

## APPENDIX B: IMPACT AVOIDANCE AND MINIMIZATION FEATURES

The following information is contained in the *California High-Speed Rail Authority Merced to Fresno Section: Central Valley Wye Draft Supplemental Environmental Impact Report (EIR)/ Environmental Impact Statement (EIS) (Draft Supplemental EIR/EIS), Appendix 2-B, California High-Speed Rail: Impact Avoidance and Minimization Features*.

### Impact Avoidance and Minimization Features Definitions

The California High-Speed Rail Authority (Authority) and the Federal Railroad Administration (FRA) have pledged to integrate programmatic impact avoidance and minimization features consistent with the (1) *2005 Statewide Program EIR/EIS*, (2) *2008 Bay Area to Central Valley Program EIR/EIS*, and (3) *2012 Partially Revised Final Program EIR* (Authority and FRA 2005, 2008, 2012) into the high-speed rail (HSR) project. The Authority and FRA will implement these features during project design and construction, as relevant to the Merced to Fresno Section: Central Valley Wye, to avoid or reduce impacts.

Impact avoidance and minimization features (IAMF) incorporated into the Central Valley Wye alternatives design and construction would avoid or minimize the environmental or community impacts. The description of each measure details the means and effectiveness of the measure in avoiding or minimizing impacts, as well as the environmental benefits of implementing the measure. For example, an IAMF can require development of measures to reduce impacts on air quality and hydrology based on applicable design standards that would also reduce impacts on biological resources.

Each IAMF is described in the Draft Supplemental EIR/EIS, Appendix 2-B. The factual basis for the efficacy, feasibility, and implementation of each IAMF is provided. The IAMFs will be included in the mitigation monitoring and enforcement plan to enhance implementation tracking, identify responsible party, and clarify implementation timing.

### Descriptions of Impact Avoidance and Minimization Features

#### Cultural Resources

##### CUL-IAMF#1: Geospatial Data Layer and Archaeological Sensitivity Map

Prior to construction (any ground-disturbing activities) and staging of materials and equipment, the contractor's archaeologist or geoarchaeologist would prepare a geospatial data layer identifying the locations of all known archaeological resources and built historical resources that require avoidance or protection, and areas of archaeological sensitivity that require monitoring within the area of potential effect (APE). The contractor's archaeologist, who meets the Secretary of the Interior's Professional Qualifications Standards provided in 36 Code of Federal Regulations (C.F.R.) Part 61, is to use, as appropriate, a combination of the following: known locations of archaeological sites and built historic properties, tribal consultation, landforms, depositional processes, distance to water, mapping provided in the archaeological treatment plan (ATP), or historic mapping. This mapping is to be updated as the design progresses if it results in an expansion of the area of ground disturbance/APE, including temporary construction easements and new laydown and access areas. This mapping would be used to develop an archaeological monitoring plan to be prepared by the contractor's archaeologist, and upon approval by the Authority, implemented by the contractor's archaeologist. When design is sufficiently advanced, a geospatial data layer would be produced by the contractor overlaying the locations of all known archaeological resources and built historic resources within the APE, for which avoidance measures are necessary, and all archaeologically sensitive areas, for which monitoring is required.

##### CUL-IAMF#2: Worker Environmental Awareness Program (WEAP) Training Session

Prior to construction (any ground-disturbing activity), construction contractor personnel who work on-site would attend a worker environmental awareness program (WEAP) training session provided by the contractor. The WEAP would include cultural resources awareness training

performed by the contractor's archaeologist who meets the Secretary of the Interior's Professional Qualification Standards provided in 36 C.F.R. Part 61. The contractor would develop instructional materials and a fact sheet for distribution to the construction crews, and submit the materials, as well as qualifications of the personnel providing the training, to the Authority for approval at least 15 days prior to being permitted on-site access. The training would address measures required to avoid or protect built historic resources, educate crews on artifacts and archaeological features they may encounter, and the mandatory procedures to follow should potential cultural resources be exposed during construction. Translation services would be provided by the contractor for non-English-speaking participants. The training sessions would be given prior to the initiation of any ground disturbance and repeated on an annual basis. Additionally, new construction crewmembers would attend an initial WEAP training session prior to working onsite.

On completion of the WEAP training, construction crews would sign a form stating that they attended the training, understood the information presented, and would comply with the WEAP requirements. The contractor's archaeologist would submit the signed WEAP training forms to the mitigation manager on a monthly basis. On an annual basis, the contractor would provide the Authority with a letter indicating that regular WEAP training had been implemented and would provide at least one PowerPoint annually of the WEAP training. On a monthly basis, the contractor's archaeologist would provide updates and synopsis of the training to workers during the daily safety ("tailgate") meeting. Construction crews would be informed during the WEAP training that, to the extent possible, travel within the marked project site would be restricted to established roadbeds.

### **CUL-IAMF#3: Preconstruction Cultural Resource Surveys**

Prior to construction (any ground-disturbing activity in areas not yet surveyed) and staging of materials and equipment, the contractor would conduct pre-construction cultural resource surveys. Resulting from lack of legal access, much of the project footprint may not have been surveyed. Once parcels are accessible, the contractor would have archaeologists or architectural historians, as appropriate, who meet the Secretary of the Interior professional qualification standards survey and complete reporting in appropriate document for archaeology and/or built resources, in accordance with documentation requirements stipulated in the Programmatic Agreement. Identified resources would be evaluated for the National Register of Historic Places and the California Register of Historical Resources. The qualified archaeologist or architectural historian, as appropriate, would assess the potential to affect to historic properties by applying the effects criteria in 36 C.F.R. Part 800.5(a)(1) and the potential of significant impacts on historical resources by applying the criteria in California Environmental Quality Act Guidelines 15064.5(b). Should the Authority and FRA determine, in consultation with the State Historic Preservation Office (SHPO), that any newly identified historic properties or historical resources would be adversely affected, the built environment treatment plan (BETP) or ATP, as appropriate, would be amended, to document mitigation measures agreed upon by the Memorandum of Agreement (MOA) signatories. The schedule of these surveys would be dependent on the timing of obtaining legal access to the properties and may be driven by the need to complete construction-related activities (e.g., geotechnical borings, laydown yards). Prior to beginning surveys, updated records searches may be required by the Authority and FRA, depending on the length of the passage of time, to validate that accurate information was obtained regarding previous inventory and evaluation efforts. The contractor's archaeologist, in consultation with the Authority, would determine if an updated records search is required. If an updated records search is necessary, the search would be performed by the contractor's archaeologist.

### **CUL-IAMF#4: Relocation of Project Features when Possible**

Changing the rail alignment to avoid newly discovered sites is likely infeasible; however, access areas and laydown sites may be relocated should their proposed location be found to be on archaeological sites or have the potential to affect historic built resources in the vicinity. The contractor would delineate all avoidance and protection measures for identified archaeological and built resources on construction drawings.

### **CUL-IAMF#5: Archaeological Monitoring Plan and Implementation**

Prior to construction (any ground-disturbing activity), the contractor's professionally qualified archaeologist, as defined in the Programmatic Agreement, would prepare a monitoring plan based on the results of geospatial data layer and archaeological sensitivity map. The plan would be reviewed and approved by the Authority prior to any ground-disturbing activities. During construction or staging of materials or equipment, the contractor would be responsible for implementing the monitoring plan and providing archaeological and tribal monitoring of ground-disturbing construction activities with a potential to affect archaeological remains in areas identified as archaeologically sensitive in the ATP. The contractor would obtain Authority approval of all persons providing archaeological or tribal monitoring.

### **CUL-IAMF#6: Preconstruction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage**

Prior to construction (any ground-disturbing activity within 1,000 feet of a historic built property) the contractor may be required to assess the condition of construction-adjacent historic properties, and prepare a plan for the protection of historic built resources and repair of inadvertent damage. The MOA and BETP would stipulate for which properties the plan is to be prepared. MOA signatories and consulting parties may comment on the adequacy of the assessments. Protection measures would be developed in consultation with the landowner or land-owning agencies as well as the SHPO and the MOA signatories and consulting parties, as required by the Programmatic Agreement. As the design progresses, additional properties may be identified by the Authority as requiring this plan. The plan would record existing conditions in order to (1) establish a baseline against which to compare the property's post-project condition, (2) identify structural deficiencies that make the property vulnerable to project construction-related damage, such as vibration, and (3) identify stabilization or other measures required to avoid or minimize inadvertent adverse effects. The plan would be further described in the BETP and be prepared by an interdisciplinary team, including (but not limited to) as appropriate, an architectural historian, architect, photographer, structural engineer, and acoustical engineer. Ambient conditions would be used to identify buildings that are sensitive receptors to construction-related vibration and require vibration monitoring during construction activities. Additional protective measures may be required if the property is vacant during construction.

The plan content would be outlined in the BETP and would be completed and approved by the Authority, with protective measures implemented before construction begins within 1,000 feet of the subject building. The plan would describe the protocols for documenting inadvertent damage (should it occur), as well as notification, coordination, and reporting to the SHPO, MOA signatories, and the owner of the historic property. The plan would direct that inadvertent damage to historic properties would be repaired in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (U.S. Department of the Interior 1995). The plan would be developed in coordination with the Authority and FRA and would be submitted to the SHPO for review and approval. Protective plans would be required for buildings that would be moved as part of the project mitigation, including stabilization before, during, and after relocation; protection during temporary storage; and relocation to a new site, followed by rehabilitation.

### **CUL-IAMF#7: Built Environment Monitoring Plan**

Prior to construction (any ground-disturbing activity within 1,000 feet of a historic property or resource) the contractor would prepare a built environment monitoring plan. Draft and final versions would describe 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. Maximum vibration thresholds may be established in the plan for protection of historic resources and repair of inadvertent damage, the monitoring of which would be included in this monitoring plan. The BETP would outline the process for corrective action should the protection measures prove ineffective. Consultation procedures would also be defined in the BETP. The contractor would develop both the draft and final plans in coordination with the Authority and FRA, and the plan would be submitted to the SHPO for review and approval. The plan would be

implemented prior to any ground-disturbing activities within 1,000 feet of properties identified as requiring monitoring, as specified in the BETP.

**CUL-IAMF#8: Implement Protection and/or Stabilization Measures**

Prior to construction, the contractor would implement protection and/or stabilization measures as for protection of historic resources and repair of inadvertent damage and as described in the BETP. Such protection measures would include, but would not be limited to, vibration monitoring of construction near historic properties; cordoning off of resources from construction activities (e.g., traffic, equipment storage, personnel); shielding of resources from dust or debris; and stabilization of buildings adjacent to construction. Temporary stabilization and protection measures would be removed after construction is complete, and the historic properties would be restored to their pre-construction condition. For buildings that would be moved, treatment would include stabilization before, during, and after relocation; protection during temporary storage; and relocation to a new site, followed by rehabilitation.

## References

Authority	California High-Speed Rail Authority
FRA	Federal Railroad Administration

- California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement for the Proposed California High-Speed Train System*. Sacramento, CA and Washington, DC.
- . 2008. *Final Bay Area to Central Valley High-Speed Train Program Environmental Impact Report/Environmental Impact Statement*. Sacramento, CA and Washington, DC.
- . 2012. *Bay Area to Central Valley High-Speed Train Partially Revised Final Program Environmental Impact Report*. Sacramento, CA. April 2012.
- U.S. Department of the Interior. 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. National Park Service; Washington, D.C.