the NRHP under Criterion A in the area of community development and Criterion C in the area of landscape architecture. The other 37 properties have been determined ineligible for listing in the NRHP or CRHR. This includes 24 properties evaluated and documented on Department of Parks and Recreation 523-series forms and 13 properties evaluated and documented on streamline documentation forms.

A total of 248 properties were addressed in the current Central Valley Wye alternatives study (Authority and FRA 2016a, 2016d; Authority 2019b) that were not previously addressed in the Merced to Fresno Section HASR or Historic Property Survey Report. One property, the Chowchilla Canal, is eligible for listing in the NRHP and CRHR. The Chowchilla Canal is individually eligible for listing in the NRHP at the local level of significance under NRHP Criterion A and CRHR Criterion 1 based on its association with an extensive, early irrigation system managed by the Miller & Lux Company in the San Joaquin Valley.

Of the remaining 247 properties, 180 properties containing buildings or structures that were at least 50 years old located in the Central Valley Wye alternatives APE were evaluated and do not meet the criteria for listing in the NRHP or the CRHR. This includes 157 properties evaluated and documented on Department of Parks and Recreation 523-series forms and 23 properties evaluated and documented on streamline documentation forms. A total of 67 properties

containing buildings or structures that were at least 50 years old located in the Central Valley Wye alternatives APE require phased identification.

Parcels Exempt from Evaluation

Of the 1,005 parcels in the survey population, 714 parcels were exempt from evaluation (as vacant, agricultural or no effect parcels; as parcels that contained buildings constructed in 1965 or after (not yet 50 years of age at the time of survey); or properties that met one of the exemption criteria in the Section 106 PA Attachment D. None of the historic architectural resources in the APE constructed in or after 1965 (i.e., were less than 50 years old at the time of survey) have potential for exceptional historic significance, and thus would not satisfy the NRHP consideration for properties that may have achieved historic significance within the last 50 years (NRHP Criteria Consideration G). Accordingly, these resources did not require further study.

3.17.5.4 Determining Significance under CEQA

CEQA requires that an EIR identify the significant environmental impacts of a project (CEQA Guidelines § 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a significance determination for each impact using a threshold-based analysis (see Section 3.1.5.4). By contrast, under NEPA, significance is used to determine whether an EIS would be required; NEPA requires that an EIS is prepared when the proposed federal action (project) as a whole has the potential to “significantly affect the quality of the human environment.” Accordingly, Section 3.17.10, CEQA Significance Conclusions, summarizes the significance of the environmental impacts on cultural resources for each Central Valley Wye alternative. The Authority uses the following thresholds to determine if a significant impact on cultural resources would occur as a result of the Central Valley Wye alternatives. A significant impact is one that would:

- Cause a substantial adverse change in the significance of a historic resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

Applying these criteria requires an understanding of what makes a resource historically or culturally significant to determine whether the project would cause a “substantial adverse change” to those characteristics. Section 3.17.6, Affected Environment, provides information about the characteristics that convey the significance of known resources and provides a cultural context for archaeological resources that may be present but not yet identified. The CEQA Guidelines provide the following definitions to assist in analyzing impacts on historic or archaeological resources:

- Substantial adverse change in the significance of a historic resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired (CEQA Guidelines § 15064.5(b)(1)).
- The significance of a historic resource would be materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that convey its historic significance or justify its inclusion in, or eligibility for, the NRHP, CRHR, or local registers (CEQA Guidelines § 15064.5(b)(2)(A–C)).

3.17.6 Affected Environment

This section describes the affected environment for cultural resources in the Central Valley Wye alternatives APE, including prehistoric archaeological resources, historic archaeological resources, and historic architectural resources. Generalized contexts for the APE are presented in the Central Valley Wye alternatives ASRs and HASRs. This information provides the context for the environmental analysis and evaluation of impacts.

3.17.6.1 Archaeological Resources

Prehistoric Archaeological Sites in the Area of Potential Effect

The archaeology of the San Joaquin Valley is as varied as the area is extensive, encompassing a full range of hunter-gatherer adaptations from the earliest, technologically conservative, low-density colonizers to the most recent, technologically elaborate, and densely packed populations that were present at historic contact (Rosenthal et al. 2007:page 147). Although certain areas within the valley have more extensive documentation than others, some local sequences have been established through cross-dating of stylistically different artifact types and other cultural patterns, such as burial modes. For more detail on archaeological framework classification, refer to the Central Valley Wye alternatives ASR (Authority and FRA 2016b).

Based on the pedestrian field survey encompassing 21 percent of the 10,586 acres in the archaeological APE, and the records search results from the Southern San Joaquin Information Center and the Central California Information Center, archaeologists identified one prehistoric site assumed to be NRHP-eligible within the archaeological APE of the Central Valley Wye alternatives.

Historic Archaeological Sites in the Area of Potential Effect

Historic archaeological sites in California are locations where human activities were carried out during the historic period, generally defined as beginning with European contact in the mid-18th century and ending approximately 50 years ago. Some of these are of Native American origin during the historic period, but most are the result of Spanish, Mexican, Asian, African-American, or Anglo-American activities. For more detail on the historic archaeological framework, refer to the Central Valley Wye alternatives ASR (Authority and FRA 2016b).

Based on the pedestrian field survey encompassing 21 percent of the 10,605 acres in the archaeological APE, and the records search results from the Southern San Joaquin Information Center and the Central California Information Center, archaeologists identified two historic-era sites within the archaeological APE, both of which are exempt per PA Attachment D.

3.17.6.2 Historic Architectural Resources in the Area of Potential Effect

The historic architectural resources inventoried and evaluated for the Central Valley Wye alternatives reflect the major historic events and trends that occurred within the APE, including rural areas of Merced and Madera Counties. The most common historic architectural property types in the APE are residential farm complexes that date from the mid-1940s to the early 1960s. For more detail on the historic architectural framework, refer to the Central Valley Wye HASR and addenda (Authority and FRA 2016a, 2016d; Authority 2019b).

Historic properties and historic resources are elements of the built environment that are listed in, or eligible for, the NRHP or CRHR, or are considered historic resources for the purposes of CEQA. These elements reflect important aspects of local, state, or national history and can be buildings, structures, objects, sites, districts, or landscapes. Examples of the types of historic properties or historic resources of the built environment within the APE include historic farmsteads, designed landscapes, and canals.

The surveys conducted for the Central Valley Wye alternatives identified 1,005 properties in the APE. Of this survey population, four properties have been determined eligible for inclusion in the NRHP and CRHR, and are further discussed in this Final Supplemental EIR/EIS.

A total of 220 properties were determined ineligible through evaluation or streamlined documentation in accordance with the Section 106 PA, and 714 properties were exempt from evaluation as vacant, agricultural, no effect, and other categorical exemptions stipulated in the Section 106 PA. Thus, 934 resources are not considered historic resources for the purposes of CEQA nor significant historic resources for the purpose of NEPA and are not further addressed in this Final Supplemental EIR/EIS.

A total of 67 properties require phased identification and may require evaluation. Table 3.17-4 and the field survey methods for historic architectural resources under Section 3.17.5.3, Methods for NEPA and CEQA Impact Analysis, provide a more detailed overview of these survey results.

The surveys conducted for the Central Valley Wye alternatives identified four historic built-environment properties that are listed or determined eligible for listing in the NRHP or CRHR, and are reported in the technical reports prepared for the Central Valley Wye alternatives, as required in the Section 106 PA. These four historic properties, Chowchilla Canal, Robertson Boulevard Tree Row, Delta-Mendota Canal, and California Aqueduct are also considered historic resources for the purposes of CEQA.

Figures 3.17-2 through 3.17-5 show the four historic properties in the APE that are listed or determined eligible for listing in the NRHP or CRHR, or that are otherwise considered historic resources under CEQA. The Chowchilla Canal, Robertson Boulevard Tree Row, Delta-Mendota Canal, and the California Aqueduct are described in the following paragraphs.

Chowchilla Canal (Map ID#197 on Figures 3.17-2a and 2b)

The Chowchilla Canal was built in 1872 by Miller & Lux and W. S. Chapman. Figures 3.17-2a and 3.17-2b depict the Chowchilla Canal. The entire canal is approximately 24 miles long, 8 feet wide at the top, and 5 feet deep, with a bottom surface that is V-shaped. The Chowchilla Canal was one of the first large-scale canals constructed in the region and was central to an extensive water conveyance system managed by Miller & Lux. The canal carries water northward from the San Joaquin River at Mendota to its terminus just shy of the Chowchilla River. Originally constructed as an earthen canal, large segments of the Chowchilla Canal were later lined with concrete.

The segment of the canal in the APE is concrete-lined and is approximately 3 miles long, of which approximately 1 mile has been converted to underground pipe. This segment of the canal largely maintains its historic alignment, despite changes to its materials and form. Overall, this segment of the canal system continues to convey its significance as one of the first large-scale canals constructed in the region.

Based on the current evaluation, the Chowchilla Canal is eligible for listing in the NRHP at the local level of significance under NRHP Criterion A and CRHR Criterion 1 for its association with an extensive, early irrigation system that transformed the development of agriculture in the San Joaquin Valley. Essential character-defining features of the Chowchilla Canal that enable the resource to convey its historic significance are its historic alignment and continued ability to transport water. The Chowchilla Canal occurs in all Central Valley Wye alternatives.

Robertson Boulevard Tree Row (Map ID#423 on Figures 3.17-3a through 3.17-3g)

The Robertson Boulevard Tree Row was designated a California Point of Historical Interest in 1989. On March 13, 2012, the SHPO concurred that the resource is eligible for listing in the NRHP and CRHR, as part of the Merced to Fresno Section (OHP 2012). The tree row consists of Canary Island palms, short Mexican fan palms, and oleanders that Orlando Robertson, founder of Chowchilla, planted in 1912 as part of the marketing efforts to attract settlers, specifically farmers, to the area. The row of trees is a recognizable landmark and has a direct association with the initial development of Chowchilla. As such, this resource meets NRHP Criterion A and CRHR Criterion 1 in the area of community development and NRHP Criterion C and CRHR Criterion 3 in the area of landscape architecture.

The 1989 documentation of the Robertson Boulevard Tree Row characterized the length of the resource as 11 miles. Recent investigations on the existing tree row reveal that it extends along both sides of a 9.4-mile stretch of Robertson Boulevard (SR 233), which is an approximately 100-foot-wide two-lane road. The northern portion of the tree row begins at the intersection of Robertson Boulevard and SR 99 (SR 233 exit off SR 99). From that point, the tree row runs through the downtown core of Chowchilla and continues for several miles southwest through a more rural farming area of the town until its terminus at Avenue 18 1/2. The expansion of SR 152 in the mid-1960s resulted in creating an approximate 1,700-foot gap in the tree row. Although a visually prominent feature of the Chowchilla landscape, including roughly 1,000 trees, the row of

palms is not contiguous, and fluctuates between dense stretches of evenly spaced trees, and more sporadic unevenly spaced trees.

Delta-Mendota Canal (Figures 3.17-4a and 3.17-4b)

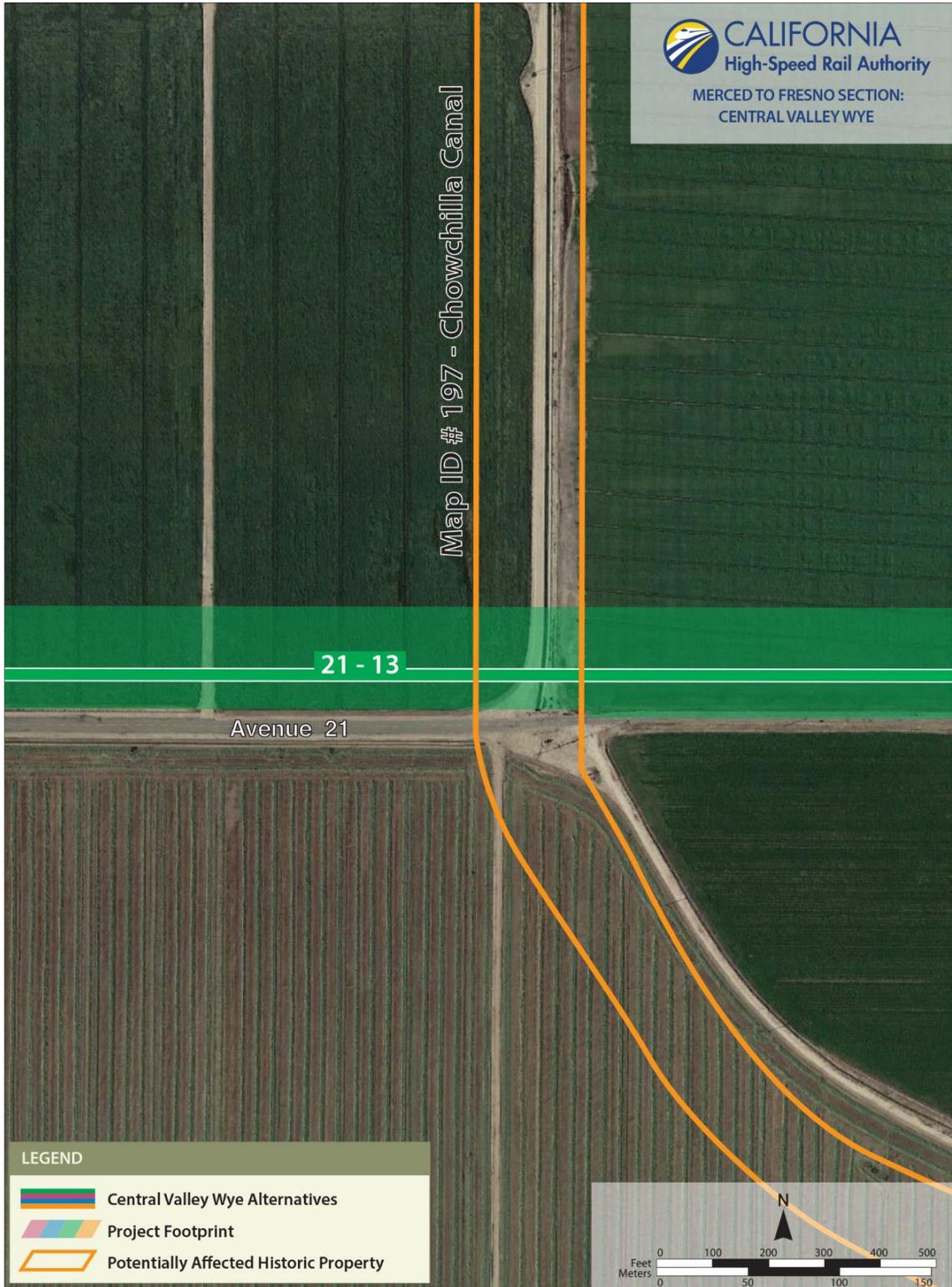
The Delta-Mendota Canal is one of the components of the Central Valley Project (CVP). The canal conveys water from the Tracy Pumping Plant located in the Sacramento-San Joaquin Delta, carrying it south to the Mendota Pool where it replenishes water diverted from the San Joaquin River by the Friant-Kern Canal. The canal was the third of the CVP canals built by the U.S. Bureau of Reclamation beginning in 1946 and completed in 1951. The canal is a trapezoidal concrete-lined canal approximately 120 feet wide and 110 miles long. The CVP was a major engineering project to reduce flooding and redistribute water through California. The main canals associated with the project form the backbone of the system, conveying and delivering water to new water users, and are the primary means of water redistribution.

The segments of the Delta-Mendota Canal in the APE are typical concrete-lined trapezoidal sections. These segments retain their historic alignment and appearance and are able to convey their historic significance within the CVP system. The Delta-Mendota Canal is crossed twice by the existing Site 6—El Nido, Los Banos—Oro Loma—Canal 70 kilovolt (kV) Power Line proposed to be reconducted for all Central Valley Wye alternatives.

California Aqueduct (Figure 3.17-5)

The California Aqueduct is a major engineering accomplishment conveying water from the Sacramento-San Joaquin Delta to Lake Perris in Riverside County. Divided into five divisions, the main line of the aqueduct is 444 miles long and is a concrete-lined canal with wide earthen bands supporting roadways on each side. Construction of the canal by the California Department of Water Resources was begun in 1960 and completed in 1974. The aqueduct was one of the components of the State Water Project that retained Feather River water at Oroville and released it to the Sacramento-San Joaquin River Delta, where it was then pumped into the California Aqueduct for distribution to the south.

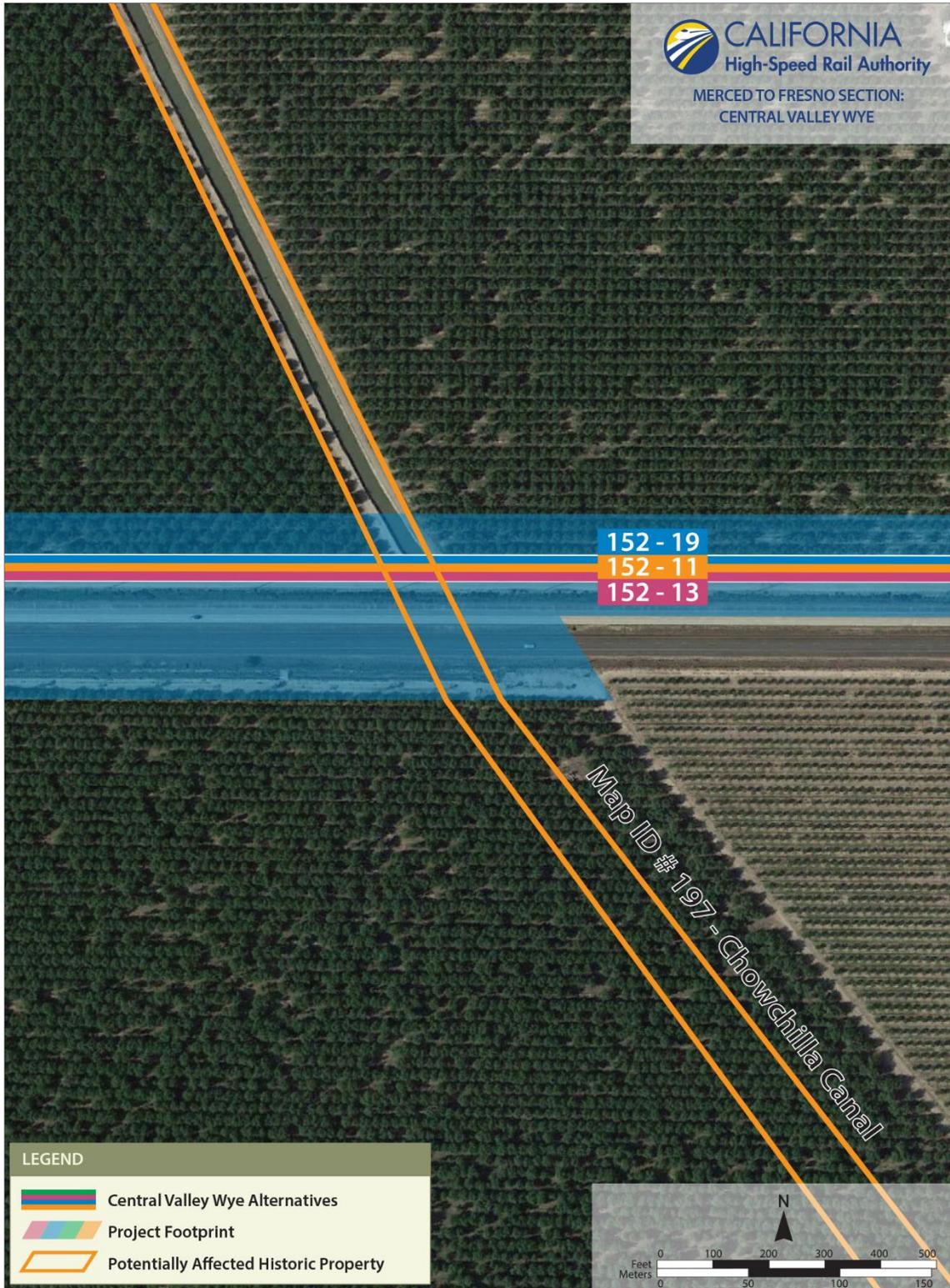
The existing Site 6—El Nido, Oro Loma—Panoche Junction 115 kV Power Line, proposed to be reconducted for all Central Valley Wye alternatives, crosses the California Aqueduct in the San Luis Unit, which is 25–37 feet deep and 50–110 feet wide. This segment is regularly maintained and retains its ability to convey the historic significance of the aqueduct.



Source: Authority and FRA, 2016c

JUNE 15, 2017

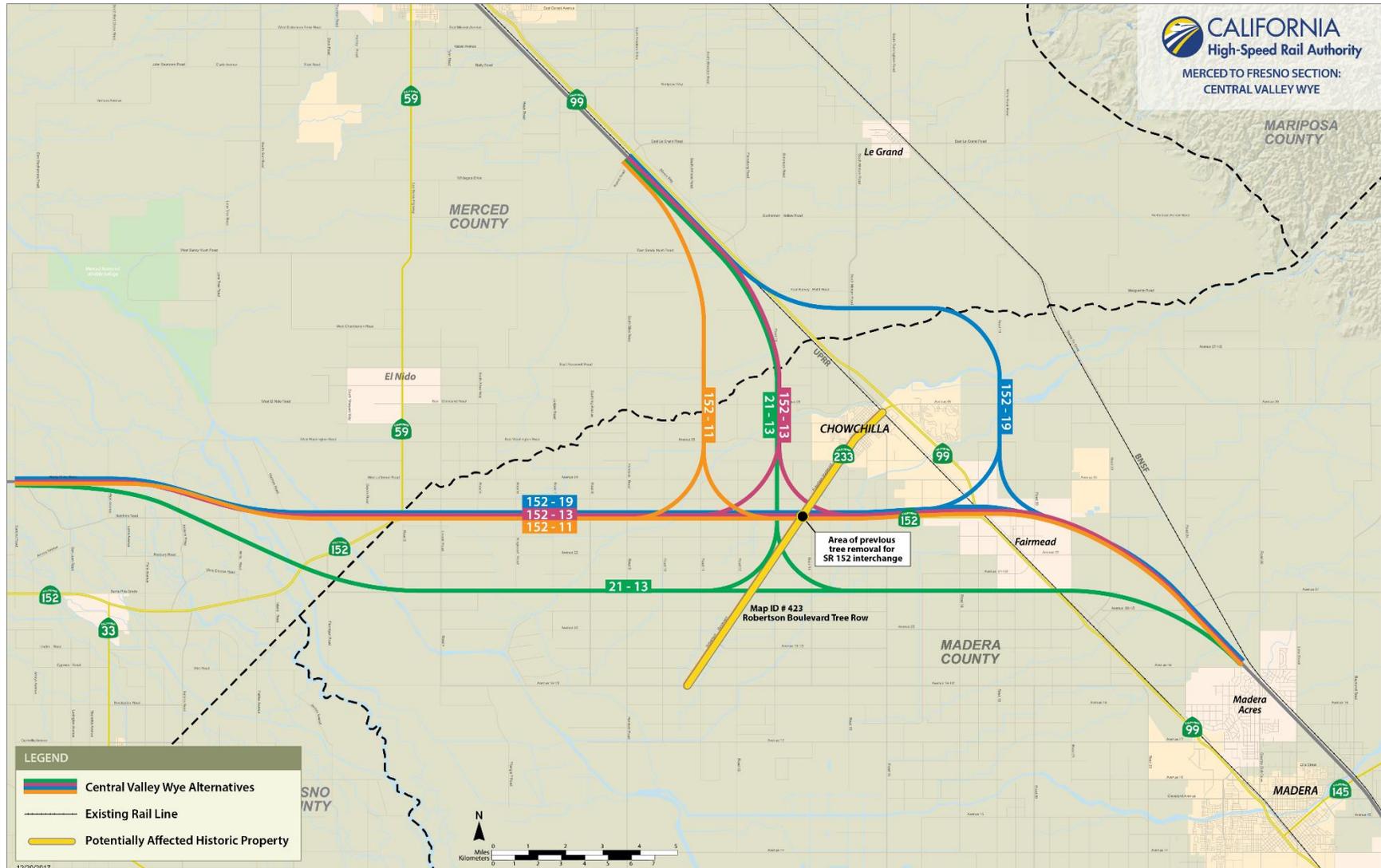
Figure 3.17-2a Chowchilla Canal



Source: Authority and FRA, 2016c

JUNE 15, 2017

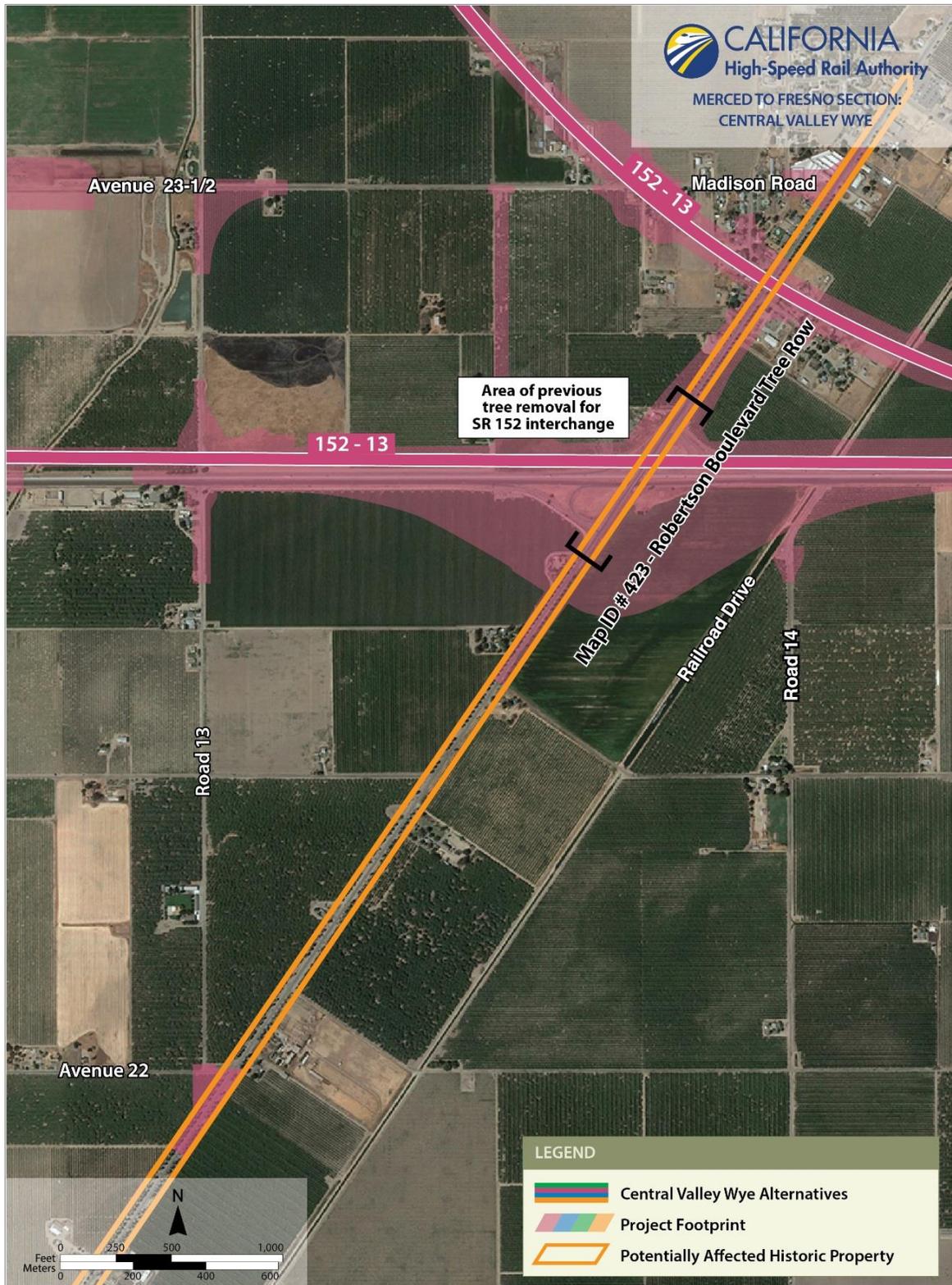
Figure 3.17-2b Chowchilla Canal



Source: Authority and FRA, 2016c; ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

DECEMBER 19, 2017

Figure 3.17-3a Overview, Robertson Boulevard Tree Row



Source: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

JANUARY 5, 2018

Figure 3.17-3b Robertson Boulevard Tree Row



Source: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

JANUARY 5, 2018

Figure 3.17-3c Robertson Boulevard Tree Row



Source: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

DECEMBER 19, 2017

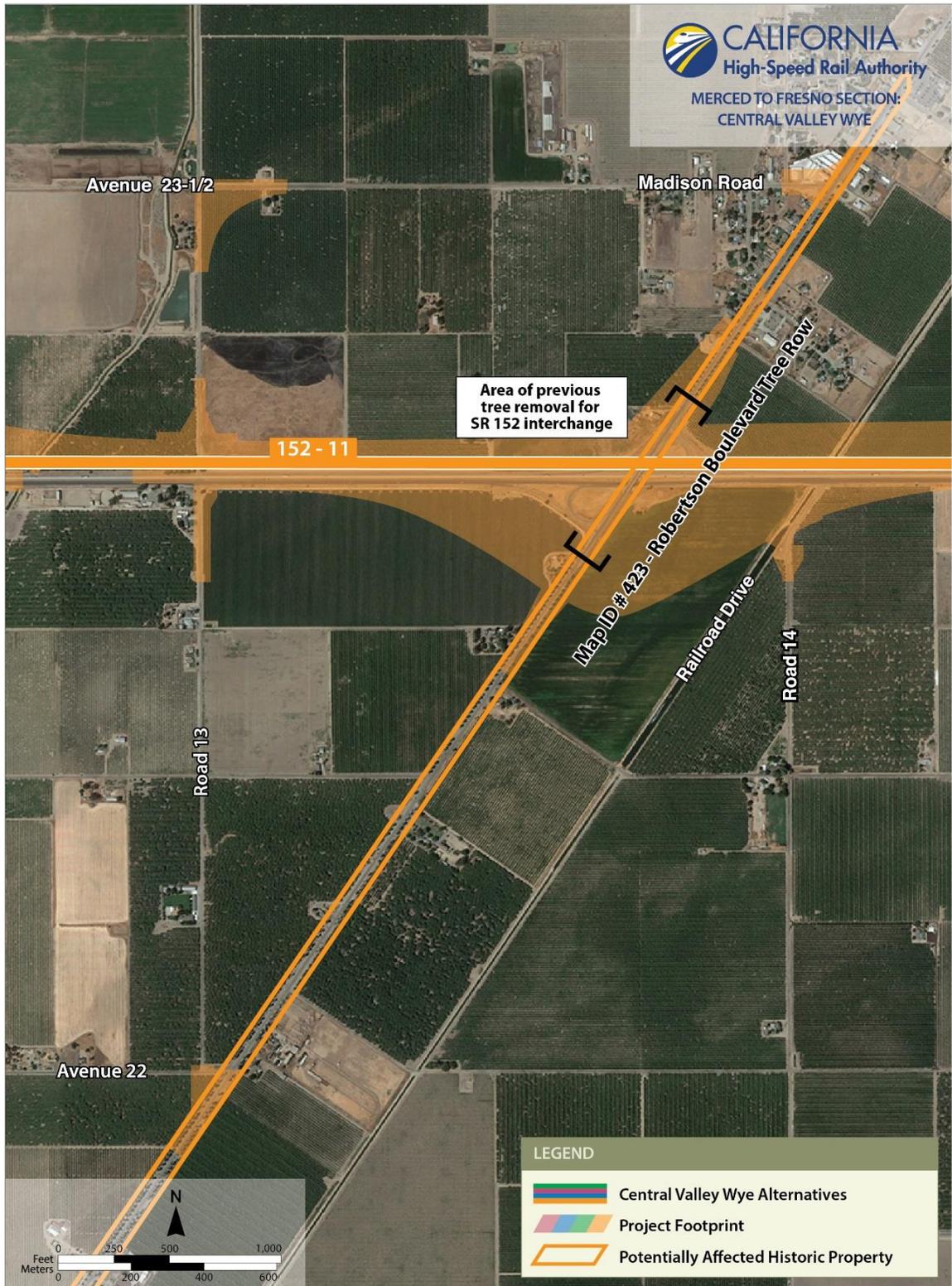
Figure 3.17-3d Robertson Boulevard Tree Row



Source: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

JANUARY 5, 2018

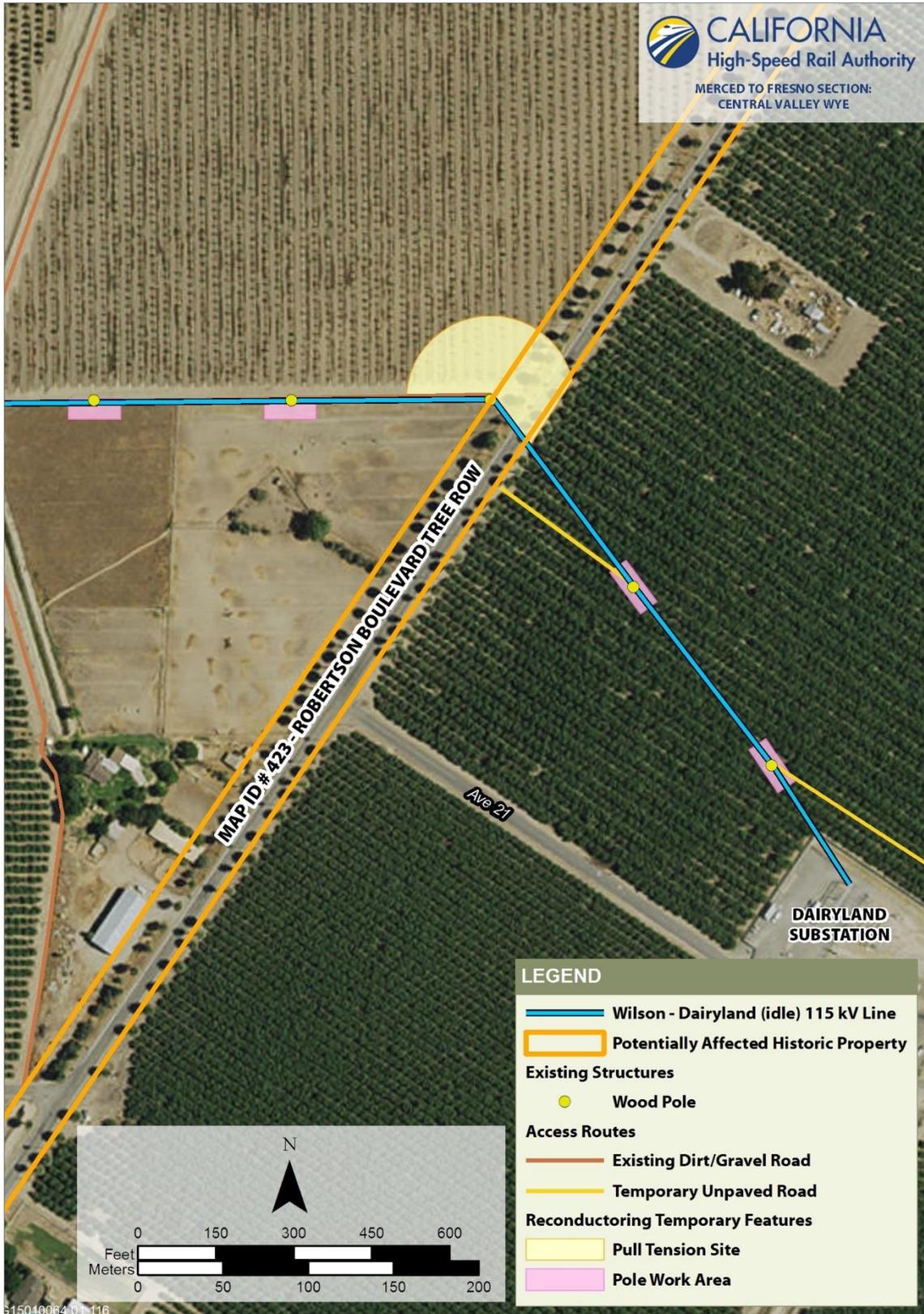
Figure 3.17-3e Robertson Boulevard Tree Row



Source: ESRI, 2013; CAL FIRE, 2004; ESRI/National Geographic, 2015; Google Earth, 2015

JANUARY 5, 2018

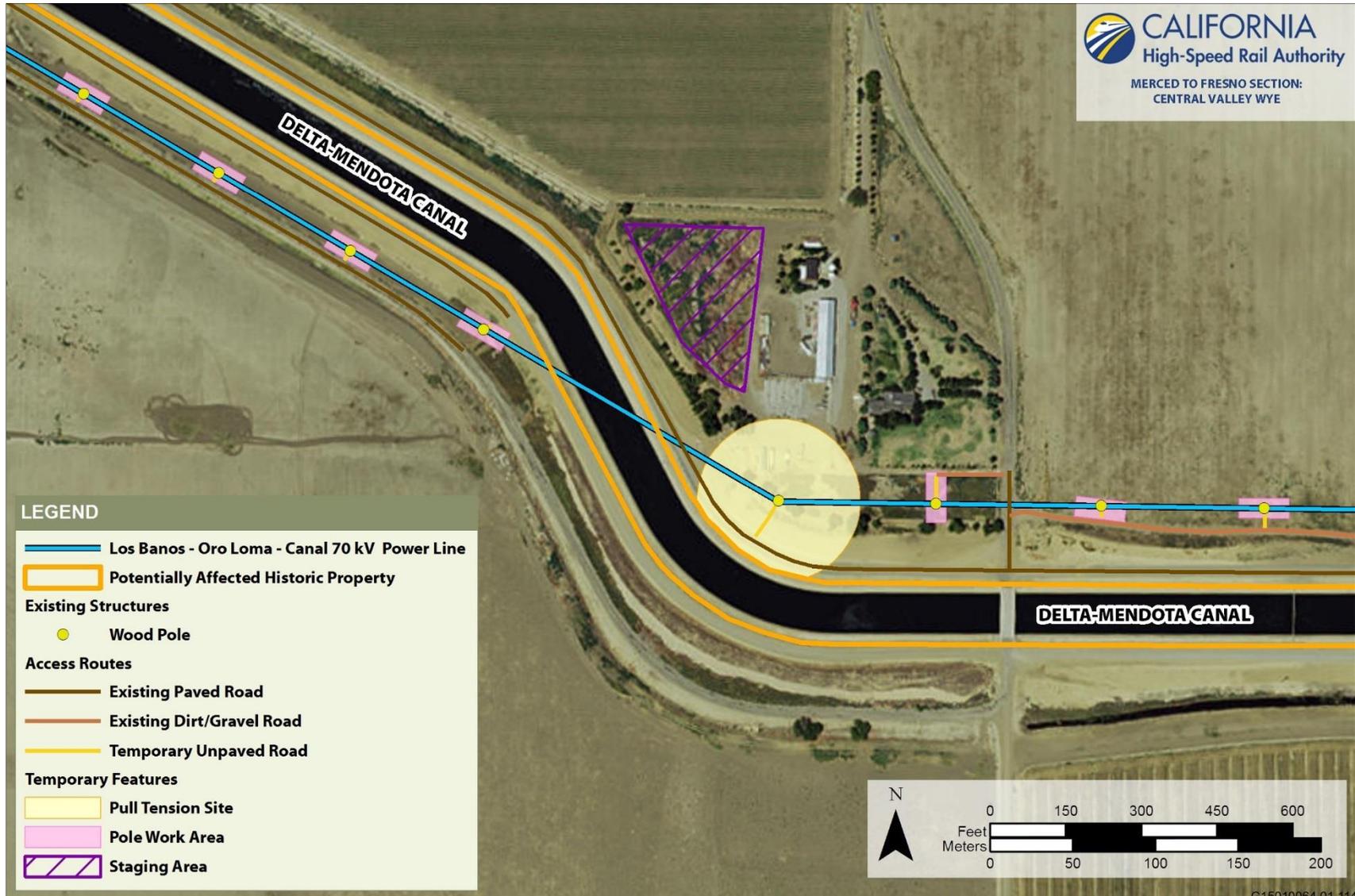
Figure 3.17-3f Robertson Boulevard Tree Row



Source: ESRI/National Geographic, 2015

JUNE 15, 2017

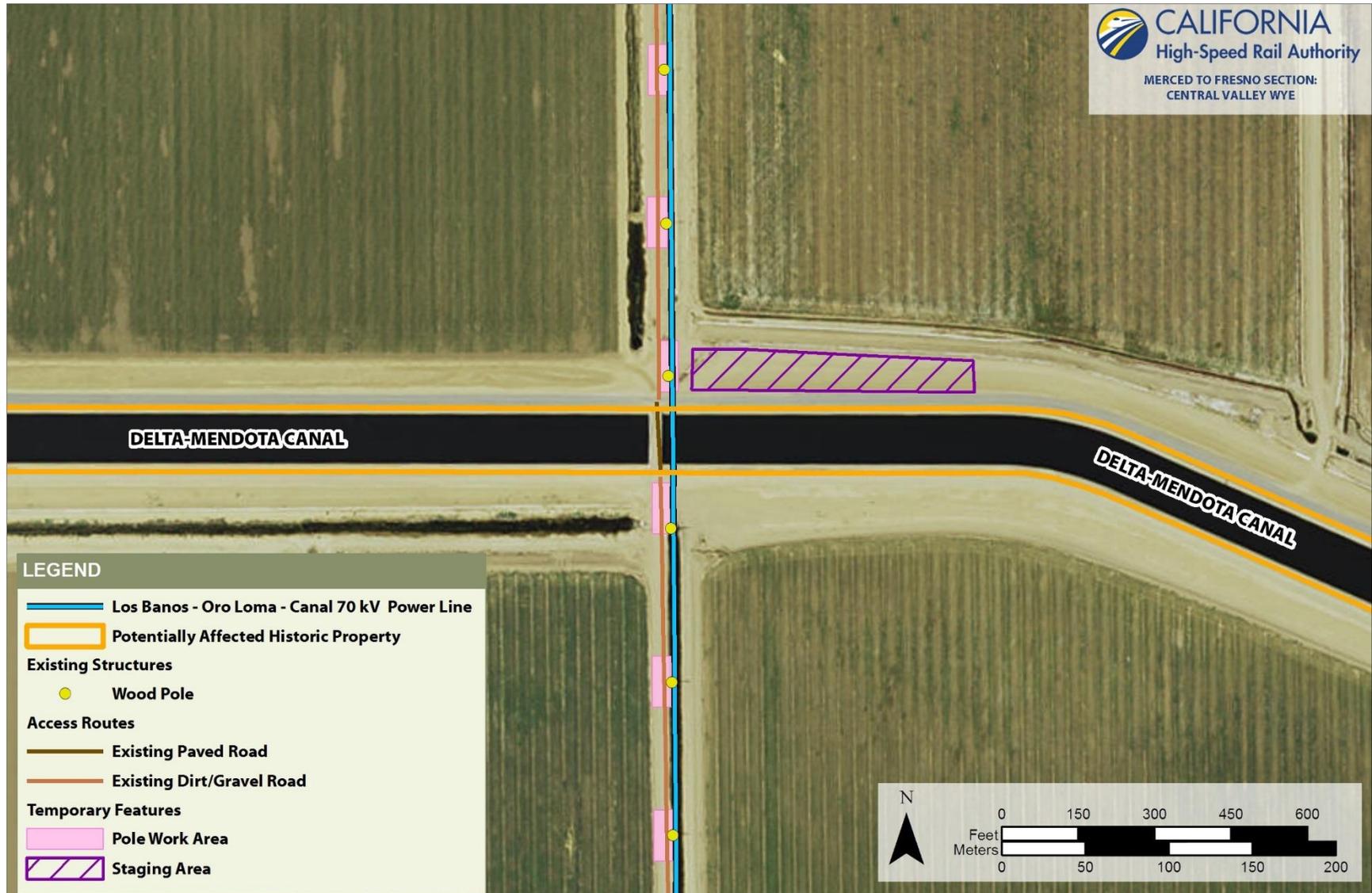
Figure 3.17-3g Robertson Boulevard Tree Row



Source: ESRI/National Geographic, 2015

JUNE 15, 2017

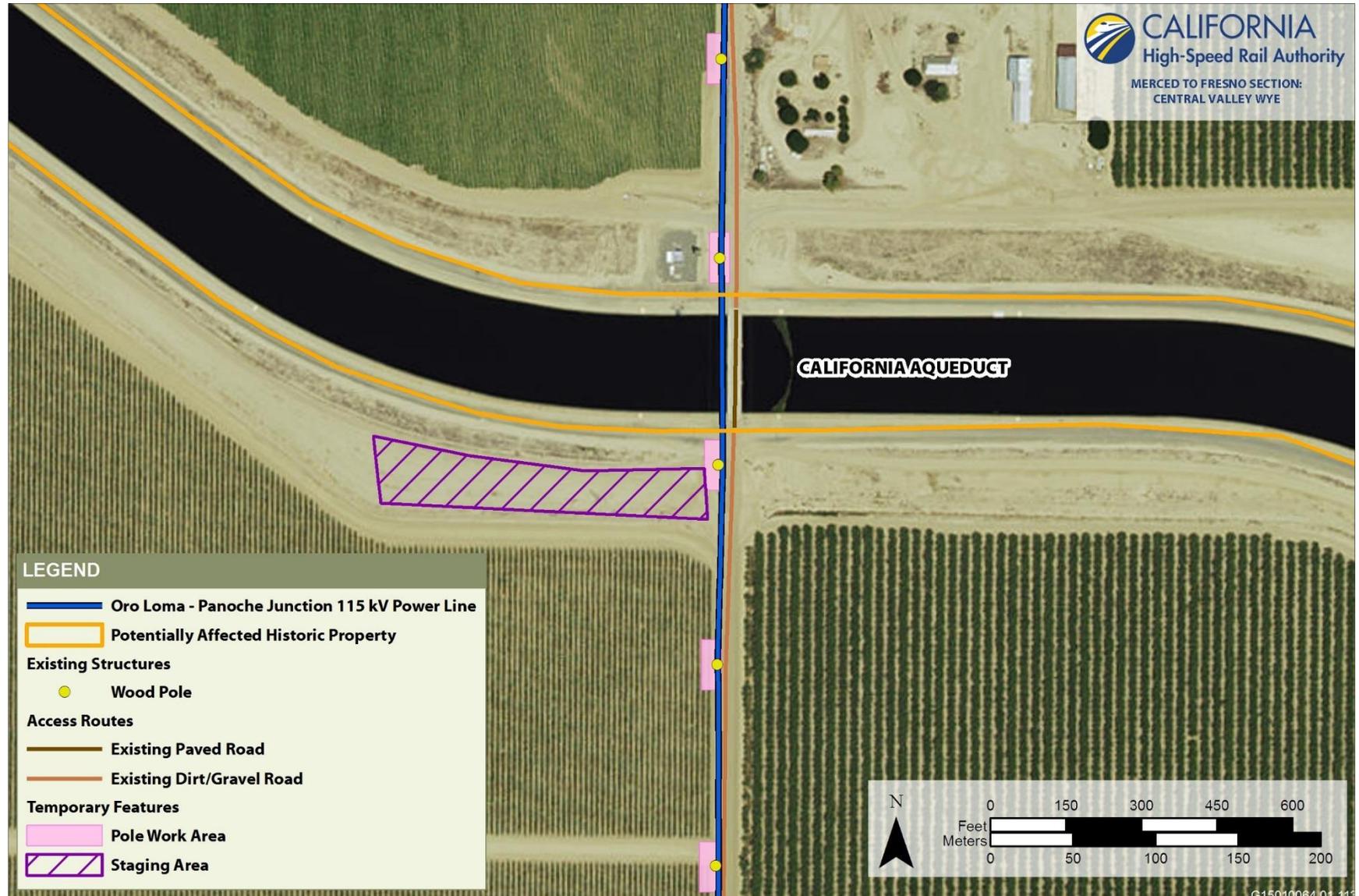
Figure 3.17-4a Delta-Mendota Canal



Source: ESRI/National Geographic, 2015

JUNE 15, 2017

Figure 3.17-4b Delta-Mendota Canal



Source: ESRI/National Geographic, 2015

JUNE 15, 2017

Figure 3.17-5 California Aqueduct

3.17.7 Environmental Consequences

3.17.7.1 Overview

This section evaluates how the No Project Alternative and the Central Valley Wye alternatives would affect cultural resources. The impacts of the Central Valley Wye alternatives are described and organized as follows:

Construction Impacts

Archaeological Resources Impacts

- Impact CUL#1: Permanent Disturbance of Unknown Archaeological Sites
- Impact CUL#2: Permanent Disturbance of Known Archaeological Sites

Historic Architectural Resources Impacts

- Impact CUL#3: Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting

Operations Impacts

Archaeological Resources Impacts

- Impact CUL#4: Temporary Public Access and Disturbance of Archaeological Resources
- Impact CUL#5: Common Impacts on Archaeological Resources

Historic Architectural Resources Impacts

- Impact CUL#6: Intermittent Vibration Impairments on Historic Architectural Resources

3.17.7.2 No Project Alternative

The population in the San Joaquin Valley is expected to grow through 2040 (see Section 2.2.2.2, Planned Land Use). To accommodate the population increase, development in the San Joaquin Valley would continue under the No Project Alternative and result in associated direct and indirect impacts on cultural resources. Such planned projects that are anticipated to be constructed by 2040 include residential, commercial, industrial, recreational, transportation, and agricultural projects.

As described in Section 3.17.6, past development has led to conditions affecting cultural resources. Surveys to determine the presence of archaeological and historic architectural resources and consideration of potential project impacts on such resources are required for projects with federal approvals or funding. If cultural resources are discovered, these laws encourage project design modifications that would avoid or minimize impacts on significant resources. When projects are unable to avoid or minimize impacts, measures are required to mitigate for the loss of such resources. Development activities including demolition, new construction, ground disturbance and compaction in construction and staging areas, accelerated erosion or increased flooding associated with changes in drainage patterns, and development of new borrow sites could lead to impacts on cultural resources. These impacts could include the disturbance of unknown archaeological resources and demolition, destruction, relocation, or alteration of historic architectural resources or their setting. Further, increased public access to areas containing cultural resources related to development also has the potential for impacts on cultural resources because of intentional or unintentional artifact collection, vandalism, and destruction.

Future development projects in Merced and Madera Counties include dairy farm expansions, implementation of airport development and land use plans, and implementation of general and specific plans throughout both counties. Planned projects under the No Project Alternative would also include transportation projects such as the expansion of SR 99, and residential, commercial, and industrial developments. A full list of anticipated future development projects is provided in Appendix 3.19-A, Cumulative Plans and Non-Transportation Projects List, and Appendix 3.19-B, Cumulative Transportation Projects Lists. The residential and commercial growth expected in and around the city of Chowchilla, as described in the Introduction and Land Use sections of the City of Chowchilla 2040

General Plan (pages I-1 through L-69) (City of Chowchilla 2011), is anticipated to affect cultural resources through construction-related surface disturbance, which could lead to the unearthing of sensitive archaeological resources, disturbance of traditional cultural properties, or changes in the historic character or setting of historic architectural resources.

Under the No Project Alternative, recent development trends are anticipated to continue, leading to impacts on cultural resources. Existing land would be converted for residential, commercial, and industrial development, as well as for transportation infrastructure, to accommodate future growth, potentially disturbing archaeological and architectural resources. Planned development and transportation projects that would occur as part of the No Project Alternative would likely include various forms of mitigation to address impacts on cultural resources.

3.17.7.3 Central Valley Wye Alternatives

Construction and operations of the Central Valley Wye alternatives could result in potential direct impacts on cultural resources, including archaeological resources and historic architectural resources. Potential impacts could include damage or disturbance to unknown archaeological sites during construction caused by construction activities and increased public access.

Construction Impacts

Construction of the Central Valley Wye alternatives could affect cultural resources through surface-disturbing actions that could disturb unknown archaeological sites, physically alter the built environment, or alter the visual setting. Further, increased public access during construction could result in intentional or unintentional disturbance of archaeological resources. These impacts could be direct, permanent, and significant.

Archaeological Resources Impacts

Impact CUL#1: Permanent Disturbance of Unknown Archaeological Sites

Construction of all of the Central Valley Wye alternatives could potentially affect unknown archaeological deposits from ground-disturbing activities. Unknown archaeological sites might represent the full range of prehistoric or historic activities conducted over time, including prehistoric lithic scatters and village sites, historic-era homestead remains, and human burials. Unknown or unrecorded archaeological resources that are not observable when conducting standard surface archaeological inspections, including subsurface buried archaeological deposits, may exist in areas surveyed, within the urbanized or rural areas, or areas where permission to enter has not been granted.

The Merced Fresno MOA (Authority and FRA 2012d), treatment plans and the IAMFs would limit the potential for impacts on unknown archaeological sites. The Authority would conduct preconstruction surveys of all areas not previously surveyed because of lack of legal access (CUL-IAMF#3). These surveys would further characterize the area that could contain unknown archaeological resources or historic properties, and would provide information to be incorporated into the final design that would avoid or minimize the potential for impact. The Authority would also develop a geospatial layer to identify the locations of all known archaeological and built historic architectural resources (CUL-IAMF#1), which would be used to develop an archaeological monitoring plan (CUL-IAMF#5). These activities would allow for the relocation of access areas and laydown sites if the selected Central Valley Wye alternative has the potential to affect newly discovered archaeological sites or historic architectural resources (CUL-IAMF#4).

Additionally, the Authority would require a worker environmental awareness program training session and printed material to be presented to construction personnel to familiarize the workforce with the relevant legal context for cultural resources of the Central Valley Wye alternatives and with the types of cultural sites, features, and artifacts that could be uncovered during construction activities (CUL-IAMF#2). These training sessions are intended to enable construction personnel to recognize potential archaeological resources if uncovered during construction and what actions to then take, if a monitor is not present, thereby avoiding or minimizing impacts on that resource from construction activities. Monitoring requirements, including the preparation and incorporation during construction of an archaeological monitoring

plan for archaeologically sensitive areas (CUL-IAMF#5), would further avoid or minimize the potential to disturb archaeological materials. However, even with these features, construction of the Central Valley Wye alternatives could disturb and damage archaeological materials.

According to archaeological and geoarchaeological analytical results, archaeological sensitivity varies between high and low across the APE. The potential for encountering unknown archaeological resources would be the same for all Central Valley Wye alternatives, as all the Central Valley Wye alternatives would be constructed in the same general geography and have the same amount of ground disturbance, survey coverage, and cultural sensitivity within that geography; therefore, each alternative has the same potential to encounter, disturb, or damage unknown archaeological resources during construction.

CEQA Conclusion

The impact under CEQA would be significant for all alternatives because ground-disturbing construction activities could permanently affect unknown or unrecorded archaeological resources. Construction-related ground disturbance for the Central Valley Wye alternatives in areas that could contain unknown archaeological resources or historic properties could cause substantial changes in the significance of archaeological resources pursuant to the NHPA (36 C.F.R. § 800.5). The Central Valley Wye alternatives would include requirements for surveys, testing, and data collection protocols, and monitoring requirements which would avoid or minimize impacts on archaeological resources. The Authority would implement CUL-MM#1: Amend Archaeological and Built Environment Treatment Plans, which requires preparation or amendments to the previously prepared ATP and BETP, and CUL-MM#2: Mitigate Adverse Impacts on Archaeological and Built Environment Resources Identified during Phased Identification. Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the PA and MOA, for newly identified eligible properties that are identified once parcels are accessible and that may be adversely affected. The contractor would follow appropriate schedule restrictions and halt work during any ground-disturbing activities should there be an unanticipated archaeological discovery with implementation of CUL-MM#3: Halt Work in the Event of an Archaeological Discovery and Comply with the PA, MOA, ATP, and all State and Federal Laws, as Applicable. With implementation of CUL-MM#1, CUL-MM#2, and CUL-MM#3, the impact under CEQA would be less than significant because the potential for ground-disturbing activities to affect archaeological resources would be reduced.

Section 106 Finding

The Authority has made a finding of *potential adverse effect* on unknown or unrecorded archaeological resources, because ground-disturbing construction activities may result in disturbance or destruction of such resources. Consultation with SHPO regarding these findings, and how the Authority would resolve the adverse effect on archaeological resources, was completed in May 2018.

Impact CUL#2: Permanent Disturbance of Known Archaeological Sites

Construction of all of the Central Valley Wye alternatives would involve ground disturbance that could potentially affect known archaeological resources. Within the archaeological APE for Site 7—Le Grand Junction/Sandy Mush Road, Warnerville—Wilson 230 kV Transmission Line, construction of EINU could disturb one prehistoric archaeological site (WW-01) because of earthmoving activities associated with potential road widening of an existing dirt access road. However, as described in Appendix 2-D.1, Detailed Project Description (included in Appendix 2-D, Electrical Interconnections and Network Upgrades), if widening of an existing dirt road were required, an alternative route to the tower location exists, which would avoid impacts on this known prehistoric archaeological site.

There would be no impact on known archaeological sites from construction of any of the Central Valley Wye alternatives because the design avoids permanent disturbance of known prehistoric archaeological resources by using an alternative route to allow construction of the EINU.

CEQA Conclusion

There would be no impact under CEQA under any of the alternatives because the Central Valley Wye alternatives design would avoid disturbance of known archaeological resources by using an alternate route to allow construction of the EINU. Therefore, CEQA does not require any mitigation.

Section 106 Finding

The Authority has made a finding of *no adverse effect* on the known prehistoric archaeological site (WW-01), because the potential for disturbance of the site if road widening were required would be avoided through use of an alternative route to the tower location for electrical upgrades.

Historic Architectural Resources Impacts

Impact CUL#3: Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting

All of the Central Valley Wye alternatives would be constructed near the Chowchilla Canal (Figure 3.17-1 Map ID#197), a significant historic architectural resource, and would require modification of the canal. While all of the alternatives would cross the canal in different places, the types of construction activities would be the same, and each alternative would result in approximately the same types of impacts. The result of construction would not cause an impact on this existing historic architectural resource or its setting under any of the alternatives because the modification of this historic property would not impair its ability to convey its historic significance. Further discussion of potential impacts to this resource that could result from construction of each of the Central Valley Wye alternatives is provided under the subheading Chowchilla Canal Map ID#197.

The Merced to Fresno Final EIR/EIS (Authority and FRA 2012a) identified that the Robertson Boulevard Tree Row, a historic architectural resource, would incur an unavoidable adverse effect under Section 106 under each of the alternatives analyzed, because both the Avenue 21 Wye and Avenue 24 Wye alternatives would cross the tree row perpendicularly, resulting in the physical demolition, destruction, damage, or substantial alteration of the Robertson Boulevard Tree Row.

As part of the Section 106 analysis for the Central Valley Wye alternatives, the Robertson Boulevard Tree Row was analyzed for potential impacts under each of the Central Valley Wye alternatives under consideration. The analysis determined that the impacts would be comparable to those disclosed in the Merced to Fresno Final EIR/EIS (Authority and FRA 2012a). Although the alternatives analyzed in the Merced to Fresno Final EIR/EIS differ from the Central Valley Wye alternatives, the impacts resulting from the Robertson Boulevard Tree Row crossing would be similar and are expected to result in an adverse effect finding under Section 106. Further discussion of potential impacts to this resource that could result from construction of each of the Central Valley Wye alternatives is provided under the subheading Robertson Boulevard Tree Row Map ID#423.

There is no potential for direct or indirect impacts on historic properties or historic resources associated with the EINUs required for all of the Central Valley Wye alternatives. The nine previously recorded linear resources are the Delta-Mendota Canal and California Aqueduct (associated with all of the Central Valley Wye alternatives [Site 6—El Nido, Los Banos—Oro Loma—Canal 70 kV Power Line and Oro Loma—Panoche Junction 115 kV Power Line, respectively]), Robertson Boulevard Tree Row (associated with SR 152 (North) to Road 19 Wye Alternative [Site 7—Le Grand Junction/Sandy Mush Road, Wilson—Dairyland (idle) 115 kV Power Line], and Keeley Drain, Henderson Lateral, Yosemite Valley Railroad, Oakdale Branch of the Southern Pacific Railroad, Brookfield Farms Irrigation System, and Merced Irrigation District (associated with the SR 152 (North) to Road 19 Wye Alternative [Site 7—Le Grand Junction/Sandy Mush Road, Warnerville—Wilson 230 kV Transmission Line])). While the Delta-Mendota Canal, California Aqueduct, and Robertson Boulevard Tree Row have been determined to be eligible resources, none of the other six previously recorded built resources identified by the records search requires further study. Implementation of network upgrades would have no potential to cause impacts because these linear built resources are already spanned by existing power lines/transmission lines and would continue to be spanned by power/transmission lines.

Specifically, proposed reductoring would not cause impacts on the alignments or appearances of these built resources, and the resources would retain their character-defining features that enable them to convey their historic or potentially historic significance.

Additional historic architectural resources may be discovered in the APE in the course of surveys that would be conducted on as-yet inaccessible land prior to construction. The Central Valley Wye alternatives incorporate IAMFs for identification of historic built resources prior to construction (CUL-IAMF#3) and protection of historic built resources and repair of inadvertent damage prior to construction (CUL-IAMF#6). Per the Merced Fresno MOA (Authority and FRA 2012d), the Authority is committed to implementation of the BETP, and the IAMFs stipulate further development of the plan as needed.

Further, the Authority requires that the BETP be amended prior to construction and implemented prior to ground-disturbing activities, describing the properties that would require monitoring, the type of activities or resources that would require full-time monitoring or spot checks, the required number of monitors for each construction activity, and the parameters that would influence the level of effort for monitoring (CUL-IAMF#7). These monitoring procedures would avoid or minimize the potential for inadvertent impacts on historic architectural resources.

Finally, construction-related vibration impacts have the potential to cause permanent destruction or alteration to cultural resources that could affect the resource's ability to convey its historic significance. Section 3.4 discusses temporary and permanent impacts analysis for construction vibration resulting from implementation of the Central Valley Wye alternatives. The impacts from construction-related vibration would not be different between the four Central Valley Wye alternatives because the types of construction activities, equipment, and hours of construction are anticipated to be the same under all Central Valley Wye alternatives. Section 3.4.6.3, Central Valley Wye Alternatives, discusses calculations performed to determine the distances at which construction-related vibration impacts would occur according to the criteria discussed in Section 3.4.4, Methods for Evaluating Impacts. Table 3.4-13 shows the maximum distances at which short-term construction vibration impacts on nearby structures and buildings could occur. The results show that none of the vibration sources would produce construction-related vibration outside of the Central Valley Wye alternatives project footprints that could result in structural damage.

Chowchilla Canal Map ID#197

Construction of the SR 152 (North) to Road 13 Wye Alternative, SR 152 (North) to Road 19 Wye Alternative, and SR 152 (North) to Road 11 Wye Alternative would remove the existing culvert under SR 152 and install a new culvert to carry the Chowchilla Canal segment under both the road and the proposed adjacent rail alignment. The Chowchilla Canal would not be realigned, but rather the existing culverted section would be reconfigured to accommodate the HSR and would continue to convey water along its historic alignment.

The Chowchilla Canal is already culverted at the road crossing. The proposed rail alignment would parallel the existing road and an existing culverted section would be reconfigured. Therefore, the Chowchilla Canal would retain its character-defining features that enable the resource to convey its historic significance including its historic alignment and its ability to transport water.

Construction activities for the Avenue 21 to Road 13 Wye Alternative would be the same as the construction activities described for the other alternatives apart from the reconfiguration of a culvert that currently conveys the Chowchilla Canal under Avenue 21 to accommodate both the road and the proposed rail alignment. The impacts would be approximately the same as those for the SR 152 (North) to Road 13 Wye Alternative because the same activities would occur, although in a different location. The result of construction would not cause an impact on this existing historic architectural resource or its setting under any of the alternatives because the modification of this historic property would not impair its ability to convey its historic significance.

Robertson Boulevard Tree Row Map ID#423 SR 152 (North) to Road 13 Wye Alternative

Under the SR 152 (North) to Road 13 Wye Alternative, the proposed rail alignment would cross Robertson Boulevard at two locations—the San Jose to Fresno leg of the Central Valley Wye alternatives would cross Robertson Boulevard just north of the SR 152 interchange, while the Merced to Fresno leg of the Central Valley Wye alternatives would cross Robertson Boulevard on an aerial structure at the Valeta Drive intersection approximately 0.4 mile north of SR 152. All trees would be removed within the project footprint. Construction of the HSR track would require removal of approximately six trees from the Robertson Boulevard Tree Row for the Merced to Fresno leg of the Central Valley Wye alternative, and no trees exist along SR 152 near the San Jose to Fresno leg. However, because the San Jose to Fresno leg would be placed at grade in this location, Robertson Boulevard would be grade-separated by building an underpass below the Central Valley Wye alternatives track to maintain circulation along Robertson Boulevard. A large number of trees were previously removed to construct the existing Robertson Boulevard grade separation at SR 152, and a portion of the area that would be affected by the Central Valley Wye alternatives is already absent of trees (Figure 3.17-3b). However, construction of the grade-separated Robertson Boulevard would demolish a portion of the Robertson Boulevard Tree Row that was not previously affected. In total, construction of the SR 152 (North) to Road 13 Wye Alternative would disturb approximately 4,516 linear feet of the Robertson Boulevard Tree Row. Because a portion of the Robertson Boulevard Tree Row would be destroyed, the SR 152 (North) to Road 13 Wye Alternative would result in an adverse effect on the Robertson Boulevard Tree Row under Section 106.

SR 152 (North) to Road 19 Wye Alternative

The SR 152 (North) to Road 19 Wye Alternative would result in similar impacts on the Robertson Boulevard Tree Row to those of the SR 152 (North) to Road 13 Wye Alternative, including removal of all trees located within the project footprint, as depicted on Figure 3.17-3c. Specific to the SR 152 (North) to Road 19 Wye Alternative, a network upgrade would traverse Robertson Boulevard Tree Row.

Reconductoring/rebuilding of the existing Site 7—Le Grand Junction/Sandy Mush Road, Wilson–Dairyland (idle) 115 kV Power Line (which crosses the Robertson Boulevard Tree Row near Avenue 21 approximately 4 miles southwest of Chowchilla) would require a temporary pull and tension site under the SR 152 (North) to Road 19 Wye Alternative. This pull and tension site would bisect a small portion of the Robertson Boulevard Tree Row. This could require the removal of one or more of the trees associated with the Robertson Boulevard Tree Row. However, the actual footprint of the pull and tension sites would be smaller than the pull and tension areas evaluated in this document. A larger impact area is evaluated to allow flexibility during construction. As described in Appendix 2-D, the pull and tension site would be located so as not to disturb, remove, or in any way affect the protected resources associated with Robertson Boulevard Tree Row. Additionally, once constructed, the Wilson–Dairyland (idle) 115 kV Power Line would operate the same as existing conditions and no permanent use would result.

The key difference between the SR 152 (North) to Road 19 Wye Alternative and SR 152 (North) to Road 13 Wye Alternative is that the Merced to Fresno leg of this alternative would not cross Robertson Boulevard. However, the San Jose to Fresno leg and associated grade separation of Robertson Boulevard would still remove a substantial number of palm trees and the disturbance would be similar to that of the SR 152 (North) to Road 13 Wye Alternative with approximately 4,428 linear feet removed. Because a portion of the Robertson Boulevard Tree Row would be destroyed, the SR 152 (North) to Road 19 Wye Alternative would result in an adverse effect on the Robertson Boulevard Tree Row under Section 106.

Avenue 21 to Road 13 Wye Alternative

The Avenue 21 to Road 13 Wye Alternative would have similar impacts on the Robertson Boulevard Tree Row to those of the SR 152 (North) to Road 13 Wye Alternative, including removal of all trees within the project footprint, as depicted on Figure 3.17-3d and Figure 3.17-3e. Specifically, the San

Jose to Fresno and Merced to Fresno legs of this alternative would cross Robertson Boulevard and the associated historic tree row, but in a different location, approximately 0.9 mile south of SR 152. The Merced to Fresno leg would cross Robertson Boulevard on an aerial structure just north of Avenue 22 and would remove approximately two or three trees associated with the Robertson Boulevard Tree Row. As with the other alternatives, the San Jose to Fresno leg would cross Robertson Boulevard perpendicularly and would require grade separating Robertson Boulevard, resulting in the removal of a substantial number of trees. This portion of the existing Robertson Boulevard Tree Row is more intact than the portions that would be affected under the SR 152 (North) to Road 13 Wye and SR 152 (North) to Road 19 Wye Alternatives because fewer trees have been removed by previous development projects, and therefore, more trees would be affected. In total, the Avenue 21 to Road 13 Wye Alternative would disturb 5,590 linear feet of the tree row. Because a portion of the Robertson Boulevard Tree Row would be destroyed, it has been determined that the Avenue 21 to Road 13 Wye Alternative would result in an adverse effect on the Robertson Boulevard Tree Row under Section 106.

SR 152 (North) to Road 11 Wye Alternative

The SR 152 (North) to Road 11 Wye Alternative would result in similar impacts on the Robertson Boulevard Tree Row to those of the SR 152 (North) to Road 19 Wye Alternative, including removal of all trees located within the project footprint, as depicted on Figure 3.17-3f. Under both alternatives, the San Jose to Fresno leg and associated grade separation of Robertson Boulevard would remove a substantial number of palm trees, although the SR 152 (North) to Road 11 Wye Alternative would disturb slightly fewer linear feet of the tree row because of the grade separation. The SR 152 (North) to Road 11 Wye Alternative would disturb approximately 4,088 linear feet of the tree row. Because a portion of the Robertson Boulevard Tree Row would be destroyed, the SR 152 (North) to Road 11 Wye Alternative would result in an adverse effect on the Robertson Boulevard Tree Row under Section 106.

CEQA Conclusion

The impact under CEQA for the Chowchilla Canal would be less than significant for all alternatives because the construction activities at the Chowchilla Canal would not result in a substantial adverse change to the resource and because surveys, plans, and documentation measures would be incorporated during construction of any of the Central Valley Wye alternatives. Therefore, CEQA does not require any mitigation for impacts on the Chowchilla Canal.

All Central Valley Wye alternatives would result in destruction of a portion of one known historic resource, the Robertson Boulevard Tree Row, and as such the impact under CEQA would be significant. The Authority would implement the same mitigation measures identified for the resource as outlined in the Merced Fresno MOA (Authority and FRA 2012d). These mitigation measures (CUL-MM#1 and CUL-MM#4) would help reduce impacts but they would not fill in all the gaps in the tree row at the interchange and where the selected alternative would cross Robertson Boulevard or where subsequent road improvements are proposed. Even with implementation of the mitigation measures, the impact on the Robertson Boulevard Tree Row under CEQA would be significant.

Section 106 Finding

The Authority has made a finding of *no adverse effect* on the Chowchilla Canal because none of the Central Valley Wye alternatives would alter, directly or indirectly, characteristics that qualify it for listing in the NRHP. The Authority has made a finding of *adverse effect* on the Robertson Boulevard Tree Row, because all Central Valley Wye alternatives would require the removal of trees and would create or expand a gap in the linear row of trees. Because both the individual trees and the continuity of the linear row are character-defining features, the Central Valley Wye alternatives would directly alter characteristics that qualify the Robertson Boulevard Tree Row for listing in the NRHP. Consultation with SHPO regarding these findings and the Authority's options for resolving the adverse effect on the Robertson Boulevard Tree Row was completed in May 2018.

Operations Impacts

Operations of the Central Valley Wye alternatives could cause vibration that could physically damage historic buildings or structures and could introduce new visual or noise elements that would diminish the integrity of a property's historic setting. A change of historic setting could diminish the historic integrity of a historic property and result in permanent direct impacts. Unlike the construction impacts, operations of the Central Valley Wye alternatives would have no potential for indirect impacts because operations would not result in further visual discord, noise, or vibration that would cause impacts on archaeological or historic architectural resources.

Archaeological Resources Impacts

Impact CUL#4: Temporary Public Access and Disturbance of Archaeological Resources

Increasing public access to archaeological sites can lead to their intentional or unintentional disturbance or destruction by people who previously would not have been able to enter the property where the site is located. The Central Valley Wye alternatives would not create new access opportunities to any areas that could potentially affect known or unknown archaeological resources. The right-of-way would be fenced and access controlled, allowing access only to authorized maintenance personnel; therefore, they would not provide access for persons to loot sites and would not expose sites to the impacts of compaction through pedestrian or vehicular traffic. These design characteristics and features would be the same for all Central Valley Wye alternatives; therefore, there is no distinction between their potential to affect archaeological resources during operations. There would be no impacts on unknown archaeological resources as a result of operations from any of the Central Valley Wye alternatives.

CEQA Conclusion

The impact under CEQA would be less than significant for all alternatives because design characteristics of the Central Valley Wye alternatives would preclude public access to the HSR right-of-way, and subsequently, to potential archaeological sites. Therefore, operations of the Central Valley Wye alternatives would not result in a substantial adverse change to the significance of an archaeological resource. Therefore, CEQA does not require any mitigation.

Section 106 Finding

The Authority has made a finding of no effect on archaeological resources for operations activities for all four Central Valley Wye alternatives because none of the alternatives are expected to result in further ground disturbance, visual discord, or vibration that would cause additional impacts on archaeological resources.

Impact CUL#5: Common Impacts on Archaeological Resources

Routine operations and maintenance of the Central Valley Wye alternatives are not expected to disturb previously undisturbed surfaces nor result in further visual discord or vibration that would cause additional impacts on archaeological resources. Operations of any of the Central Valley Wye alternatives would not involve ground disturbance in previously undisturbed materials, and there would be no disturbance, damage, or loss of cultural resources as a result of operations under any of the four alternatives. There would be no impacts on archaeological resources as a result of operations from any of the Central Valley Wye alternatives.

CEQA Conclusion

There would be no impact under CEQA for all alternatives because there would be no ground disturbance during operations in any of the Central Valley Wye alternatives. Therefore, CEQA does not require any mitigation.

Section 106 Finding

The Authority has made a finding of no effect on archaeological resources for operations activities for all four Central Valley Wye alternatives because none of the alternatives are expected to result in further ground disturbance, visual discord, or vibration that would cause additional impacts on archaeological resources.

Historic Architectural Resources Impacts

Impact CUL#6: Intermittent Vibration Impairments on Historic Architectural Resources

Intermittent vibration impacts have the potential to cause permanent destruction or alteration to cultural resources that could affect the ability of these resources to convey historic significance. Section 3.4, Noise and Vibration, of the Merced to Fresno Final EIR/EIS describes temporary and permanent impacts of operational vibration resulting from implementation of the Merced to Fresno Section: Hybrid Alternative. All of the Central Valley Wye alternatives would have the same potential for impacts from intermittent vibration, because the HSR equipment and structures would be the same, and the propagation of vibration through the soils in the RSA is limited to a very short distance (70 feet), which would be contained within the HSR right-of-way.

Chowchilla Canal Map ID#197

Based on the noise and vibration analysis for the Central Valley Wye alternatives (Section 3.4), operational vibration impacts would not extend beyond the project footprint to other portions of the canal that are not being upgraded as part of construction of the Central Valley Wye alternatives. Therefore, there would be no temporary or permanent vibration impacts as a result of operations of any of the Central Valley Wye Alternatives.

Robertson Boulevard Tree Row Map ID#423

While construction of the Central Valley Wye alternatives would remove the tree row where it is located within the project footprint of each alternative, operations would have no impact on the tree row. Based on the noise and vibration analysis for the Central Valley Wye alternatives (Section 3.4), vibration impacts would not extend beyond the project footprint to other portions of the tree row. Therefore, there would be no temporary or permanent vibration impacts as a result of operations of any of the Central Valley Wye alternatives.

CEQA Conclusion

There would be no impact under CEQA for all alternatives because there would be no operational vibration disturbances to historic architectural resources. Therefore, CEQA does not require any mitigation.

Section 106 Finding

The Authority has made a finding of no effect on architectural historic properties for operations activities for all four Central Valley Wye alternatives because the types of architectural historic properties located in the APE (trees and canals) are not susceptible to operations impacts since the vibration levels from operations would not be sufficient to cause physical harm to those resources.

3.17.8 Mitigation Measures

This section presents an updated mitigation approach for the Central Valley Wye alternatives that builds upon the mitigation required under the Merced to Fresno Final EIR/EIS. Mitigation from the Merced to Fresno Final EIR/EIS is summarized in this section and some measures are clarified for specific resources within the Central Valley Wye alternatives project footprints. These mitigation measures include commitments that would occur prior to, during, and following construction. For the purposes of CEQA, these mitigation measures represent all feasible and necessary treatment and management.

As discussed in Section 3.17.4, Coordination of Section 106 with NEPA and CEQA Compliance, the 2011 PA established the framework for the development and implementation of measures to mitigate adverse effects on historic properties caused by the HSR, in compliance with Section 106.

One historic architectural resource identified in the APE, the Robertson Boulevard Tree Row, would be adversely affected. As stated previously, the impacts on this resource would be similar to those described in the Merced to Fresno Final EIR/EIS and would be similar under each of the four Central Valley Wye alternatives except that the linear feet of disturbance to the Robertson Boulevard Tree Row would vary. The Merced Fresno MOA (Authority and FRA 2012d) outlines specific mitigation measures for the Robertson Boulevard Tree Row (Authority and FRA 2013). Because the impacts would be similar between the alternatives analyzed under the Merced to

Fresno Final EIR/EIS and this current analysis except for the varying linear feet of disturbance, these same mitigation measures used in the Merced Fresno MOA are appropriate for the Central Valley Wye alternatives impacts.

One archaeological resource has been identified in the APE but would be avoided. It is anticipated that the ATP would be amended to expand the geographic coverage, currently focused on the north-south Merced to Fresno APE, to include the Central Valley Wye alternatives APE. The ATP requires the phased identification and treatment of cultural resources located on parcels for which legal access has yet to be granted. The ATP establishes procedures to be followed in the event of unanticipated discoveries. Mitigation of impacts on yet unknown archaeological sites would be negotiated between the Authority, FRA, SHPO, and consulting parties. This consultation would continue throughout construction and, should any sites be discovered, mitigation appropriate to that specific site would be developed among the Merced Fresno MOA signatories and consulting parties and memorialized in an addendum to the ATP.

The process of amending the ATP and BETP may include updating provisions such as responses to inadvertent damage, interpretation mitigation, and monitoring protocols, if necessary, so that they address the Central Valley Wye alternatives impacts. Any treatment plan amendments would be approved before the start of construction activities that could adversely affect historic properties or historic resources. While there are likely to be amendments to the treatment plans to address phased evaluation of some inaccessible built resources, there are no changes to or a formal amendment of the Merced Fresno MOA (Authority and FRA 2012d) anticipated because no new impacts on historic properties have been identified.

CUL-MM#1: Amend Archaeological and Built Environment Treatment Plans

As required by the Merced Fresno MOA (Authority and FRA 2012d), the ATP would be amended, as needed by the Authority, in consultation with the signatories to the Merced Fresno MOA, and would be consistent with the requirements of the PA Stipulation VIII.B. The ATP amendment would identify specific steps and responsible parties for Merced Fresno MOA compliance (for example, the roles and qualifications of staff; a process consistent with Section 106 and the PA; summary of archaeological resources and anticipated archaeological types; expectations for survey design; excavation strategy; relevant research questions; a monitoring plan specifying protocols of monitoring; reporting requirements; curation planning).

The BETP amendment would add a commitment for the Authority to require the contractor to refine the design in the vicinity of the Robertson Boulevard Tree Row to minimize the number of trees affected. Implementation would be coordinated with the construction schedule; the related timing requirements would be included in the BETP.

This mitigation measure is anticipated to be effective because the identification of these steps provides guidance and the procedure necessary to reduce potential impacts on archaeological and historic architectural resources identified during survey or construction. Implementation of this measure would not trigger secondary environmental impacts because it would not change the scope, scale, or location of construction activities beyond those that have been described as part of the Central Valley Wye alternatives.

CUL-MM#2: Mitigate Adverse Impacts on Archaeological and Built Environment Resources Identified During Phased Identification. Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the PA and MOA

Once parcels are accessible and surveys have been completed, including consultation as stipulated in the MOA, additional archaeological and built environment resources may be identified. For newly identified eligible properties that will be adversely affected, the following process will be followed, which is presented in detail in the BETP and ATP:

- The Authority will consult with the MOA signatories and concurring parties to determine the preferred treatment of the properties/resources and appropriate mitigation measures.
- For CRHR-eligible archaeological resources, the Authority shall determine if these resources can feasibly be preserved in place, or if data recovery is necessary. The methods of

preservation in place shall be considered in the order of priority provided in CEQA Guidelines § 15126.4(b)(3). If data recovery is the only feasible treatment the Authority shall adopt a data recovery plan as required under CEQA Guidelines § 15126.4(b)(3)(C).

- Should data recovery be necessary, the Contractor's Principal Investigator (PI), in consultation with the MOA signatories and consulting parties, will prepare a data recovery plan for approval from the Authority and in consultation with the MOA signatories. Upon approval, the Contractor's PI will implement the plan.
- For archaeological resources the Authority shall also determine if the resource is a unique archaeological site under CEQA. If the resource is not an historical resource but is an archaeological site the resource shall be treated as required in California Public Resources Code Section 21083.2 by following protection, data recovery, and/or other appropriate steps outlined in the ATP. The review and approval requirements for these documents are outlined in the ATP.
- For historic built resources, the Contractor's PI will amend the BETP to include the treatment and mitigation measures identified by the Authority/FRA in consultation with the MOA signatories and concurring parties. The Contractor's PI will implement the treatment and mitigation measures accordingly.

This mitigation measure would apply to the project footprint, on which impacts have been evaluated in this and other resource sections of this Final Supplemental EIR/EIS. This mitigation measure is anticipated to be effective because it would reduce the potential for impacts on any newly discovered archaeological or historic architectural resources through the protections and compliance requirements. Implementation of this measure would not trigger secondary environmental impacts because it would not change the scope, scale, or location of construction activities beyond those that have been described as part of the Central Valley Wye alternatives.

CUL-MM#3: Halt Work in the Event of an Archaeological Discovery and Comply with the PA, MOA, ATP, and all State and Federal Laws, as Applicable

During construction (any ground-disturbing activities, including clearing and grubbing) should there be an unanticipated discovery, the contractor shall follow the procedures for unanticipated discoveries as stipulated in the PA, MOA, and associated ATP. The procedures must also be consistent with the following: the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 *Federal Register* 44716-42), as amended (National Park Service); and Guidelines for the Implementation of CEQA, as amended (14 California Code of Regulations Chapter 3, Article 9, §§ 15120–15132). Should the discovery include human remains, the contractor and the Authority shall comply with federal and state regulations and guidelines regarding the treatment of human remains, including relevant sections of Native American Graves Protection and Repatriation Act (§ 3(c)(d)); California Health and Safety Code, Section 8010 et seq.; and California Public Resources Code Section 5097.98; and consult with the NAHC, tribal groups, and the SHPO.

- In the event of an unanticipated archaeological discovery, the contractor will cease work in the immediate vicinity of the find, based on the direction of the archaeological monitor or the apparent location of cultural resources if no monitor is present. If no qualified archaeologist is present, no work can commence until it is approved by the qualified archaeologist in accordance with the MOA, ATP, and monitoring plan. The contractor's qualified archaeologist will assess the potential significance of the find and make recommendations for further evaluation and treatment as necessary. These steps may include evaluation for the CRHR and NRHP and necessary treatment to resolve significant effects if the resource is an historical resource or historic property. If, after documentation is reviewed by the Authority, and they determine it is a historic property, and the SHPO concurs that the resource is eligible for the NRHP, or the Authority determines it is eligible for the CRHR, preservation in place shall be considered by the Authority in the order of priority provided in CEQA Guidelines § 15126.4(b)(3) and in consultation with the signatories and consulting parties to the MOA. If data recovery is the only feasible mitigation the contractor's qualified PI shall

prepare a data recovery plan as required under CEQA Guidelines § 15126.4(b)(3)(C), the MOA, and ATP, for the Authority's approval.

The contractor shall notify the Authority, who shall notify the California State Lands Commission (CSLC), if the find is a cultural resource on or in the submerged lands of California and consequently under the jurisdiction of the CSLC. The Authority will comply with all applicable rules and regulations promulgated by CSLC with respect to cultural resources in submerged lands.

If human remains are discovered on state-owned or private lands the contractor shall contact the relevant County Coroner to allow the Coroner to determine if an investigation regarding the cause of death is required. If no investigation is required and the remains are of Native American origin the Authority shall contact the NAHC to identify the most likely descendant (MLD). The MLD shall be empowered to reinter the remains with appropriate dignity. If the MLD fails to make a recommendation the remains shall be reinterred in a location not subject to further disturbance and the location shall be recorded with the NAHC and relevant information center of the California Historical Resources Information System.

If human remains are part of an archaeological site, the Authority and contractor shall, in consultation with the MLD and other consulting parties, consider preservation in place as the first option, in the order of priority called for in CEQA Guidelines Section 15126.4(b)(3).

In consultation with the relevant Native American Tribes, the Authority may conduct scientific analysis on the human remains if called for under a data recovery plan and amenable to all consulting parties. The Authority will work with the MLD, to satisfy the requirements of California Public Resources Code Section 5097.98. Performance tracking of this mitigation measure will be based on successful implementation and acceptance of the documentation by the SHPO and appropriate consulting parties.

The mitigation measures described in this section and provided in the ATP are consistent with best practices within the professional archaeological community and are commensurate with mitigation measures for other large-scale transportation projects. This mitigation measure is anticipated to be effective because it includes identification efforts, conducting archaeological training, monitoring during construction, stopping work if resources are encountered to allow for assessment of the find, and developing treatment plans, which would achieve the stewardship goals of Section 106 and NEPA and CEQA review. Implementation of this measure would not trigger secondary environmental impacts because it would not change the scope, scale, or location of construction activities beyond those that have been described as part of the Central Valley Wye alternatives.

CUL-MM#4: Mitigation for Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting—Robertson Boulevard Tree Row

The Merced Fresno MOA (Authority and FRA 2012d) outlines specific mitigation measures for the Robertson Boulevard Tree Row. Because the effect is similar, these same mitigation measures are appropriate for the Central Valley Wye alternatives impacts. These measures are detailed in the Merced Fresno MOA. Overall, these measures include conducting preconstruction conditions assessments of the trees, preparing plans for protection and stabilization, preparing response plans for unanticipated effect and inadvertent damage, preparing and submitting Historic American Landscape Survey documentation, and relocation of selected trees. Consequently, no changes to the Merced Fresno MOA would be necessary.

3.17.9 Impacts Summary for NEPA Comparison of Alternatives

This section summarizes the impacts of the Central Valley Wye alternatives and compares them to the anticipated impacts of the No Project Alternative. Table 3.17-5 provides a comparison of the potential impacts of the Central Valley Wye alternatives cultural resources, summarizing the more detailed information provided in Section 3.17.7.

Under the No Project Alternative, development pressures resulting from an increasing population in Merced and Madera Counties would continue to lead to associated direct and indirect impacts

on cultural resources. The No Project Alternative is anticipated to continue recent development trends that have led to the disturbance of cultural resources caused by the unearthing of sensitive archaeological resources, disturbance of traditional cultural properties, or changes in the historic character or setting of historic architectural resources. Development under the No Project Alternative would result in similar types of impacts on cultural resources as the Central Valley Wye alternatives. Planned residential, commercial, industrial, recreational, transportation, and agricultural projects would lead to impacts on cultural resources from construction activities that could also lead to the disturbance of known or unknown archaeological resources, traditional cultural properties, or historic architectural resources.

The Merced to Fresno Final EIR/EIS concluded that development of the HSR system would result in potential impacts on cultural resources. Implementing the Central Valley Wye alternatives could also result in impacts on cultural resources from construction activities. These potential impacts would be similar among the four alternatives and not one of the alternatives would have substantively greater or lesser impacts on cultural resources, with the exception of the varying linear feet of disturbance to the Robertson Boulevard Tree Row.

The Central Valley Wye alternatives would incorporate IAMFs to avoid or minimize impacts on cultural resources. These IAMFs would include requirements for additional surveys, training sessions for construction personnel to be able to identify cultural resources, a monitoring plan, a discovery plan, procedure if unanticipated discoveries are made during ground-disturbing activities, and plans to protect and to avoid or minimize damage to historic properties. See Section 3.17.5.2, Impact Avoidance and Minimization Features, and Appendix 2-B for additional information about the IAMFs applicable to cultural resources.

The Central Valley Wye alternatives could result in construction-related impacts on cultural resources caused by temporary and permanent disturbance of land. Unknown archaeological sites could be subject to disturbance-related impacts from construction activities involving soil excavation or compaction resulting from the use of heavy machinery on the construction site itself or in staging areas. These activities may affect the integrity of artifact-bearing deposits associated with known and as-yet-undiscovered archaeological sites. For all alternatives, unknown or unrecorded archaeological resources, including subsurface buried archaeological deposits, may exist but are currently unidentified. Construction of all Central Valley Wye alternatives would not result in higher potential for public access to archaeological sites because the right-of-way for all Central Valley Wye alternatives would be access controlled and no new access would be provided.

Table 3.17-5 Comparison of Central Valley Wye Alternative Impacts

Impacts	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Construction Impacts				
Archaeological Resources Impacts				
Impact CUL#1: Permanent Disturbance of Unknown Archaeological Sites				
Impacts related to total number of resources	Unknown, mitigation applied	Unknown, mitigation applied	Unknown, mitigation applied	Unknown, mitigation applied
Impact CUL#2: Permanent Disturbance of Known Archaeological Sites				
Impacts related to total number of resources	0	0	0	0
Historic Architectural Resources Impacts				
Impact CUL#3: Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting				

Impacts	SR 152 (North) to Road 13 Wye	SR 152 (North) to Road 19 Wye	Avenue 21 to Road 13 Wye	SR 152 (North) to Road 11 Wye
Impacts related to one historic property: Robertson Boulevard Tree Row	4,516 linear feet disturbed	4,428 linear feet disturbed	5,590 linear feet disturbed	4,088 linear feet disturbed
Operations Impacts				
Archaeological Resources Impacts				
Impact CUL#4: Temporary Public Access and Disturbance of Archaeological Resources	No anticipated intermittent permanent changes to archaeological resources under any of the Central Valley Wye alternatives			
Impact CUL#5: Common Impacts on Archaeological Resources	No anticipated changes to archaeological resources under any of the Central Valley Wye alternatives			
Historic Architectural Resources Impacts				
Impact CUL#6: Intermittent Noise and Vibration Impairments on Historic Architectural Resources	All of the Central Valley Wye alternatives would avoid impacts on historic architectural resources			

Source: Authority, 2018

Surveys identified one newly identified historic architectural resource within the APE, the Chowchilla Canal. Potential impacts on the canal could result from construction activities associated with all Central Valley Wye alternatives. All four Central Valley Wye alternatives would reconfigure an existing culvert where an existing road crosses the Chowchilla Canal. However, for all Central Valley Wye alternatives, the alignment and character-defining features of the Chowchilla Canal would be retained and the canal would continue to function as it has historically by conveying water.

The Avenue 21 to Road 13 Wye Alternative would disturb approximately 5,590 linear feet of the Robertson Boulevard Tree Row entirely in an area where the tree row is relatively intact. The SR 152 (North) to Road 13 Wye Alternative would disturb approximately 4,516 linear feet of the Robertson Boulevard Tree Row, and the SR 152 (North) to Road 19 Wye Alternative would disturb approximately 4,428 linear feet of the tree row. The SR 152 (North) to Road 11 Wye Alternative would disturb approximately 4,088 linear feet of the Robertson Boulevard Tree Row. As such, of the Central Valley Wye alternatives, the SR 152 (North) to Road 11 Wye Alternative would cause the least amount of harm to the resource.

The operations and maintenance of all four Central Valley Wye alternatives are not expected to result in further ground disturbance, visual discord, or vibration that would cause additional impacts on archaeological resources. Intermittent noise and vibration impacts during operations would result in no impact to historic architectural resources. New visual or noise elements resulting from a train passing periodically would not result in changes to the historic alignment of the Chowchilla Canal or prevent the canal from conveying water.

3.17.10 CEQA Significance Conclusions

Table 3.17-6 provides a summary of the CEQA determination of significance for all construction and operations impacts discussed in Section 3.17.7. The CEQA level of significance before and after mitigation for each impact in this table is the same for all Central Valley Wye alternatives.

Table 3.17-6 CEQA Significance Conclusions for Cultural Resources for the Central Valley Wye Alternatives

Impact	CEQA Level of Significance before Mitigation	Mitigation Measures	CEQA Level of Significance after Mitigation
Construction			
Archaeological Resources Impacts			
Impact CUL#1: Permanent Disturbance of Unknown Archaeological Sites	Significant for all alternatives	CUL-MM#1: Amend Archaeological and Built Environment Treatment Plans CUL-MM#2: Mitigate Adverse Impacts on Archaeological and Built Environment Resources Identified During Phased Identification. Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the PA and MOA CUL-MM#3: Halt Work in the Event of an Archaeological Discovery and Comply with the PA, MOA, ATP, and all State and Federal Laws, as applicable	Less than significant
Impact CUL#2: Permanent Disturbance of Known Archaeological Sites	No impact for all alternatives	No mitigation measures are required	Not applicable
Historic Architectural Resources Impacts			
Impact CUL#3: Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting	Significant for all alternatives	CUL-MM#1: Amend Archaeological and Built Environment Treatment Plans CUL-MM#4: Mitigation for Permanent Demolition, Destruction, Relocation, or Alteration of Historic Architectural Resources or Setting— Robertson Boulevard Tree Row	Significant

Impact	CEQA Level of Significance before Mitigation	Mitigation Measures	CEQA Level of Significance after Mitigation
Operations			
Archaeological Resources Impacts			
Impact CUL#4: Temporary Public Access and Disturbance of Archaeological Resources	No impact for all alternatives	No mitigation measures are required	Not applicable
Impact CUL#5: Common Impacts on Archaeological Resources	No impact for all alternatives	No mitigation measures are required	Not applicable
Historic Architectural Resources Impacts			
Impact CUL#6: Intermittent Noise and Vibration Impairments on Historic Architectural Resources	Less than significant for all alternatives	No mitigation measures are required	Not applicable

Source: Authority, 2018

CEQA = California Environmental Quality Act

PA = Programmatic Agreement

MOA = Memorandum of Agreement