

STAFF REPORT

53

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W 27137

C. Hudson

GENERAL LEASE – PUBLIC AGENCY USE

APPLICANT:

California High-Speed Rail Authority

PROPOSED LEASE:

AREA, LAND TYPE, AND LOCATION:

0.37-acre more or less of sovereign land crossing the Kings River old channel, near Laton, Kings County.

AUTHORIZED USE:

Construction, use, and maintenance of a new electric-powered high-speed, steel-wheel-on-steel-rail train system and steel truss bridge crossing; and temporary construction area.

LEASE TERM:

25 years, beginning June 28, 2019.

CONSIDERATION:

The public use and benefit, with the State reserving the right at any time to set a monetary rent if the Commission finds such action to be in the State's best interests.

SPECIFIC LEASE PROVISIONS:

- At all times during construction, Lessee agrees to install cautionary signage or warning buoys upstream and downstream of the construction in the river in order to provide adequate warning notices to recreational users on the Kings River of the potential safety hazards associated with Project construction.
- Construction activities in the Kings River may occur only during the annual in-water work window between September 1 and February 28 unless Lessee obtains approval to conduct project-related activities outside the specified window from all regulatory authorities with jurisdiction over the project.
- Construction: Within 60 days of completion of construction of the High-Speed Train, Lessee shall provide Lessor a set of as-builts

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detailing the location of the improvements including, if necessary, revised Exhibits A and B. the revised Exhibits shall be incorporated into the Lease and shall replace the existing Exhibits, upon review and written approval by the Commission's Executive Officer or designee.

STAFF ANALYSIS AND RECOMMENDATION:

Authority:

Public Resources Code sections 6005, 6216, 6301, 6501.1, and 6503; California Code of Regulations, title 2, sections 2000 and 2003.

Public Trust and State's Best Interests Analysis:

The California High-Speed Rail Authority (Rail Authority) has responsibility for planning, designing, constructing, and operating the California High-Speed Train. Its mandate is to develop a high-speed rail system coordinating with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports. The High-Speed Train (HST) System would provide intercity, high-speed service on more than 800 miles of tracks throughout California, connecting the major population centers of Sacramento, the San Francisco Bay area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. It would use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and enhanced automatic train-control systems, with trains capable of operating up to 220 miles per hour over a fully grade-separated, dedicated track alignment.

The Rail Authority has applied to the Commission for authorization to construct and operate a rail line to support an intercity high-speed rail system from Fresno to Bakersfield. The proposed Project is a continuation of the Phase 1 link connecting from Merced to Fresno that is covered under a separate lease, Lease No. PRC 9058.9. That lease was authorized by the Commission on April 26, 2013, for a 25-year term, expiring on April 25, 2038 ([Item C72, April 26, 2013](#)). The overall project will consist of two phases. Phase 1 will connect San Francisco to Los Angeles/Anaheim via the Pacheco Pass and the Central Valley with a mandated express travel time of approximately 2 hours. Phase 2 will connect the Central Valley to Sacramento and will extend the system from Los Angeles to San Diego.

The proposed Fresno to Bakersfield section of the HST System is approximately 114 miles long and traverses a variety of land uses,

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including waterbodies, farmlands, large cities, and small cities. The route of the Fresno to Bakersfield section passes by or through the rural communities of Bowles, Laton, Armona, and Allensworth and the cities of Fresno, Hanford, Selma, Corcoran, Wasco, Shafter, McFarland, and Bakersfield. The Rail Authority anticipates service would be provided between Fresno and Bakersfield by 2022.

The proposed Project within the lease premises consists of a large-span steel truss bridge crossing the Kings River old channel on the Hanford East alignment which is located approximately 8 miles north of the city of Hanford and 4 miles east of the town of Laton. The current design concept of the viaduct foundation configuration consists of 10-foot-diameter columns that are generally spaced 100 to 121.5 feet apart on center. The viaduct is a truss bridge that crosses over the Kings River old channel immediately downstream of an existing earthen low-flow crossing, with two spans of 322 feet each and a two-column pier located in the main channel. The crossing will pass a maximum height above ground of 40 feet. The truss bridge will be constructed so that it will not impact the federal levees or the riverbanks. The bridge pier and abutment foundations will have 15 feet of horizontal setback from the toe of the levees. The minimum vertical clearance from the top of the levee to the bridge substructure is 18 feet.

The HST System is expected to benefit the public by using clean renewable energy, improving air quality (especially in these regions of the Central Valley) by reducing vehicle miles of travel, reduce daily flights in the State, and contributing to economic development. The Kings River old channel could be accessed by the public from both south and north banks through 8th Avenue, about 3,000 feet east of the HST System alignment. In this particular area, there is very little recreational use from the public due to the low river flow or in some cases dry riverbed. The location is also a factor since most of the land is private land with little public access opportunities. The area during construction may not be fully accessible due to the heavy equipment used during construction and for public safety reasons, but otherwise will be accessible adjacent to the project. Once construction is completed, the truss bridge crossing the Kings River old channel will not substantially impair the public rights to navigation, fishing, or other Public Trust needs and values at this location, at this time, and for the foreseeable term of the lease.

The lease is limited to a 25-year term and does not grant the lessee exclusive rights to the lease premises. Upon termination of the lease, the lessee may be required to remove all improvements from the lease

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premises. The proposed lease would require the lessee to indemnify the State for any liability incurred as a result of the lessee's activities thereon.

Climate Change Analysis:

The Project area is not tidally influenced and, therefore, would not be subject to sea-level rise. However, as stated in *Safeguarding California Plan: 2018 Update* (California Natural Resources Agency 2018), climate change is projected to increase the frequency and severity of natural disasters related to flooding, drought, and storms. In rivers, more frequent and powerful storms can result in increased flooding conditions and damage from storm-created debris. Conversely, prolonged droughts could dramatically reduce river flow and water levels, leading to loss of public access and navigability. Climate change will further influence riverine areas by changing erosion and sedimentation rates, and flooding and storm flow, as well as runoff, will likely increase scour, decreasing bank stability at a faster rate.

Due to these potential changes, Project-related facilities (e.g., truss bridge) may experience flooding and more frequent storm events, which may require frequent maintenance or replacement of these facilities to ensure continued function during and after storm season. Regular maintenance of the truss bridge, as required by the lease, will reduce the likelihood of severe structural degradation. Pursuant to the proposed lease, the Rail Authority acknowledges that the lease premises may be subject to effects of climate change.

Greenhouse Gas Emissions:

The Rail Authority has committed to using 100 percent renewable energy for powering the system. This is a unique commitment and will help achieve California's greenhouse gas reduction targets using the abundance of renewable energy resources in California: sun, wind, geothermal, and bioenergy. While the precise contracts and agreements will be worked out over the next several years, the ultimate result will be a net-zero rail system. Net-zero is achieved by procuring or producing enough renewable energy to offset the amount of energy it would take from the State's power grid to operate trains and facilities. Using 100 percent renewable energy would reduce air emissions and would help reduce the effects of climate change.

Environmental Justice:

The Commission is committed to promoting equity and advancing environmental justice through inclusive decision-making processes to consider the disproportionate burdens and benefits on disadvantaged

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communities and Native Nations through its Environmental Justice Policy and Implementation Blueprint (<https://www.slc.ca.gov/wp-content/uploads/2018/11/EJPolicy.pdf>).

Staff used CalEnviroScreen 3.0 (<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>) to better understand whether any disadvantaged or vulnerable communities are located near the proposed Project site. CalEnviroScreen is a screening tool developed by the Office of Environmental Health Hazard Assessment and the California Environmental Protection Agency that evaluates the existing pollution burden from many sources while factoring in the community's potential vulnerability to pollution's effects.

CalEnviroScreen ranks census tracts in California based on their exposures to pollutants, adverse environmental conditions, socioeconomic factors, and public health data. It provides a pollution burden score for each census tract based on 12 indicators, as well as a population characteristics score based on 8 indicators. Together the scores are multiplied to derive a final CalEnviroScreen score. The most burdened and vulnerable communities are represented with the highest scores, 91 to 100 percentile, and indicated in the color red on the CalEnviroScreen map. The least burdened communities are found in the 1 to 10 percentile score and shown on the map in darker green colors.

The proposed Project site is located within a census tract that scored in the 70 to 75 percentile. The specific population at the Project site (under Commission's jurisdiction) is located within a census tract that is identified with a high pollution burden score, but lower population characteristic vulnerabilities. This census tract also has a poverty rate in the 57 percentile, meaning that 43 percentile of census tracts in CalEnviroScreen have higher rates of poverty. This tract also has a minority population of 42 percentile, indicating that 58 percentile of census tracts in CalEnviroScreen have higher minority populations. Therefore, the neighborhood surrounding the proposed Project site has a high percentage of minority and low-income individuals. CalEnviroScreen scores for the adjacent census tracts range from the 30 percentile up to the 95 percentile.

Environmental justice was analyzed in the Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Many meetings were held with local officials, including public, local and regional organizations, Tribes, and government agencies. These meetings also included representatives of affected communities along the HST alternative routes,

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including those communities containing predominantly minority and low-income populations. As the Project developed, more analysis was included in the “Socioeconomics, Communities, and Environmental Justice” sections of the Draft EIR, the Revised Draft EIR, the Final EIR, and the Draft Supplemental EIR available at the Project’s site at http://www.hsr.ca.gov/Programs/Statewide_Rail_Modernization/Project_Sections/fresno_bakersfield.html.

In addition to the outreach described above, Commission staff reached out to the following environmental justice groups and advocates to identify any specific environmental justice concerns near the proposed Project site under the Commission’s jurisdiction:

- On May 15, 2019, staff contacted the San Joaquin Valley Air Pollution Control District (SJVAPCD) EJ Committee, who provided contact information for the Central Valley Air Quality Coalition.
- On May 16, 2019, staff emailed the Central Valley Air Quality Coalition and has not received a response to date.

Tribal Coordination and Outreach:

The Federal Railroad Administration (FRA) initiated coordination and outreach to the State Historic Preservation Officer and Tribes in 2009. The FRA contacted representatives from a total of 27 Tribes, and Formal Consultation with federally recognized Tribes began in 2010. Subsequently, a Programmatic Agreement pursuant to Section 106 of the National Historic Preservation Act was completed in 2011. Six Tribal governments elected to participate as Consulting Parties for the Programmatic Agreement. Results from a Sacred Lands File search, along with formal and informal consultations with federally and non-federally recognized Tribes (listed in Table 3.17-3 in the Final EIR starting on page 3.17-25), indicated that Native American cultural resources were present within a 0.5-mile radius of the project sites. For the Fresno to Bakersfield segment, on August 12, 2015, the FRA sent letters and project maps to the six Consulting Parties from the Programmatic Agreement. As the Project developed, additional analysis was added to the “Cultural and Paleontological Resources” sections of the environmental documents available at http://www.hsr.ca.gov/Programs/Statewide_Rail_Modernization/Project_Sections/fresno_bakersfield.html. As required by Mitigation Measures CUL-MM #2 through CUL-MM #4, CUL-MM #17, and CUL-MM #18 (see attached Exhibit C), Consultation with Tribes will be ongoing as a means of reducing or avoiding impacts to cultural resources and complying with the Programmatic Agreement.

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Conclusion:

For the reasons stated above, staff believes the issuance of the proposed lease will not substantially impair the public rights to navigation, fishing, or other Public Trust needs and values at this location, as this time, and for the foreseeable term of the proposed lease; and is in the best interests of the State.

OTHER PERTINENT INFORMATION:

1. Approval or denial of the application is a discretionary action by the Commission. Each time the Commission approves or rejects a use of sovereign land, it exercises legislatively delegated authority and responsibility as trustee of the State's Public Trust lands as authorized by law. Upon expiration or prior termination of the lease, the lessee also has no right to a new lease or to renewal of any previous lease.
2. This action is consistent with Strategy 1.1 of the Commission's Strategic Plan to deliver the highest levels of public health and safety in the protection, preservation and responsible economic use of the lands and resources under the Commission's jurisdiction, and with Strategy 1.4 to incorporate strategies to address climate change, adapt to sea-level rise, incentivize water conservation, and reduce greenhouse gas emissions and the generation of litter and debris into all the Commission's planning processes, project analyses and decisions.
3. During operation of the HST System, programmed inspection and maintenance would be performed to verify that the Project components are functioning as required. The Rail Authority would regularly perform maintenance along the track and railroad right-of-way as well as the power systems, train control, signaling, communications, and other vital systems required for the safe operation of the HST System. Maintenance for the HST System would include inspection and repair of the rail line, the power supply system, structures, signaling/control components, stations, and the maintenance facilities. The maintenance will also include drain cleaning, vegetation control, and litter removal along the right-of-way, aerial structures, and bridge sections.
4. An EIR/EIS, State Clearinghouse No. 2009091126, was prepared for this Project by the Rail Authority and certified on May 7, 2014. After certifying the EIR, the Rail also prepared a Supplemental EIR and certified it on October 16, 2018, which analyzed a new alternative (Locally Generated Alternative) for the Fresno to Bakersfield Project Section, that did not involve lands under the Commission's jurisdiction. Staff has reviewed these documents and Mitigation Monitoring Program prepared pursuant to

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the provisions of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21081.6) and adopted by the lead agency.

Findings made in conformance with the State CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15091, 15096) are contained in the attached Exhibit D.

5. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but such activity will not affect those significant lands. Based upon staff's consultation with the persons nominating such lands and through the CEQA review process, it is staff's opinion that the Project, as proposed, is consistent with its use classification.

APPROVALS OBTAINED:

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
California Department of Fish and Wildlife
State Water Resources Control Board

FURTHER APPROVALS REQUIRED:

NOAA Fisheries
Central Valley Regional Water Quality Control Board

EXHIBITS:

- A. Legal Description
- A-1. Legal Description – Temporary Construction Area
- B. Site and Location Map
- C. Mitigation Monitoring Program
- D. Findings

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

Find that an EIR/EIS, State Clearinghouse No. 2009091126, was prepared for this Project by the Rail Authority and certified on May 7, 2014, and that the Commission has reviewed and considered the information contained therein.

Adopt the Mitigation Monitoring Program, as contained in the attached Exhibit C.

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Adopt the Findings, made in conformance with California Code of Regulations, title 14, sections 15091 and 15096, subdivision (h), as contained in the attached Exhibit D.

Determine that the Project, as approved, will not have a significant effect on the environment.

PUBLIC TRUST AND STATE'S BEST INTERESTS:

Find that the issuance of the proposed lease will not substantially impair the public rights to navigation, fishing, or other Public Trust needs and values at this location, at this time, and for the foreseeable term of the lease; and is in the best interests of the State.

SIGNIFICANT LANDS INVENTORY FINDING:

Find that this activity is consistent with the use classification designated by the Commission for the land pursuant to Public Resources Code section 6370 et seq.

AUTHORIZATION:

1. Authorize issuance of a General Lease – Public Agency Use to the California High-Speed Rail Authority beginning June 28, 2019, for a term of 25 years, for the construction, use, and maintenance of new electric-powered high-speed, steel-wheel-on-steel-rail train system, and steel truss bridge crossing as described in Exhibit A, Legal Description, Exhibit A-1, Temporary Construction Area, and shown on Exhibit B, Site and Location Map (for reference purposes only) attached and by this reference made a part hereof; consideration being the public use and benefit, with the State reserving the right at any time to set a monetary rent if the Commission finds such action to be in the State's best interests.
2. Authorize the Executive Officer or her designee to replace Exhibits in the lease upon submission, review, and approval of as-built plans detailing the final location of the new improvements following construction and installation.

EXHIBIT A
LEGAL DESCRIPTION

FB-16-0380-1 (Lease)

That portion of the Kings River, as shown on "Map of Queen Wilhemina Colony", recorded in Volume 2 of Plats at Page 44, records of Tulare County, California and recorded on Page 29 in Map Book, records of Kings County, California, also as shown on a "Map of Sections 20, 21, 22 and 29, Township 17 South, Range 22 East", filed in Volume 1 of Licensed Surveyors Plats at page 67, records of said Kings County, situated in said Section 20, Township 17 South, Range 22 East, Mount Diablo Meridian, in said Kings County described as follows:

COMMENCING at the Northeasterly corner of Parcel FB-16-0025-1, as described in a Grant Deed recorded as Document Number 1511436, on July 17, 2015, being on the South line of said Section 20, also being the beginning of a non-tangent curve, hereinafter called Curve "A", concave southwesterly, having a radius of 36,525.00 feet, to which beginning of curve a radial bears North 60°32'47" East;

thence northwesterly along said Curve "A", through a central angle of 01°32'03", an arc distance of 977.99 feet, to the West line of the Southeast-quarter of said Section 20, also being the East line of Parcel 3, as shown on a Parcel Map filed in Book 4 of Parcel Maps at Page 57, records of said Kings County;

thence along said East line of Parcel 3, North 01°16'25" East a distance of 28.09 feet, to the beginning of a non-tangent curve, concentric with and 15-feet northeasterly from said Curve "A", concave southwesterly, having a radius of 36,540.00 feet, to which beginning of curve a radial bears North 58°58'30" East;

thence northwesterly along said concentric curve, through a central angle of 00°16'19", an arc distance of 173.41 feet, to a point on said curve intersecting the Northwesterly line of said Parcel 3, to which a radial bears North 58°42'11" East, said point also being the true **POINT OF BEGINNING**;

thence continuing northwesterly along said concentric curve, through a central angle of 00°17'59", an arc distance of 191.10 feet, to the Southeasterly line of Lot 27, of said "Map of Sections 20, 21, 22 and 29";

thence along said Southeasterly line, South 53°18'40" West a distance of 1.45 feet, to an angle point on said Southeasterly line;

thence continuing along said Southeasterly line, South 51°03'40" West a distance of 79.20 feet, to the beginning of a non-tangent curve, concentric with and 65-feet southwesterly from the northwesterly continuation of said Curve "A", concave southwesterly, having a radius of 36,460.00 feet, to which beginning of curve a radial bears North 58°25'10" East;

thence southeasterly along said concentric curve, through a central angle of 00°20'18", an arc distance of 215.26 feet, to said Northwesterly line;

thence along said Northwesterly line, North 35°11'08" East a distance of 87.26 feet, to the **POINT OF BEGINNING**.

EXCEPTING THEREFROM any portion lying landward of the ordinary low water marks of the left and right banks of said Kings River

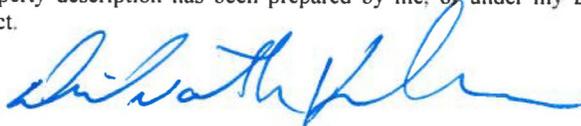
The above described parcel contains 16,257 square feet, more or less.

Bearings and distances in the above description are based on the California Coordinate System 1983, Zone 4, Epoch 2007.00, as shown on Record of Survey recorded in Volume 24 of Licensed Surveyors' Plats at Page 8, Kings County Records. Divide grid distances herein above by 0.999938170 to obtain ground level distances.

END OF DESCRIPTION

This real property description has been prepared by me, or under my Direction, in conformance with the Professional Land Surveyors' Act.

Signature:



Date: 6/17/2019



EXHIBIT A-1
LEGAL DESCRIPTION

FB-16-0380-2 (Temporary Construction Easement)

A temporary easement for construction purposes and incidents thereto in and across that portion of the Kings River, as shown on "Map of Queen Wilhemina Colony", recorded in Volume 2 of Plats at Page 44, records of Tulare County, California, and recorded on Page 29 in Map Book, records of Kings County, California, also as shown on a "Map of Sections 20, 21, 22 and 29, Township 17 South, Range 22 East", filed in Volume 1 of Licensed Surveyors Plats at page 67, records of said Kings County, situated in Section 20, Township 17 South, Range 22 East, Mount Diablo Meridian, in said County of Kings, described as follows:

COMMENCING at the Northeasterly corner of Parcel FB-16-0025-1, as described in a Grant Deed recorded as Document Number 1511436, on July 17, 2015, being on the South line of said Section 20, also being the beginning of a non-tangent curve, hereinafter called Curve "A", concave southwesterly, having a radius of 36,525.00 feet, to which beginning of curve a radial bears North 60°32'47" East;

thence northwesterly along said Curve "A", through a central angle of 01°32'03", an arc distance of 977.99 feet, to the West line of the Southeast-quarter of said Section 20, also being the East line of Parcel 3, as shown on a Parcel Map filed in Book 4 of Parcel Maps at Page 57, records of said Kings County;

thence along said East line of Parcel 3, North 01°16'25" East a distance of 28.09 feet, to the beginning of a non-tangent curve, concentric with and 15-feet northeasterly from the northwesterly continuation of said Curve "A", concave southwesterly, having a radius of 36,540.00 feet, to which beginning of curve a radial bears North 58°58'30" East;

thence northwesterly along said concentric curve, through a central angle of 00°16'19", an arc distance of 173.41 feet, to a point on said concentric curve intersecting the Northwesterly line of said Parcel 3, having a radius of 36,540.00 feet, to which a radial bears North 58°42'11" East, said point also being the true **POINT OF BEGINNING**;

thence continuing northwesterly along said concentric curve, through a central angle of 00°17'59", an arc distance of 191.10 feet, to the Southeasterly line of Lot 27, of said "Map of Sections 20, 21, 22 and 29";

thence along said Southeasterly line, North 53°18'40" East a distance of 15.06 feet, to the beginning of a non-tangent curve, concentric with and 30-feet northeasterly from the northwesterly continuation of said Curve "A", concave southwesterly, having a radius of 36,555.00 feet, to which beginning of curve a radial bears North 58°24'05" East;

thence southeasterly along said concentric curve, through a central angle of 00°17'29", an arc distance of 185.99 feet, to said northwesterly line of Parcel 3;

thence along said Northwesterly line, South 35°11'08" West a distance of 16.36 feet, to the **POINT OF BEGINNING**.

EXCEPTING THEREFROM any portion lying landward of the ordinary low water marks of the left and right banks of said Kings River

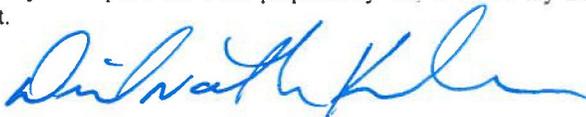
The above described parcel contains 2,828 square feet, more or less.

This easement shall become null and void and the rights to the above described temporary easement shall cease and terminate on August 15, 2022. Such rights may also be terminated prior to the above date by grantee upon notice to grantor.

Bearings and distances in the above description are based on the California Coordinate System 1983, Zone 4, Epoch 2007.00, as shown on Record of Survey recorded in Volume 24 of Licensed Surveyors' Plats at Page 8, Kings County Records. Divide grid distances herein above by 0.999938170 to obtain ground level distances.

END OF DESCRIPTION

This real property description has been prepared by me, or under my Direction, in conformance with the Professional Land Surveyors' Act.

Signature: 

Date: 06/17/2019



EXHIBIT A-2
LEGAL DESCRIPTION

FB-16-0380-3 (Temporary Construction Easement)

A temporary easement for construction purposes and incidents thereto in and across that portion of the Kings River, as shown on "Map of Queen Wilhemina Colony", recorded in Volume 2 of Plats at Page 44, records of Tulare County, California, and recorded on Page 29 in Map Book, records of Kings County, California, also as shown on a "Map of Sections 20, 21, 22 and 29, Township 17 South, Range 22 East", filed in Volume 1 of Licensed Surveyors Plats at page 67, records of said Kings County, situated in Section 20, Township 17 South, Range 22 East, Mount Diablo Meridian, in said County of Kings, described as follows:

COMMENCING at the Northeasterly corner of Parcel FB-16-0025-1, as described in a Grant Deed recorded as Document Number 1511436, on July 17, 2015, being on the South line of said Section 20, also being the beginning of a non-tangent curve, hereinafter called Curve "A", concave southwesterly, having a radius of 36,525.00 feet, to which beginning of curve a radial bears North 60°32'47" East;

thence northwesterly along said Curve "A", through a central angle of 01°32'03", an arc distance of 977.99 feet, to the West line of the Southeast-quarter of said Section 20, also being the East line of Parcel 3, as shown on a Parcel Map filed in Book 4 of Parcel Maps at Page 57, records of said Kings County;

thence along said East line of Parcel 3, North 01°16'25" East a distance of 28.09 feet, to the beginning of a non-tangent curve, concentric with and 15-feet northeasterly from said Curve "A", concave southwesterly, having a radius of 36,540.00 feet, to which beginning of curve a radial bears North 58°58'30" East;

thence northwesterly along said concentric curve, through a central angle of 00°16'19", an arc distance of 173.41 feet, to a point on said concentric curve intersecting the Northwesterly line of said Parcel 3, having a radius of 36,540.00 feet, to which a radial bears North 58°42'11" East;

thence continuing northwesterly along said concentric curve, through a central angle of 00°17'59", an arc distance of 191.10 feet, to the Southeasterly line of Lot 27 of Section 20, as shown on said "Map of Sections 20, 21, 22 and 29";

thence along said Southeasterly line, South 53°18'40" West a distance of 1.45 feet, to an angle point on said Southeasterly line;

thence continuing along said Southeasterly line, South 51°03'40" West a distance of 79.20 feet, to the beginning of a non-tangent curve, concentric with and 65-feet southwesterly from the northwesterly continuation of said Curve "A", concave southwesterly, having a radius of 36,460.00 feet, to which beginning of curve a radial bears North 58°25'10" East, also being the true **POINT OF BEGINNING**;

thence southeasterly along said curve, through a central angle of 00°20'18", an arc distance of 215.26 feet, to said Northwesterly line of Parcel 3;

thence along said Northwesterly line, South 35°11'08" West a distance of 136.42 feet, to the beginning of a non-tangent curve, concentric with and 190-feet southwesterly from the northwesterly continuation of said Curve "A", concave southwesterly, having a radius of 36,335.00 feet, to which beginning of curve a radial bears North 58°50'38" East;

thence northwesterly along said concentric curve, through a central angle of 00°23'43", an arc distance of 250.73 feet, to said Southeasterly line of Lot 27;

thence along said Southeasterly line, North 34°53'40" East a distance of 7.85 feet, to an angle point on said Southeasterly line;

thence continuing along said Southeasterly line, North 51°03'40" East a distance of 118.78 feet, to the **POINT OF BEGINNING**.

EXCEPTING THEREFROM any portion lying landward of the ordinary low water marks of the left and right banks of said Kings River

The above described parcel contains 29,254 square feet, more or less.

This easement shall become null and void and the rights to the above described temporary easement shall cease and terminate on August 15, 2022. Such rights may also be terminated prior to the above date by grantee upon notice to grantor.

Bearings and distances in the above description are based on the California Coordinate System 1983, Zone 4, Epoch 2007.00, as shown on Record of Survey recorded in County Records. Divide grid distances herein above by 0.999938170 to obtain ground level distances.

END OF DESCRIPTION

This real property description has been prepared by me, or under my Direction, in conformance with the Professional Land Surveyors' Act.

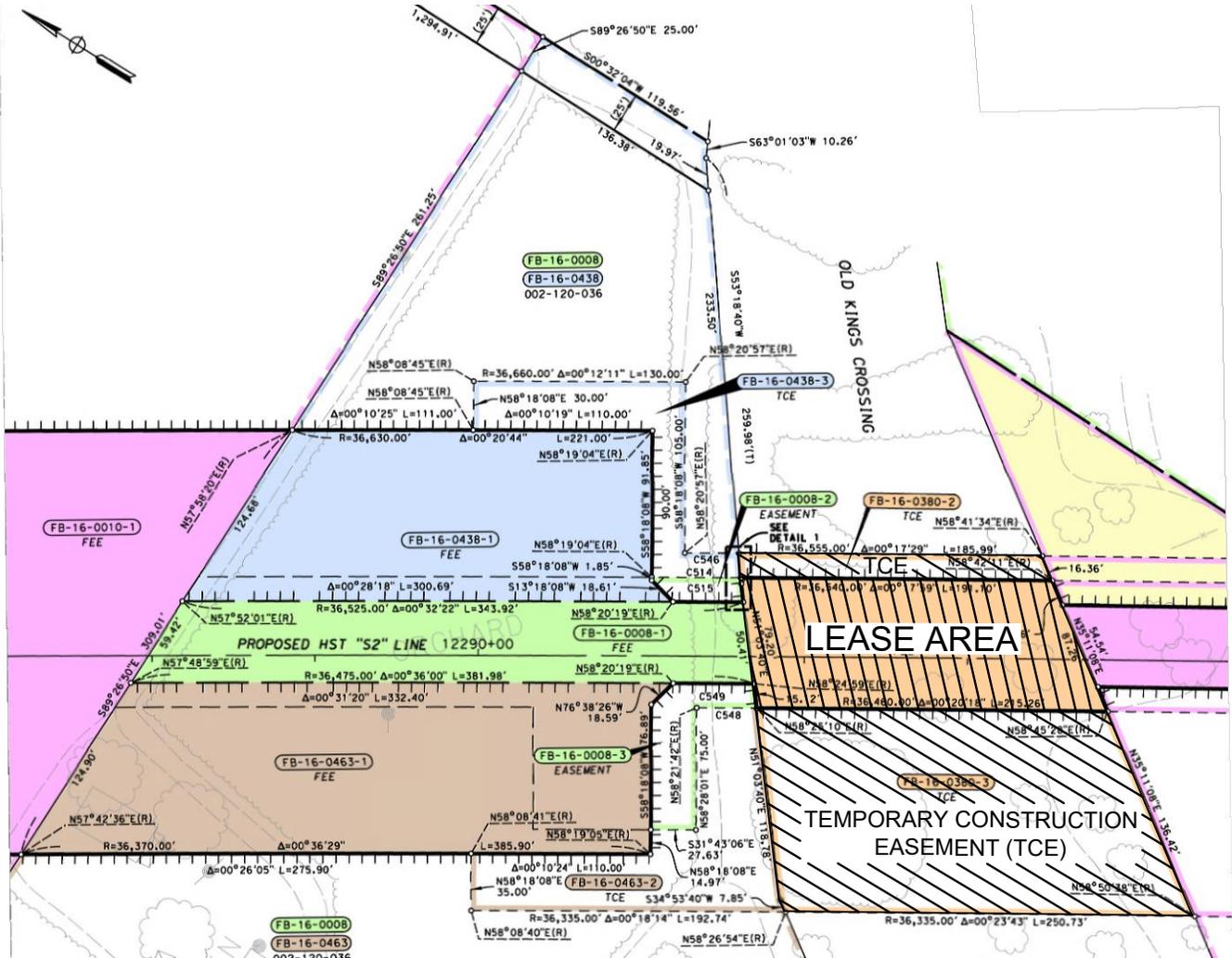
Signature: 

Date: 3/30/2017



NO SCALE

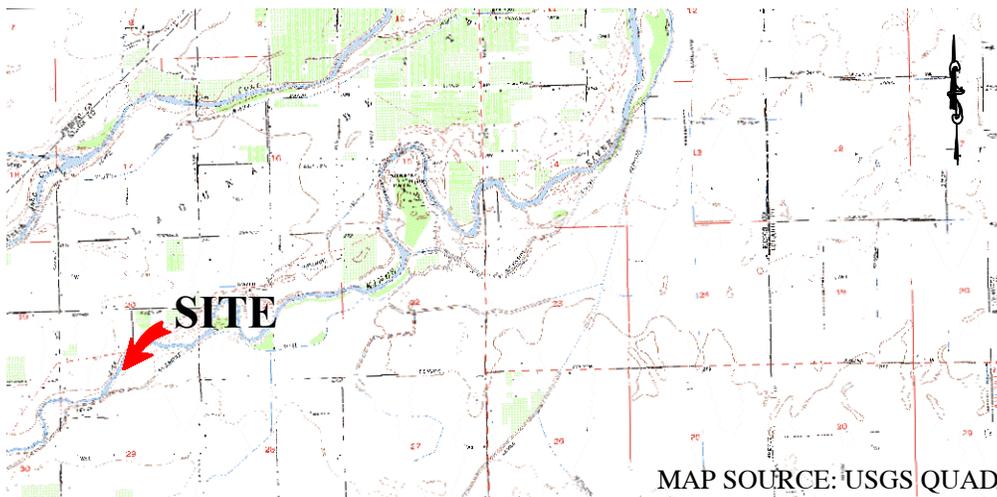
SITE



KINGS RIVER CROSSING, HIGH SPEED RAIL

NO SCALE

LOCATION



MAP SOURCE: USGS QUAD

EXHIBIT B

W27137

CALIFORNIA HIGH SPEED
RAIL AUTHORITY
APN 056-090-15, 002-060-016,
002-120-036
GENERAL LEASE -
PUBLIC AGENCY USE
KINGS COUNTY



THIS EXHIBIT IS SOLELY FOR PURPOSES OF GENERALLY DEFINING THE LEASE PREMISES, IS BASED ON UNVERIFIED INFORMATION PROVIDED BY THE LESSEE OR OTHER PARTIES AND IS NOT INTENDED TO BE, NOR SHALL IT BE CONSTRUED AS, A WAIVER OR LIMITATION OF ANY STATE INTEREST IN THE SUBJECT OR ANY OTHER PROPERTY.

JAK 6/19

EXHIBIT C
CALIFORNIA STATE LANDS COMMISSION
MITIGATION MONITORING PROGRAM
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD SECTION
(W 27137, State Clearinghouse No. 2009091126)

The California State Lands Commission (Commission) is a responsible agency under the California Environmental Quality Act (CEQA) for the California High Speed Train Project Fresno to Bakersfield Section (Project). The CEQA lead agency for the Project is California High-Speed Rail Authority (Authority).

In conjunction with approval of this Project, the Commission adopts this Mitigation Monitoring Program (MMP) for the implementation of mitigation measures (MMs) for the portion(s) of the Project located on Commission lands. The purpose of a MMP is to impose feasible measures to avoid or substantially reduce the significant environmental impacts from a project identified in an Environmental Impact Report (EIR) or a Mitigated Negative Declaration (MND). State CEQA Guidelines section 15097, subdivision (a), states in part:¹

In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.

The Authority, as lead agency, has certified an EIR, State Clearinghouse No. 2009091126, adopted an MMP for the whole of the Project (see Exhibit C, Attachment C-1), and remains responsible for ensuring that implementation of the MMs occurs in accordance with its MMP. After certifying the EIR, the Authority also prepared a Supplemental EIR and certified it on October 16, 2018, where a new Locally Generated Alternative was analyzed for the Fresno to Bakersfield Project Section, which did not involve lands under the Commission's jurisdiction.

The Commission's action and authority as a responsible agency apply only to the MMs listed in Table C-1 below. The full text of each MM, as set forth in the MMP prepared by the CEQA lead agency and listed in Table C-1, is incorporated by reference in this Exhibit C. As provided in Attachment C-1, the CEQA lead agency listed MMs in its MMP without identifying what impact the MM addresses, beyond the general resource impact area. Therefore, the Commission staff relied on the Final EIR and Draft Supplemental EIR to identify the impacts and corresponding proposed MMs that would help reduce these impacts on lands under Commission's jurisdiction.

¹ The State CEQA Guidelines are found at California Code of Regulations, title 14, section 15000 et seq.

Table C-1. Project Impacts and Applicable Mitigation Measures

Potential Impact	Mitigation Measure (MM) ²
Air Quality and Global Climate Change (AQ)	
Impact AQ #1: Regional Air Quality Impacts during Construction Impact AQ#2: Compliance with Air Quality Plans	AQ-MM #2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment
	AQ-MM #4: Reduce Criteria Exhaust Emissions from Construction Equipment
Noise and Vibration (N&V)	
Impact N&V #3: Moderate and Severe Noise Impacts from Project Operation to Sensitive Receptors	N&V-MM #4: Vehicle Noise Specification
	N&V-MM #5: Special Trackwork Work
	N&V-MM #6: Additional Noise and Vibration Analysis Following Final Design
Biological Resources and Wetlands (BIO)	
Impact BIO #2: Effects on Special-Status Wildlife	BIO-MM #22: Conduct Pre-construction Surveys for Special-Status Reptile and Amphibian Species
	BIO-MM #23: Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance, and Relocation
	BIO-MM #31: Bird Protection
	BIO-MM #32: Conduct Protocol and Pre-construction Surveys for Swainson’s Hawks
	BIO-MM #33: Swainson’s Hawk Nest Avoidance and Monitoring
	BIO-MM #34: Monitor Removal of Nest Trees for Swainson’s Hawks
	BIO-MM #40: Conduct Pre-construction Surveys for Special-Status Bat Species
	BIO-MM #41: Bat Avoidance and Relocation
	BIO-MM #42: Bat Exclusion and Deterrence
	BIO-MM #58: Compensate for Loss of Swainson’s Hawk Nesting Trees
Impact BIO #3: Effects on Special-Status Plant Communities	BIO-MM #47: Restore Temporary Riparian Impacts
	BIO-MM #48: Restore Temporary Impacts on Jurisdictional Waters
	BIO-MM #49: Monitor Construction Activities within Jurisdictional Waters
	BIO-MM #61: Compensate for Permanent Riparian Impacts
	BIO-MM #62: Prepare and Implement a Site-Specific

² See Attachment C-1 for the full text of each MM taken from the MMP prepared by the CEQA lead agency.

Potential Impact	Mitigation Measure (MM) ²
	Comprehensive Mitigation and Monitoring Plan BIO-MM #63: Compensate for Permanent and Temporary Impacts on Jurisdictional Waters
Impact BIO #6: Project Effects on Special-Status Wildlife Species	See BIO-MM #23, BIO-MM #31 through BIO-MM #34, BIO-MM #40 through BIO-MM #42, BIO-MM #48, BIO-MM #49, BIO-MM #58, and BIO-MM #63 above
Impact BIO #7: Project Effects on Habitats of Concern	See BIO-MM #47 through BIO-MM #49, BIO-MM #61 through BIO-MM #63 above and BIO-MM #52: Construction in Wildlife Movement Corridors
Impact BIO #8: Project Effects on Wildlife Movement Corridors	See BIO-MM #52 above
Cultural and Paleontological Resources (CUL)	
Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities	CUL-MM #2: Conduct Archaeological Training
	CUL-MM #3: Conduct Archeological Monitoring in Areas of Sensitivity, Halt Work in the Event of an Archaeological Discovery
	CUL-MM #4: Comply with State and Federal Law for Human Remains
Impact CUL #3: Potential Adverse Effects on Paleontological Resources due to Construction Activities	CUL-MM #17: Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan
	CUL-MM #18: Halt Construction When Paleontological Resources Are Found

ATTACHMENT C-1

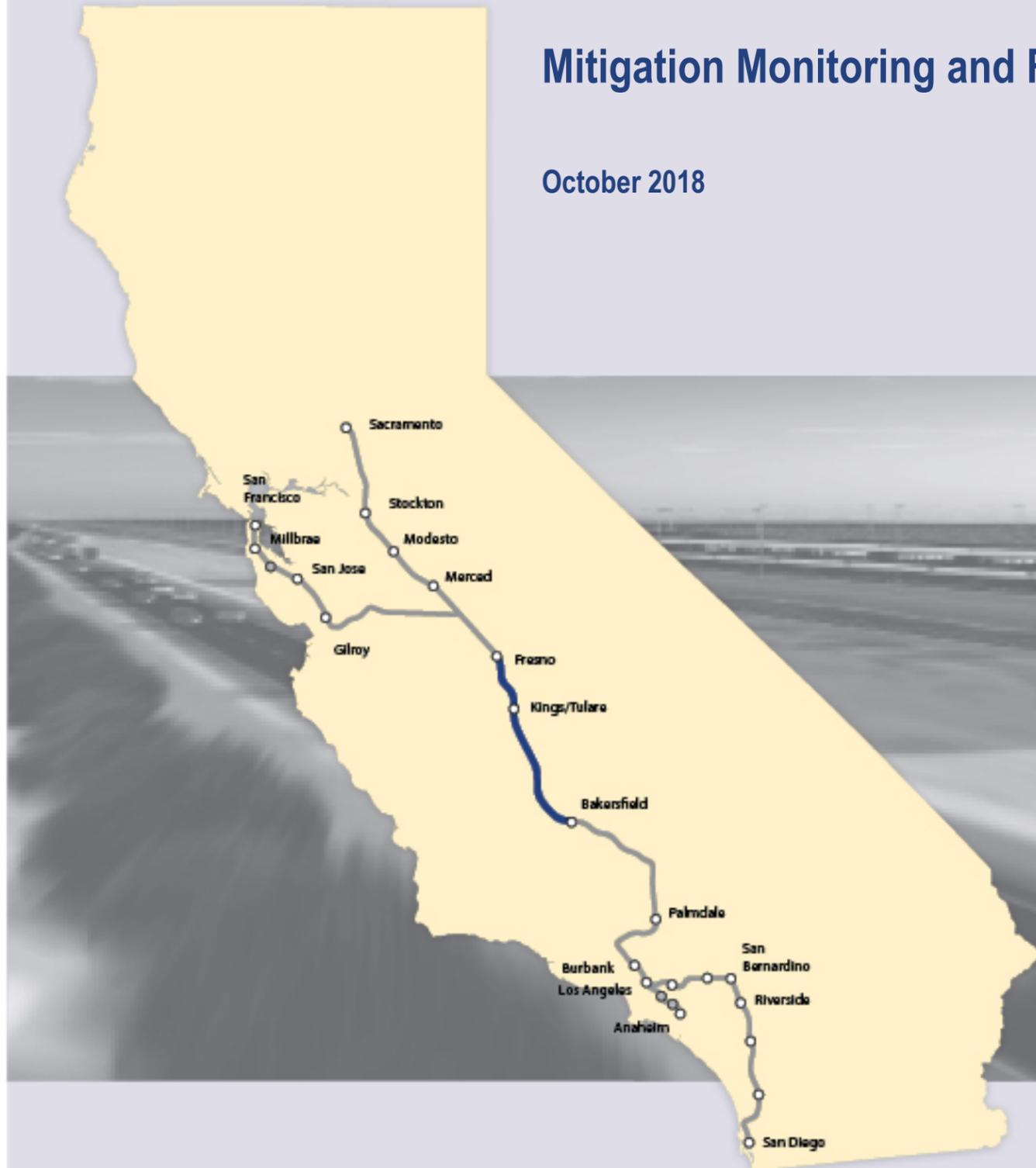
**Mitigation Monitoring Program Adopted by the
California High-Speed Rail Authority**

California High-Speed Rail Authority

Fresno to Bakersfield Project Section

Mitigation Monitoring and Reporting Program

October 2018



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1 INTRODUCTION

In October 2018, the California High-Speed Rail Authority (Authority) prepared a Final Supplemental Environmental Impact Report (EIR) for the Fresno to Bakersfield Section of the California High-Speed Rail (HSR) Project (Project). The Final Supplemental EIR satisfies the requirements of the California Environmental Quality Act (CEQA) and is the basis for the Authority's decision. In its decision, the Authority has selected the F-B LGA to the intersection of 34th Street and L Street including the F Street Station.

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Fresno to Bakersfield Section (including the F-B LGA) of the HSR Project and adheres to CEQA Guidelines section 15097. This MMRP builds on the 2014 MMRP (as amended since) by adding impacts and mitigation unique to the F-B LGA, but also including impacts and mitigation for the portion of the Project (north of Poplar Avenue) already approved and unchanged by the F-B LGA. Such approach allows the Authority to have a single MMRP for reference for the entire Fresno to Bakersfield Section.

Table 1 of the MMRP describes mitigation measures that would mitigate for potential adverse environmental impacts to construct and operate. The table includes columns indicating whether the measure applies only north of Poplar Avenue in Shafter, only south of Poplar Avenue, or both. Any mitigation measures specific to the portion of the alignment from south of the F Street Station to the intersection of 34th Street and L Street including the F Street Station would not be implemented until the Bakersfield to Palmdale Section of the HSR Project is approved. Table 2 describes measures that would avoid or minimize potential impacts to construct and operate the HSR Project. These measures were developed by the FRA and the Authority in consultation with appropriate agencies, to meet the requirements of CEQA, and all apply both north and south of Poplar Avenue.

The Final Supplemental EIR identified certain mitigation measures, specific to the Fresno to Bakersfield Locally Generated Alternative (F-B LGA), required to comply with CEQA. The Authority is required to comply with all mitigation measures adopted with the approval of the project. The HSR Project incorporates impact avoidance and minimization measures and best management practices (BMPs) identified in the Final Supplemental EIR and described in detail in a series of technical reports that accompanied preparation of the environmental document. As a result of applying these impact avoidance and minimization measures and BMPs, the HSR Project will avoid potential adverse environmental impacts in several resource areas, including electromagnetic fields/electromagnetic interference (EMF/EMI), public utilities and energy, hazardous materials and wastes, and station planning, land use, and development. In addition, the regulatory requirements, including permitting and coordination with regulatory agencies, for many project-related activities provide additional assurance that potential adverse environmental impacts will not occur. Representative agencies include the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and Environmental Protection Agency¹ with jurisdiction under the Endangered Species Act and the Clean Water Act, respectively. Like the mitigation measures listed in Table 1, the project impact avoidance and minimization measures (see Table 2) and compliance with regulatory requirements are a condition of project approval and must be implemented by the Authority during design, construction, and operation of the Project.

The laws and orders the project is subject to and the impact avoidance and minimization measures that are part of the HSR Project are described for the following resource areas in more detail in the corresponding chapters of the Final Supplemental EIR, which incorporates by reference the Draft Supplemental EIR/EIS; chapter references below refer to the Draft Supplemental EIR/EIS as revised by the Final Supplemental EIR:

- Transportation – Sections 3.2.1 and 3.2.5
- Air Quality and Global Climate Change – Sections 3.3.1 and 3.3.7
- Noise and Vibration – Sections 3.4.1 and 3.4.5
- Electromagnetic Fields and Electromagnetic Interference – Sections 3.5.1 and 3.5.5
- Public Utilities and Energy – Sections 3.6.1 and 3.6.5
- Biological Resources and Wetlands – Sections 3.7.1 and 3.7.5
- Hydrology and Water Resources – Sections 3.8.1 and 3.8.5
- Geology, Soils, Seismicity, and Paleontological Resources – Sections 3.9.1 and 3.9.5
- Hazardous Materials and Wastes – Sections 3.10.1 and 3.10.5
- Safety and Security – Sections 3.11.1 and 3.11.5
- Socioeconomics and Communities – Sections 3.12.1 and 3.12.5
- Station Planning, Land Use, and Development – Sections 3.13.1 and 3.13.5
- Agricultural Lands – Sections 3.14.1 and 3.14.5
- Parks, Recreation, and Open Space – Sections 3.15.1 and 3.15.5
- Aesthetics and Visual Resources – Sections 3.16.1 and 3.16.5
- Cultural Resources – Sections 3.17.1 and 3.17.5
- Regional Growth – Section 3.18.1
- Cumulative Impacts – Section 3.19.1

¹ EPA delegated authority under Section 401 of the Clean Water Act to the State of California.

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2 MITIGATION MONITORING AND REPORTING PROGRAM

The environmental effects of the Preferred Alternative and the Bakersfield F Street Station location for the Fresno to Bakersfield Section of the HSR Project would result in impacts that would be considered significant under CEQA. Mitigation measures that would reduce or eliminate potential adverse environmental impacts as described in Chapter 3 of Volume I of the Final Supplemental EIR. The specific provisions contained in the MMRP are presented as a table and include mitigation measures identified in the Final Supplemental EIR and the 2014 Fresno to Bakersfield Final EIR/EIS, organized by environmental issue and topical areas addressed in the Final Supplemental EIR. In collaboration with the appropriate agencies, the Authority may refine the means by which it will implement a mitigation measure, as long as the alternative means ensure compliance during project implementation. The MMRP describes implementation and monitoring procedural guidance, responsibilities, and timing for each mitigation measure identified in the Final Supplemental EIR and 2014 Fresno to Bakersfield Final EIR/EIS, including:

Significant Impact: Provides a brief description of the impact expected to occur from the F-B LGA as identified in the Final Supplemental EIR or from the previously Approved Project north of Poplar Avenue as identified in the 2014 Fresno to Bakersfield Section Final EIR/EIS.

Mitigation Measures: Provides the mitigation measure and monitoring requirements as identified for south of Poplar Avenue in the Final Supplemental EIR, or as identified for north of Poplar Avenue in the 2014 Fresno to Bakersfield Final EIR/EIS.

Implementing Party/Monitoring/Reporting Party: Identifies the entity that will be responsible for directly implementing the mitigation measures, monitoring, and reporting. Implementation can be the responsibility of the Authority or its Design Build Contractor (Contractor). Monitoring will generally be the responsibility of the Contractor, with oversight provided by the Authority during construction. Long-term mitigation monitoring responsibilities will be the responsibility of the Authority. The following roles are utilized in the text of mitigation measures in the MMRP:

Roles and Responsibilities

- As the lead agency and proponent of this project, the Authority will implement the mitigation measures through its own actions, those of its contractors, and actions taken in cooperation with other agencies and entities. The Authority is ultimately accountable for the overall administration of the mitigation monitoring program and for assisting relevant individuals and parties in their oversight and reporting responsibilities. The responsibilities of mitigation implementation, monitoring, and reporting extended to several entities as discussed above; however, the Authority will bear the primary responsibility for verifying that the mitigation measures are implemented.

The Authority defines the mitigation measures required for the project. When project work is undertaken by the Authority's contractor, the Contractor shall implement the mitigation measures that are pertinent to their scope of work. The Contractor shall monitor construction activities to ensure that the mitigation measures are being properly implemented and accurately report their activity and results to the Authority. The Authority will periodically check the Contractor's activity, reports, and effectiveness of mitigation activities.
- Authority: Implementation and reporting on mitigation, avoidance and minimization measures as specified in the this MMRP as the responsibility of the Authority may be carried out by an Authority representative or a contractor hired independent of the Design Build Contractor or the Environmental Team. Authority responsible implementation and reporting may include certain measures outside of the scope of the Design Build Contractor such as future studies or operations-phase implementation. In addition, oversight of implementation and reporting may be provided by Authority contractor or representatives as lead agency representatives to facilitate regulatory oversight agency coordination and compliance during implementation and reporting.
- Contractor: Design Build Contractor or the Environmental Team provided by the Design Build Contractor responsible for implementing or monitoring mitigation, avoidance and minimization measures as specified in this MMRP.
- Mitigation Manager: Design Build Contractor's representative responsible for overseeing their Environmental Team's implementation and reporting of environmental commitments. Reports the status of each mitigation measure to Authority in accordance with this MMRP.
- Biological Monitor(s): The Design Build Contractor provided Biological Monitor(s) will be approved by and report directly to the Contractor's Biologist. The Project Biological Monitor(s) will be present onsite within a reasonable monitoring distance during all ground-disturbing activities that have the potential to affect biological resources as directed by the Project Biologist and will be the principal agent(s) in the direct implementation of the MMRP and compliance assurance.
- Cultural Resources Compliance Manager/Principal Investigator: The Design Build Contractor provided Archaeologist, who meets the Secretary of the Interior (SOI) Standards of Archaeologist, is responsible for implementing mitigation measures in compliance with the terms and conditions outlined in the MMRP and treatment plans, and coordinating the status of archaeological mitigation with the Authority in accordance with this MMRP, PA, and MOA.
- Cultural Resources Monitor(s): The Design Build Contractor provided Cultural Resources Monitor(s) will be approved by and report directly to the Cultural Resources Compliance Manager/Principal Investigator. The Archaeological Monitor(s) will be present onsite within a reasonable monitoring distance during ground disturbing activities in areas indicated as culturally sensitive and will be the principal agent(s) in the direct implementation of the MMRP and compliance assurance as directed by the Cultural Resources Compliance Manager/Principal Investigator.
- Paleontological Resources Specialist: The Design Build Contractor provided Paleontological Resources Specialist is responsible for implementing mitigation measures in compliance with the terms and conditions outlined in the MMRP including preparation of the Paleontological Resources Management Plan and approval and direction of the Paleontological Resource Monitor(s).
- Paleontological Resources Monitor(s): The Design Build Contractor provided Paleontological Resources Monitor(s) will be approved by and report directly to the Paleontological Resources Specialist. The Paleontological Resources Monitor(s) will be present onsite within a reasonable monitoring distance during ground disturbing activities in areas indicated as resource sensitive and will be the principal agent(s) in the direct implementation of the MMRP and compliance assurance as directed by the Paleontological Resources Specialist.
- Contractor's Biologist/Mitigation Timing (Implementation Schedule/Reporting Schedule): Not all mitigation actions will occur at the same time. Depending upon the measure, it may be undertaken prior to construction, during construction, or during project operations. Measures may also be undertaken in conjunction with different construction packages or at such time as project operations reach a certain level. This column of the table identifies the stage of the project during which the mitigation action will be taken and when reporting is to occur, if reporting is required.
- Implementation Mechanism or Tool: Identifies the actions required to implement the measures, including any required agreements and/or conditions.

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3 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

The Authority will implement an Environmental Management System (EMS) consisting of strategic planning, policies, and procedures, organizational structure, staffing and responsibilities, milestones, schedule, and resources devoted to achieving the Authority's environmental commitments. The EMS will also include a component that tracks the implementation of mitigation measures (as well as environmental commitments, BMPs, and impact avoidance and minimization measures) and can produce reports on compliance. FRA will receive periodic reports on compliance and may request additional reports as necessary to ensure that the MMRP is fully implemented. This system will rely on data provided by the design build contractor, regional consultants, and others to produce status reports regarding construction status, permitting activities, monitoring, inspections, and other compliance activities.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
3.2 Transportation												
TR-MM#1	Access Maintenance for Property Owners	If a proposed permanent road closure restricts current access to a property, the Authority will provide alternative access via connections to existing roadways. If adjacent road access is not available, the Authority will prepare new road connections, if feasible. Alternative access shall maintain the viability of the property use as it was used prior to the initiation of HSR project construction. If alternative road access is not feasible for a permanent loss of property access, the property will be acquired by the Authority. This mitigation measure would be effective, given the listed approaches available to address all potential scenarios encountered.	✓	✓	Pre-construction/ Construction/Post-construction	Reporting/Compensation	Weekly	Contractor	Contractor	Prepare construction management plan/maintain weekly reporting schedule	Contract Requirements/ Specifications	Impact TR #12 Loss of Property Access as a Result of Road Closures
<i>All other traffic mitigation measures are listed in Appendix A.</i>												
3.3 Air Quality and Global Climate Change												
AQ-MM#1	Reduce Criteria Exhaust Emissions from Construction Equipment	This mitigation measure will apply to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix for the current calendar year, as set forth in California Air Resources Board's (CARB) OFFROAD 2011 database, and no less than a 40 percent reduction compared to a Tier 2 engine	✓	✓	Construction	Reporting	Weekly	Contractor	Contractor	Daily Record Keeping and Weekly Reporting	A copy of each unit's certified tier specification and any required California Air Resources Board (ARB) or San Joaquin Valley Air Pollution Control District (SJVAPCD) operating permit will be made available at the time of mobilization of each piece of equipment.	Impact AQ #1: Construction of the HSR alternatives would exceed the CEQA emissions thresholds for VOCs, NO _x , PM ₁₀ , and PM _{2.5} . Therefore, it could potentially cause violations of NO ₂ , O ₃ , PM ₁₀ , and PM _{2.5} air quality standards or contribute substantially to NO ₂ , O ₃ , PM ₁₀ , and PM _{2.5} existing or projected air quality violations.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		standard for nitrogen oxides (NO _x) emissions. The contractor will document efforts undertaken to locate newer equipment (such as, in order of priority, Tier 4, Tier 3, or Tier 2 equipment) and/or tailpipe retrofit equivalents. The contractor will provide documentation of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required CARB or San Joaquin Valley Air Pollution Control District (SJVAPCD) operating permit will be made available at the time of mobilization of each piece of equipment. The contractor will keep a written record (supported by equipment-hour meters, where available) of equipment usage during project construction for each piece of equipment.	✓	✓								Impact AQ #2: Construction of the HSR alternatives would exceed the CEQA emissions thresholds for VOC, NO _x , PM ₁₀ , and PM _{2.5} . Therefore, it would conflict with the 1-hour Ozone Attainment Plan, the 8-hour Ozone Attainment Plan, and the PM ₁₀ and PM _{2.5} Attainment Plans.
			✓									Impact AQ #7: Construction of the HSR stations could expose sensitive receptors at schools to TAC pollutant concentrations.
			✓									Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.
AQ-MM#2	Reduce Criteria Exhaust Emissions from On-Road Construction Equipment	This mitigation measure applies to all on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material-hauling trucks will consist of an average fleet mix of equipment model year 2010 or newer, but no less than the average fleet mix for the	✓	✓	Construction	Reporting	Weekly	Contractor	Contractor	Weekly reporting	Contract Requirement/ Specification	Impact AQ #1: Construction of the HSR alternatives would exceed the CEQA emissions thresholds for VOCs, NO _x , PM ₁₀ , and PM _{2.5} . Therefore, it could potentially cause violations of

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		current calendar year as set forth in CARB's Emission Factors Model 2011 database. The contractor will provide documentation of efforts to secure such a fleet mix. The contractor will keep a written record of equipment usage during project construction for each piece of equipment.	✓	✓								<p>NO₂, O₃, PM₁₀, and PM_{2.5} air quality standards or contribute substantially to NO₂, O₃, PM₁₀, and PM_{2.5} existing or projected air quality violations.</p> <p>Impact AQ #2: Construction of the HSR alternatives would exceed the CEQA emissions thresholds for VOC, NO_x, PM₁₀, and PM_{2.5}. Therefore, it would conflict with the 1-hour Ozone Attainment Plan, the 8-hour Ozone Attainment Plan, and the PM₁₀ and PM_{2.5} Attainment Plans.</p> <p>Impact AQ #3: Material hauling outside the SJVAB would exceed CEQA emission thresholds for NO_x in the BAAQMD, Mojave Desert AQMD, Eastern Kern County APCD, and the South Coast AQMD, and would exceed the VOC threshold in South Coast AQMD for certain hauling scenarios. Therefore, it could potentially cause violations of NO₂, and O₃ air quality standards or contribute substantially to NO₂ and O₃ existing or projected air quality</p>

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
			✓									violations in those air basins.
												Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.
AQ-MM#3	Reduce the Potential Impact of Concrete Batch Plants	Concrete batch plants would be sited at least 1,000 feet from sensitive receptors, including daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The concrete batch plant will utilize typical control measures to reduce fugitive dust, such as water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central dust collection systems and other suitable technology, to reduce emissions to be equivalent to the U.S. Environmental Protection Agency (USEPA) AP-42 controlled emission factors for concrete batch plants.	✓	✓	Pre-construction	Design/Reporting	Weekly	Contractor	Contractor	Weekly Reporting	Contract Requirements/ Specifications	Impact AQ #8: Construction of the alignment may expose sensitive receptors to temporary substantial pollutant concentrations from concrete batch plants.
			✓									Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.
AQ-MM#4	Offset Project Construction Emissions Through an SJVAPCD VERA	The California High-Speed Rail Authority (Authority) and SJVAPCD will enter into a contractual agreement to mitigate the project's	✓	✓	Pre-construction	Reporting/Funding	Weekly	Authority	Contractor	Weekly Reporting	The Authority and SJVAPCD will enter into a contractual agreement to mitigate the project's emissions by providing	Impact AQ #1: Construction of the HSR alternatives would exceed the CEQA emissions

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		emissions (by offsetting) to net zero the project's actual emissions from construction equipment and vehicle exhaust emissions of volatile organic compounds (VOC), NO _x , particulate matter smaller than or equal to 10 microns in diameter (PM ₁₀), and particulate matter smaller than or equal to 2.5 microns in diameter (PM _{2.5}). The agreement will provide funds for the SJVAPCD's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, with preference given to highly impacted communities, thus offsetting project impacts on air quality. Projects funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps); replacement of old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks; and replacement of old farm tractors. The project will commit to reducing construction emissions for NO _x and VOC through the Voluntary Emission Reduction Agreement (VERA) program. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase will be provided at the beginning of the construction phase, if feasible. At a minimum, funding shall be provided so that mitigation/offsets will occur in the year of impact, or as otherwise permitted by 40									funds for the district's Emission Reduction Incentive Program to fund grants for projects that achieve emission reductions, thus offsetting project-related impacts on air quality.	<p>thresholds for VOCs, NO_x, PM₁₀, and PM_{2.5}. Therefore, it could potentially cause violations of NO₂, O₃, PM₁₀, and PM_{2.5} air quality standards or contribute substantially to NO₂, O₃, PM₁₀, and PM_{2.5} existing or projected air quality violations.</p> <p>Impact AQ #2: Construction of the HSR alternatives would exceed the CEQA emissions thresholds for VOC, NO_x, PM₁₀, and PM_{2.5}. Therefore, it would conflict with the 1-hour Ozone Attainment Plan, the 8-hour Ozone Attainment Plan, and the PM₁₀ and PM_{2.5} Attainment Plans.</p> <p>Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.</p>
			✓	✓								
			✓	✓								

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		C.F.R. Part 93 Section 93.163.										
AQ-MM#5	Purchase Offsets and Offsite Mitigation for Emissions Associated with Hauling Ballast Material in Certain Air Districts	This mitigation measure will apply if ballast material is hauled from quarries outside the San Joaquin Valley Air Basin (SJVAB) and the hauling activities result in the exceedance of applicable annual General Conformity (GC) threshold(s) or local air basin California Environmental Quality Act (CEQA) threshold(s) for NO _x . To determine whether an exceedance will occur based on actual hauling activities, the Authority shall at the beginning of each calendar year, or as soon as practicable thereafter, (1) obtain the most up-to-date information based on actual or projected contractor-specific information about hauling in the Mojave Desert Air Quality Management District (AQMD), South Coast AQMD, and Bay Area AQMD; and (2) calculate the expected NO _x emissions from hauling activities in those districts using the same methodology used in this F-B LGA Draft Supplemental Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The analysis methodology shall specify the location, the year in which the emissions would be released, and the quantity of emissions. If, based on that calculation, exceedance of the applicable NO _x threshold(s) is anticipated to occur in that next calendar year, the Authority will secure from the	✓	✓	Pre-construction/Construction	Reporting/Funding	Weekly	Contractor and Authority	Contractor and Authority	Weekly Reporting	Authority to coordinate the purchase of offsets with the pertinent AQMDs per contractor reports.	Impact AQ #3: Material hauling outside the SJVAB would exceed CEQA emission thresholds for NO _x in the BAAQMD, Mojave Desert AQMD, Eastern Kern County APCD, and the South Coast AQMD, and would exceed the VOC threshold in South Coast AQMD for certain hauling scenarios. Therefore, it could potentially cause violations of NO ₂ , and O ₃ air quality standards or contribute substantially to NO ₂ and O ₃ existing or projected air quality violations in those air basins.

Table 1
 Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>appropriate air district(s) or other appropriate source the production or generation of a sufficient quantity of NO_x offsets for that calendar year necessary to achieve conformity (in the case of exceedance of GC thresholds) and/or to offset NO_x emissions below the applicable CEQA threshold(s). At a minimum, mitigation/offsets will occur in the year of impact, or as otherwise permitted by Code of Federal Regulations (C.F.R.) Title 40, Part 93, Section 93.163.</p> <p>The Mojave Desert AQMD's emission bank has 3,274 tons of NO_x credits (Mojave Desert AQMD 2016); therefore, there should be enough NO_x credits to offset approximately 6 tons per year from this project in the Mojave Desert Air Basin. The exact number of NO_x credits in the South Coast AQMD RECLAIM program is unknown, but 810.5 tons of NO_x credits were traded in 2015 and 43.3 tons of NO_x credits were traded in 2012 (South Coast AQMD 2016). Therefore, there should be enough available NO_x credits in the program to offset approximately 75 tons of NO_x per year from this project in the South Coast AQMD.</p> <p>In the Bay Area AQMD, any material emissions above the district's significance threshold will be mitigated through an off-site emission mitigation program to achieve emission reduction due to material hauling in the Bay Area</p>										

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		AQMD. Potential off-site mitigation programs include the Bay Area AQMD's Carl Moyer Memorial Air Quality Standards Attainment Program (CMP) or other air district emission reduction incentive programs. Depending on the final location selected to obtain ballast material, this would amount to a maximum of 3 tons per year of NO _x credits.										
AQ-MM#6	Localized Air Quality Impacts During Guideway/Alignment Construction	<p>This mitigation measure will apply to heavy maintenance facility(HMF)²/maintenance of infrastructure facility (MOIF) operation for all site options to ensure that the nearest sensitive receptor has a health risk less than the applicable threshold of 10 in 1 million cancer risk and a hazard index of 1, with final decisions on the range of mitigation measures to achieve emission reductions to meet this standard to be selected before the issuance of the Authority to construct permit for the HMF²/MOIF. These measures may include the following options:</p> <ul style="list-style-type: none"> ▪ Use of electric or hybrid trucks to serve the facility. ▪ Use of an electric or clean switcher locomotive to minimize the emissions from HMF operation. ▪ When advertising for a train set vendor, a preference for the use of highly polished external manufactured aluminum for train sets will 	✓		Pre-construction/ Construction/Post-construction	Reporting	Monthly	Contractor	Contractor	Monthly	Contract Requirements/ Specifications	Impact AQ #9: Construction Air emissions associated with construction of the MOIF would result in localized air quality emissions.

² It should be noted that the F-B LGA does not include the development of a heavy maintenance facility site.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

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		be stated in the proposal. <ul style="list-style-type: none"> ▪ Adjustment of the facility operation and orientation to move emission activities to areas where impacts on the surrounding sensitive areas are lessened, thus reducing localized impacts on surrounding sensitive receptors. ▪ A minimum buffer distance of 1,300 feet from sensitive receptors for diesel vehicles, limitations on idling of diesel vehicles at the facility, or preparation of a detailed health risk assessment that shows cancer risk to less than 10 in 1 million when the site design is refined. 										
3.4 Noise and Vibration												
N&V-MM#1	Construction Noise Mitigation Measures	During construction, the contractor will monitor construction noise to verify compliance with the noise limits shown in Table 3.4-1 of the Final EIR/EIS. The contractor would be given the flexibility to meet the FRA construction noise limits in the most efficient and cost-effective manner. This would be done by either prohibiting certain noise-generating activities during nighttime hours or providing additional noise control measures to meet the noise limits. A noise-monitoring program will be developed to meet required noise limits, and the following noise control mitigation measures will be implemented as necessary, for nighttime and daytime:	✓	✓	Construction	Reporting	Weekly	Contractor	Contractor	Weekly	Contract Requirements/ Specifications	Impact N&V #1: Construction Noise Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<ul style="list-style-type: none"> ▪ Install a temporary construction barrier near the noise source ▪ Avoid nighttime construction in residential neighborhoods ▪ Locate stationary construction equipment as far as possible from noise sensitive sites. ▪ During nighttime work use smart backup alarms, which automatically adjust the alarm levels based on the background noise level, or switch off back-up alarms and replace with spotters. ▪ Use low-noise emission equipment. ▪ Implement noise-deadening measures for truck loading and operations. ▪ Monitor and maintain equipment to meet noise limits. ▪ Line or cover storage bins, conveyors, and chutes with sound-deadening material. ▪ Use acoustic enclosures, shields, or shrouds for equipment and facilities. ▪ Use high-grade engine exhaust silencers and engine-casing sound insulation. ▪ Prohibit aboveground jackhammering and impact pile driving during nighttime hours. ▪ Minimize the use of generators to power equipment. 										

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<ul style="list-style-type: none"> ▪ Limit use of public address systems ▪ Grade surface irregularities on construction sites. ▪ Use moveable sound barriers at the source of the construction activity. ▪ Limit or avoid certain noisy activities during nighttime hours. ▪ To mitigate noise related pile driving, the use of an auger to install the piles instead of a pile driver would reduce noise levels substantially. If pile driving is necessary, limit the time of day that the activity can occur. 										
N&V-MM#2	Construction Vibration Mitigation Measures	Building damage from construction vibration is only anticipated from impact pile driving at very close distances to buildings. If pile driving occurs more than 77 feet from fragile or historic buildings, 55 feet from residential structures 25 to 50 feet from buildings, or if alternative methods such as push piling, or auger piling, or cast-in-drill-hole (CIDH) can be used, damage from construction vibration is not expected to occur. Other sources of construction vibration do not generate high enough vibration levels for damage to occur. When a construction scenario has been established, preconstruction surveys are conducted at locations within 50 feet of pile driving to document the existing condition of buildings in case	✓	✓	Pre-construction/Construction/Post-construction	Reporting	Weekly	Contractor	Contractor	Ongoing monitoring during construction/post-construction monitoring as needed to assess damage to buildings.	Contract Requirements/ Specifications	Impact N&V #2: Construction Vibration
			✓									Impact LU #1: Temporary and intermittent disruption of access to some properties, temporarily inconvenience nearby residents, and temporarily change the intensity of agricultural operations on some lands along 31 miles of the Preferred Alternative.
				✓								Impact LU #1: The generation of noise would temporarily inconvenience nearby residents on some lands along 23.13 miles of the F-B LGA

Table 1
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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		damage is reported during or after construction. The Authority will arrange for the repair of damaged buildings or will pay compensation to the property owner. Although vibration impacts would occur during construction activities, the construction activities are considered temporary, as they would cease after completion.		✓								Impact PK #1: Construction activities would increase noise exposure at Weill Park and the Kern River Parkway.
N&V-MM#3	Implement Proposed California High-Speed Rail Project Noise Mitigation Guidelines	To determine the appropriate mitigation measure for properties experiencing severe noise impacts, noise mitigation guidelines would be applied as follows: <ul style="list-style-type: none"> Prior to operation of the HSR, the Authority will install sound barriers where they can achieve between 5 and 15 dBA of noise reduction, depending on their height and location relative to the tracks. The primary requirements for an effective sound barrier are that the barrier must (1) be high enough and long enough to break the line-of-sight between the sound source and the receiver, (2) be of an impervious material with a minimum surface density of 4 pounds per square foot, and (3) not have any gaps or holes between the panels or at the bottom. Because many materials meet these requirements, aesthetics, durability, cost, and maintenance considerations usually determine the selection of materials for sound barriers (examples are shown in 	✓		Pre-construction/Construction/Post-construction	Reporting	Weekly	Authority	Authority	Ongoing monitoring during construction/post-construction monitoring as needed to assess damage to buildings	Contract Requirements/ Specifications Noise and Vibration Mitigation Guidelines	Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors
				✓								Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors: 7,263 moderate and 4,697 severe impacts
			✓									Impact N&V #6: The Hanford East Station Alternative and the BNSF through Corcoran would result in increases in traffic volume that would result in an increase in the future peak-hour noise level.
				✓								PK#4: Weill Park. Project impacts from operation of the HSR would increase noise exposure.
				✓								PK#4: Kern River Parkway. Project impacts from operation of the HSR would increase noise exposure.
			✓	✓								Impact BIO #6:

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		<p>Figure 3.4-14 of the Final EIR/EIS). Depending on the situation, sound barriers can become visually intrusive. Typically, the sound barriers style is selected with input from the local jurisdiction to reduce the visual effect of barriers on adjacent lands uses. For example, sound barriers could be solid or transparent, and made of various colors, materials, and surface treatments.</p> <ul style="list-style-type: none"> The minimum number of affected sites should be at least 10, and the length of a sound barrier should be at least 800 feet. The maximum sound barrier height would be 14 feet for at-grade sections; however, all sound barriers would be designed to be as low as possible to achieve a substantial noise reduction. Berm and berm/wall combinations are the preferred types of sound barriers where space and other environmental constraints permit. On aerial structures, the maximum sound barrier height would also be 14 feet, but barrier material would be limited by engineering weight restrictions for barriers on the structure. Sound barriers on the aerial structure will still be designed to be as low as possible to achieve a substantial noise reduction. Sound barriers on both 										<p>Project impacts from the HSR would permanently impact suitable habitat that has the potential to support special-status invertebrate species through the creation of noise that would reduce the desirability of the habitat.</p> <p>Impact BIO #6: Project impacts from the HSR would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species through the creation of noise that would reduce the desirability of the habitat.</p> <p>Impact BIO #6: Project impacts from the HSR would permanently impact suitable habitat that has the potential to support special-status bird species through the creation of noise that would reduce the desirability of the habitat.</p> <p>Impact BIO #6: Project impacts from the HSR would permanently impact suitable habitat that has the potential to support special-status mammal</p>
			✓	✓								
			✓	✓								
			✓	✓								

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		<p>aerial structures and at-grade structures could consist of solid, semitransparent, or transparent materials.</p> <ul style="list-style-type: none"> ▪ The Authority will work with the communities to identify how the use and height of sound barriers would be determined using jointly developed performance criteria. Other solutions may result in higher numbers of residual impacts than reported herein. Options may be to reduce the height of sound barriers and combine barriers with sound insulation or to accept higher noise thresholds than the FRA's current noise thresholds. ▪ If sound walls are not proposed or do not reduce sound levels to below a severe impact level, building sound insulation can be installed. Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction is a mitigation measure that can be provided when the use of sound barriers is not feasible in providing a reasonable level (5 to 7 dBA) of noise reduction. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where sound barriers are not feasible or desirable and for buildings where indoor sensitivity is of most 										species through the creation of noise that would reduce the desirability of the habitat.

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		<p>concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to windows, by sealing holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air conditioning so that windows do not need to be opened. Performance criteria would be established to balance existing noise events and ambient roadway noise conditions as factors for determining mitigation measures.</p> <ul style="list-style-type: none"> ▪ If sound walls or sound installation is not effective, the Authority can acquire easements on properties severely affected by noise. Another option for mitigating noise impacts is for the authority to acquire easements on residences likely to be impacted by HSR operations in which the homeowners would accept the future noise conditions. This approach is usually taken only in isolated cases where other mitigation options are infeasible, impractical, or too costly. 										
N&V-MM#4	Vehicle Noise Specification	In the procurement of an HSR vehicle technology, the Authority will require bidders to meet the federal regulations (40 CFR Part 201.12/13) at the time of procurement for locomotives (currently a 90-	✓	✓	Pre-construction/Construction/Post-construction	Reporting	Weekly	Authority	Authority	Ongoing monitoring during construction/post-construction monitoring as needed	Contract Requirements/ Specifications Noise and Vibration Mitigation Guidelines	Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors

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		dBA-level standard), for cars operating at speeds of greater than 45 mph. Depending on the available technology, this could significantly reduce the number of impacts throughout the corridor.										
N&V-MM#5	Special Track Work	Because the impacts of HSR wheels over rail gaps at turnouts increases HSR noise by approximately 6 dBA over typical operations, turnouts can be a major source of noise impact. If the turnouts cannot be moved from sensitive areas, the project can use special types of track work that eliminate the gap. Table 3.4-29 provides additional mitigation measures that would reduce operational vibration levels when the train, railway, and railway structures are already in good condition. As shown in Table 3.4-29, mitigation would take place at the source, sensitive receptor, or along the propagation path from the source to the sensitive receptor. If mitigation measures provided in Table 3.4-29 are not feasible, the Authority would attempt to negotiate a vibration easement with property owners or the Authority would negotiate to relocate the property owner outside of the area subject to significant vibration impacts.	✓		Pre-construction/ Construction/ Post-construction	Reporting	Weekly	Authority	Authority	Ongoing monitoring during construction/post-construction monitoring as needed	Contract Requirements/ Specifications Noise and Vibration Mitigation Guidelines	Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors
				✓								Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors. Project Noise Impacts Preferred Alternative: 7,263 moderate and 4,697 severe impacts.
N&V-MM#6	Additional Noise and Vibration Analysis Following Final Design	If final design or final vehicle specifications result in changes to the assumptions underlying the noise and vibration analysis (including analysis regarding resident and business displacements),	✓	✓	Pre-construction/Design/ Operation	Reporting	Final design/Final vehicle specification	Contractor/Authority (vehicle)	Contractor/Authority (vehicle)	Final design/Final vehicle specification	Submit assessment and supplemental environmental documentation	Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors
				✓								Impact N&V #6: The Hanford East Station

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		<p>reassess noise and vibration impacts and recommendations for mitigation and provide supplemental environmental documentation, as required by law.</p> <p>Several single-family homes will be subject to traffic peak-hour noise levels in excess of 66 dBA Leq. These noise levels would exceed the Caltrans Noise Abatement Criteria and potentially require the preparation of Noise Study Reports and noise abatement measures. In determining the reasonableness of abatement, FHWA highway traffic noise regulation requires, among other factors, the feasibility of the noise mitigation measure as well as the consideration of the viewpoints of the affected residents and property owners. Feasibility generally deals with considering whether it is possible to build an abatement measure, given site constraints; and whether the abatement measure provides a minimum reduction in noise levels. Feasibility also requires that all of the homes potentially affected face the roadway from which the noise emanates. As a result, noise mitigation measures would be infeasible for any home with a driveway for which access must be maintained. The noise barrier would not be continuous, and subsequently would not provide the minimum 5 dBA of noise reduction. A noise abatement measure is not feasible unless the measure achieves a noise</p>										<p>Alternative and the BNSF through Corcoran would result in increases in traffic volume that would result in an increase in the future peak-hour noise level.</p>

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		reduction of at least 5 dBA for front-row receivers. Highway noise barriers are designed to protect areas of "frequent human use," which generally do not include the front yards of homes. Also, Caltrans does not generally put noise barriers across the front yards of homes because they are acoustically infeasible and because most homeowners wish to maintain the views from the fronts of their homes.										
N&V-MM#7	Station, Maintenance of Infrastructure Facility, and Traction Power Supply Station	<p>In order to reduce the noise from the facilities, the following noise mitigation measures are recommended:</p> <ul style="list-style-type: none"> ▪ Enclose as many of the activities within the facility as possible. ▪ Eliminate windows in the building that would face toward noise sensitive land uses adjacent to the facility. If windows are required to be located on the side of the facility facing noise-sensitive land uses, they should be the fixed type of windows with a sound transmission class (STC) rating of at least 35. If the windows must be operable, they should be closed during nighttime activities. ▪ Close facility doors where the rails enter the facility during nighttime activities. ▪ Locate Tracks that cannot be located within the facility should be located on the far side of the facility from adjacent noise-sensitive receivers. ▪ For tracks that cannot be 	✓		Pre-construction/Design/Construction/Operation	Reporting	Final design	Contractor/Authority	Contractor/Authority	Final design and Construction/Weekly reporting	Contract Requirements/Specification	Impact N&V #7: Noise from HSR Stationary Facilities
				✓								Impact N&V #3: Moderate and severe noise impacts from project operation to sensitive receptors. Project Noise Impacts Preferred Alternative: 7,263 moderate and 4,697 severe impacts.
				✓								Impact N&V#6: The F Street Station would result in increases in traffic volume that would result in an increase in the future peak-hour noise level.

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		installed away from noise-sensitive receivers, install sound barrier along the maintenance tracks in order to protect the adjacent noise-sensitive receivers. <ul style="list-style-type: none"> ▪ Locate all mechanical equipment (compressors, pumps, generators, etc.) should be located within the facility structure. ▪ Locate any mechanical equipment located exterior to the facility (compressors, pumps, generators, etc.) should be located on the far side of the facility from adjacent noise-sensitive receivers. If this is not possible, this equipment should be located within noise enclosures to mitigate the noise during operation. ▪ Point all ventilation ducting for the facility should be pointed away from the adjacent noise-sensitive receivers. 										
3.5 EMI/EMF												
No significant impacts on EMI/EMF have been identified.												
3.6 Public Utilities and Energy												
PU&E-MM#1	Reconfigure or relocate substations and/or ancillary components	The Authority will relocate the adjacent electrical lines and related ancillary components of the existing Mascot substation prior to operation. The reconfiguration will be performed in coordination and cooperation with the utility owner, Southern California Edison, so that the relocation would not result in prolonged disruption of services.	✓		Pre-construction/Design/Construction	Reporting	Final Design	Contractor/Authority	Contractor/Authority	Final Design and Construction/Monthly Reporting	Contract Requirements/Specifications	Impact PU&E #5: Adjacent lines leading into the Southern California Edison's Mascot substation are within the HSR construction footprint.

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3.7 Biological Resources and Wetlands												
BIO-MM#1	Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor(s)	A Project Biologist shall be designated by the Environmental Compliance Manager to oversee regulatory compliance requirements and monitor the restoration activities associated with ground-disturbing activities in accordance with the adopted mitigation measures and applicable laws. The Project Biologist, Regulatory Specialist, and Project Botanist are responsible for the timely implementation of the biological mitigation measures as outlined in the MMEP, construction documents, and pertinent resource agency permits. Resumes for the Designated Project Biologist(s), Regulatory Specialists (Waters), and Project Botanists, and Project Biological Monitors(s) must be submitted to the USFWS during final design. Additional duties of the Project Biologist, Regulatory Specialist (Waters) and Project Botanist include reviewing design documents and construction schedules, determining project biological monitoring needs, and guiding and directing the work of the Project Biological Monitors. The duties of the Project Biological Monitor include monitoring construction crew activities, as needed, to document applicable mitigation measures and permit conditions. The Project Biologist(s), Regulatory	✓		Pre-construction	Mitigation Manager will identify Project Biologist, Regulatory Specialist (Waters), Project Botanist. Contractor will identify Project Biological Monitors and provide resumes to regulatory agencies as required.	Final Design	Contractor	Contractor	Final Design	Condition of Design Build Contract	BIO-MM#1 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern

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		Specialist(s) (Waters), Project Botanist(s) and the Project Biological Monitor(s) report to the Mitigation Manager. The Project Biologist(s), Regulatory Specialist(s) (Waters), Project Botanist(s) and/or the Project Biological Monitor(s) may require special approval from the USFWS and CDFW to implement certain mitigation measures. In these circumstances, they are referred to as agency-approved biologist(s).										
BIO-MM#2	Regulatory Agency Access	If requested, before, during, or on completion of ground-disturbing activities, the Contractor will allow access by USFWS, USACE, SWRCB, and CDFW staff to the construction site. Because of safety concerns, all visitors will be required to check in with the Contractor before accessing the construction site. If agency personnel access the construction site, the Project Biologist will prepare a memorandum within 1 day of the visit to document agency access and the issues raised during the field meeting. This memorandum will be submitted to the Mitigation Manager. Any non-compliance issues will be reported to the Contractor and Authority.	✓		Pre-construction/Construction/Post-construction	Access Granted to Regulatory Agencies	1 day following agency site visit	Contractor, Project Biologist	Contractor	1 day following agency site visit	Condition of Design Build Contract	BIO-MM#2 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#3	Prepare and Implement a Worker Environmental Awareness Program	Before the start of ground-disturbing activities, the Project Biologist, Regulatory Specialist (Waters) and Project Botanist will prepare	✓		Pre-construction/Construction	Training of all crew/construction personnel prior to start of construction. Provide daily/ weekly/ monthly	Daily Tracking	Contractor	Contractor	Monthly training forms submitted monthly.	Condition of Design/Build Contract	BIO-MM#3 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status

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		and implement a WEAP for construction crews. WEAP training materials will include the following: discussion of the federal Endangered Species Act (federal ESA), the California Endangered Species Act (CESA), the Bald and Golden Eagle Protection Act (BGEPA), the Migratory Bird Treaty Act (MBTA), and the Clean Water Act (CWA); the consequences and penalties for violation or noncompliance with these laws and regulations and project permits; identification of special-status plants, special-status wildlife, jurisdictional waters, and special-status plant communities and explanations about their value; hazardous substance spill prevention and containment measures; the contact person in the event of the discovery of a dead or injured wildlife species; and review of mitigation measures. In the WEAP, construction timing in relation to species' habitat and life-stage requirements will be detailed and discussed on project maps, which will show areas of planned minimization and avoidance measures. A fact sheet conveying this information will be prepared by the Project Biologist, Regulatory Specialist (Waters) and Project Botanist for distribution to the construction crews and to others who enter the construction footprint. On completion of the WEAP training, construction crews will sign a form stating that		✓		report as required by permit conditions or as additional crew/ construction personnel receive training.						Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		they attended the training, understood the information presented, and will comply with the WEAP requirements. The Project Biologist, Regulatory Specialist (Waters) and Project Botanist will submit the signed WEAP training forms to the Mitigation Manager on a monthly basis. Construction crews will be informed during the WEAP training that, except when necessary as determined in consultation with the Project Biologist, Regulatory Specialist (Waters) and Project Botanist travel within the marked project site will be restricted to established roadbeds. Established roadbeds include all pre-existing and project-constructed unimproved and improved roads.										
BIO-MM#4	Prepare and Implement a Weed Control Plan and Annual Vegetation Control Plan	A construction-phase Weed Control Plan and an operation phase Annual Vegetation Control Plan will be developed and implemented. Before the start of ground-disturbing activities, the Project Botanist will prepare and oversee the implementation a Weed Control Plan to minimize or avoid the spread of weeds during ground-disturbing activities. The Weed Control Plan will address the following: Schedule for noxious weed surveys to be conducted in coordination with the Biological Resources Management Plan (BRMP) (BIO-MM#5). The success criteria for	✓		Pre-construction/Construction/Post-construction/Operation	Plan to be prepared prior to construction followed by Monthly memorandum to document the progress and implementation of the Weed Control Plan	Monthly	Contractor/Authority	Contractor/Authority	Monthly	Condition of the Design/Build Contract	BIO-MM#4 applies to all BIO Impacts Impact BIO#1 Construction Effects on Special-Status Plant Species Impact BIO#2: Construction Effects on Special-Status Wildlife Impact BIO#3: Construction Effects on Habitats of Concern Impact BIO#5: Project Effects on Special-Status Plant Species Impact BIO#6: Project Effects on Special-Status
				✓								
				✓								
				✓								
				✓								
				✓								

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		noxious and invasive weed control, as established by a qualified biologist. The success criteria will be linked to the Biological Resources Management Plan [BRMP] (BIO-MM#5) standards for onsite work during construction. In particular, the criteria will limit the introduction and spread of highly invasive species, as defined by the California Invasive Plant Council (CalIPC), to less than or equal to the pre-disturbance conditions in areas temporarily impacted by construction activities. If invasive species cover is found to exceed by 10% the pre-disturbance conditions during monitoring—or is 10% more compared with a similar, nearby reference site with similar vegetation communities and management—a control effort will be implemented. If the target, or other success criteria identified in the Comprehensive Mitigation and Monitoring Plan (CMMP), has not been met by the end of the BRMP monitoring and implementation period, the Authority or its designee will continue the monitoring and control efforts, and remedial actions would be identified and implemented until the success criteria are met. Depending on monitoring results, additional or revised measures may be needed to ensure that the introduction and spread of noxious weeds are not promoted by the construction and operation of		✓								Wildlife Species Impact BIO#7: Project Effects on Habitats of Concern

Table 1
 Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		the project. Provisions to ensure that the development of the Weed Control Plan will be coordinated with development of the Restoration and Revegetation Plan (RRP) (BIO-MM#6) so that the RRP incorporates measures to reduce the spread and establishment of noxious weeds, and incorporates percent cover of noxious weeds into revegetation performance standards. Identification of weed control treatments, including the use of permitted herbicides, and manual and mechanical removal methods. Herbicide application will be restricted from use in Environmentally Sensitive Areas and on compensatory mitigation sites, which are defined in BIO-MM#7, Delineate Environmentally Sensitive Area and Environmental Restricted Area (on plans and in field). Determination of timing of the weed control treatment for each plant species. Identification of fire prevention measures. During operation, the Authority will generally follow the procedures established in Chapter C2 of the Caltrans Maintenance Manual to manage vegetation on Authority property (Caltrans 2010). Vegetation would be controlled by chemical, thermal, biological, cultural, mechanical, structural, and manual methods. A separate plan, the Annual Vegetation Control Plan, would also be developed										

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>each winter for implementation no later than April 1 of each year.</p> <p>That plan would consist of site-specific vegetation control methods, as outlined below:</p> <p>Chemical vegetation control noting planned usage. Mowing program. Other non-chemical vegetation control plans (manual, biological, cultural, thermal (includes the use of propane heat or steam and is not specific to controlled burning) and structural). List of sensitive areas. Other chemical pest control plans (e.g., insects, snail, rodent). Only Caltrans-approved herbicides will be used in the vegetation control program. Pesticide application will be conducted in accordance with all requirements of the California Department of Pesticide Regulation and County Agricultural Commissioners by certified pesticide applicators. Noxious/invasive weeds will be treated where requested by County Agricultural Commissioners. The Authority will cooperate in area-wide control of noxious/invasive weeds if established by local agencies.</p> <p>Farmers/landowners who request weed control on state right-of-way that is not identified in the annual vegetation control plan will be encouraged to submit a permit request application for weed control that identifies the target weeds and control method desired. The Contractor will implement the</p>										

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		Weed Control Plan during the construction period. The Authority will require that HSR maintenance crews follow the guidelines in the Weed Control Plan and Annual Vegetation Control Plan during project operation. The Authority or its designee will appoint the responsible party during the operations period to ensure the Annual Vegetation Control Plan is being carried out appropriately and effectively. A monthly memorandum will be prepared by the Project Botanist to document the progress of the plan and its implementation.										
BIO-MM#5	Prepare and Implement a Biological Resources Management Plan	During final design, the Mitigation Manager, or its designee (Project Biologist, Regulatory Specialist or Project Botanist) will prepare the Biological Resources Management Plan (BRMP) and assemble the biological resources mitigation measures. The BRMP will include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP will also include habitat replacement and revegetation, protection during ground-disturbing activities, performance (growth) standards, maintenance criteria, and monitoring requirements for temporary and permanent native plant community impacts. The parameters for the BRMP will be formed with the mitigation	✓		Plan required Pre-construction. Implementation will occur during Construction and Post-construction.	Plan to be prepared prior to construction followed by reporting schedule established by agency permit conditions.	Monthly	Contractor/Authority	Contractor/Authority	Monthly	Condition of the Design/Build Contract	BIO-MM#5 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>measures from this project-level EIR/EIS, including terms and conditions as applicable from the USFWS, USACE, SWRCB, and CDFW permits. The goal of the BRMP is to provide an organized reporting tool to ensure that the mitigation measures and terms and conditions are implemented in a timely manner and are reported on. These measures, terms, and conditions include all avoidance, minimization, repair, mitigation, and compensatory actions stated in the mitigation measures or terms and conditions from the permits referenced above. These measures, terms, and conditions are tracked through final design, implementation, and post-construction phases. The BRMP will help the long-term perpetuation of biological resources within the temporarily disturbed areas and protect adjacent targeted habitats. The BRMP will be submitted to the Contractor and will contain, but not be limited to, the following information:</p> <ul style="list-style-type: none"> a. A master schedule that shows that construction of the project, Pre-construction surveys, and establishment of buffers and exclusions zones to protect sensitive biological resources. b. Specific measures for the protection of special-status species. c. Identification (on construction plans) of the 										

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 Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		locations and quantity of habitats to be avoided or removed, along with the locations where habitats are to be restored. d. Procedures for vegetation analyses of temporarily affected habitats to approximate their relative composition and procedures for site preparation, irrigation, planting, and maintenance. This information may be used to determine the requirements of the revegetation areas for both onsite temporary impacts and offsite compensatory sites. e. Sources of plant materials and methods of propagation. f. Identification of specific parameters consistent with mitigation ratios and permit conditions for determining the amount of replacement habitat for temporary disturbance areas. g. Specification of parameters for maintenance and monitoring of re-established habitats, including weed control measures, frequency of field checks, and monitoring reports for temporary disturbance areas. h. Specification of performance standards for the re-established plant communities within										

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		the construction limits. i. Specification of the remedial measures to be taken if performance standards are not met (e.g., a form of adaptive management). j. Methods and requirements for monitoring restoration/replacement efforts, which will be a combination of qualitative and quantitative data consistent with mitigation measures and permit conditions. k. Measures to preserve topsoil and control erosion. l. Design of protective fencing around Environmentally Sensitive Areas (ESA), environmentally restricted areas (ERA), and the construction staging areas. m. Specification of the locations and quantities of gallinaceous guzzlers (catch basin/artificial watering structures) and the monitoring of water levels in them. n. Locations of trees to be protected as wildlife habitat (roosting sites) and locations for planting replacement trees. o. Specification of the purpose, type, frequency, and extent of chemical use for insect and disease control operations as part of vegetative maintenance										

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		within sensitive habitat areas. p. Specific construction monitoring programs for habitats of concern and special-status species, as needed. q. Specific measures for the protection of vernal pool habitat and riparian areas. These measures may include erosion and siltation control measures, protective fencing guidelines, dust control measures, grading techniques, construction area limits, and biological monitoring requirements. r. Provisions for biological monitoring during ground-disturbing activities to confirm compliance and success of protective measures. The monitoring procedures will (1) identify specific locations of wildlife habitat and sensitive species to be monitored; (2) identify the frequency of monitoring and the monitoring methods (for each habitat and sensitive species to be monitored); (3) list required qualifications of biological monitor(s), and (4) identify the reporting requirements.										
BIO-MM#6	Prepare and Implement a Restoration and Revegetation Plan	During final design, the Project Botanist will prepare a Restoration and Revegetation Plan (RRP) for temporarily disturbed upland communities. (Site restoration will also be	✓		Prepare the plan Pre-construction. Implement the plan during construction, Monitoring during Post-construction	Prepare and implement RRP	Monthly	Contractor/Authority	Contractor/Authority	Monthly	Condition of the Design/Build Contract Restoration and Revegetation Plan (RRP) Compliance report to document	BIO-MM#6 applies to all BIO Impacts Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		conducted to restore temporary impacts on valley foothill riparian areas [BIO-MM#47] and jurisdictional waters [BIO-MM#48].) In the RRP, impacts on habitat subject to temporary ground disturbances that will require decompaction or regrading will be addressed, if appropriate. The Project Biologist will approve the seed mix. The standards for onsite work during construction will limit highly invasive species, as defined by the California Invasive Plant Council, to less than 10% greater than the pre-disturbance condition or as determined through a comparison with an appropriate reference site with similar natural communities and management. During ground-disturbing activities, the Contractor will implement the RRP in temporarily disturbed areas. The Project Biologist will prepare and submit compliance reports to the Mitigation Manager to document implementation and performance of the RRP.		✓							implementation and performances standards	Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
					✓							Impact BIO#5: Project Effects on Special-Status Plant Species
					✓							Impact BIO#6: Project Effects on Special-Status Wildlife Species
					✓							Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#7	Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in field)	Before the start of ground-disturbing activities, the Project Biologist, Regulatory Specialist (Waters), and Project Botanist will verify that ESAs and ERAs are delineated on final construction plans (including grading and landscape plans) and in the field and will update as necessary. ESAs are areas within the construction zone, or on compensatory mitigation sites, containing suitable	✓		Pre-construction/Construction	Identify and Establish ESAs and ERAs; Remove Fencing, Memo to Mitigation Manager	In accordance with reporting schedule established by agency permit requirements	Contractor	Contractor	In accordance with reporting schedule established by agency permit requirements	Condition of Design/Build Contract	BIO-MM#7 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text	
		habitat for special-status species and habitats of concern that may allow construction activities but have restrictions based on the presence of special-status species or habitats of concern at the time of construction. ERAs are sensitive areas that are typically outside the construction footprint that must be protected in place during all construction activities. Before and during the implementation of ground-disturbing activities, the Project Biologist, Regulatory Specialist (Waters), and Project Botanist, will mark ESAs and ERAs with high-visibility temporary fencing, flagging, or other agency-approved barriers to prevent encroachment of construction personnel and equipment. Sub-meter accurate Global Positioning System (GPS) equipment will be used to delineate all ESAs and ERAs. The Contractor will remove ESA and ERA fencing when construction is complete or when the resource has been cleared according to agency permit conditions in the MMRP and construction drawings and specifications. The Project Biologist, Regulatory Specialist (Waters), and Project Botanist, will submit a memorandum regarding the field delineation and installation of all ESAs/ERAs to the Mitigation Manager.		✓								Concern	
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species	
					✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
					✓								Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#8	Wildlife Exclusion	The Contractor, under the supervision of the Project		✓	Pre-construction/Construction	Installation of wildlife-specific exclusion	In accordance with reporting	Contractor	Contractor	In accordance with reporting schedule established by	Condition of Design/Build	Impact BIO#2: Construction Effects	

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	Fencing	Biologist will install wildlife-specific exclusion barriers at the edge of the construction footprint. Exclusion barriers will be made of durable material, regularly maintained, and installed below-grade by the Contractor under the supervision of the Project Biologist. Wildlife exclusion fencing will be installed along the outer perimeter of ESAs and ERAs and below-grade (e.g., 6 to 10 inches below-grade). The design specifications of the exclusion fencing will be determined through consultation with USFWS and/or CDFW. The wildlife exclusion barrier will be monitored, maintained at regular intervals throughout construction, and removed after the completion of major construction activities. The Project Biologist will submit a memorandum to the Mitigation Manager to document compliance with this measure.				barriers; Memo to Mitigation Manager	schedule established by agency permit requirements			agency permit requirements	Contract	on Special-Status reptiles and amphibian species.
				✓								Impact BIO#2: Construction Effects on Special-Status mammal species.
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status mammal species.
BIO-MM#9	Equipment Staging Areas	Before the start of ground-disturbing activities, the Project Biologist, Regulatory Specialist (Waters), and Project Botanist will confirm that staging areas for construction equipment are outside areas of sensitive biological resources, including habitat for special-status species, habitats of concern, and wildlife movement corridors, to the extent feasible. The Project Biologist, Regulatory Specialist (Waters), and Project Botanist will submit a memorandum to the Mitigation Manager to	✓	✓	Pre-construction/Construction	Monitoring and Reporting	In accordance with reporting schedule established by agency permit requirements	Contractor	Contractor	In accordance with reporting schedule established by agency permit requirements	Condition of Design/Build Contract	BIO-MM#9 applies to all BIO Impacts

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		document compliance with this measure.										
BIO-MM#10	Mono-Filament Netting	Before and during the implementation of ground-disturbing activities, the Project Biologist will verify that that the Contractor is not using plastic mono-filament netting (erosion-control matting) or similar material in erosion control materials; acceptable substitutes include coconut coir matting, tackified hydroseeding compounds, rice straw wattles (e.g., Earthsaver wattles: biodegradable, photodegradable, burlap), and other reusable erosion, sediment, and wildlife control systems that may be approved by the regulatory agencies (e.g., ERTEC Environmental Systems products). The Project Biologist will submit memoranda to the Mitigation Manager to document compliance with this measure; the memoranda will be submitted monthly or as appropriate throughout project construction.	✓		Pre-construction/Construction	Monitoring and Reporting	Monthly or in accordance with reporting schedule established by agency permit requirements	Project Biologist	Project Biologist	Monthly or in accordance with reporting schedule established by agency permit requirements	Condition of Design/Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptile and amphibian species.
			✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
				✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status wildlife species.
			✓									Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status reptiles and amphibian species.
			✓									Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to

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												support special status mammal species.
				✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status wildlife species.
BIO-MM#11	Vehicle Traffic	During ground-disturbing activities, the contractor will restrict project vehicle traffic within the construction area to established roads, construction areas, and other designated areas. The contractor will establish vehicle traffic in locations disturbed by previous activities to prevent further adverse effects, require observance of a 15 mile per hour (mph) speed limit for construction areas with potential special-status species habitat, clearly flag and mark access routes, and prohibit off-road traffic. The Project Biologist will submit a memorandum to the Mitigation Manager to document compliance with this measure; memoranda will be submitted on a weekly basis or as appropriate throughout project construction.	✓		Construction	Establish vehicle routes, clearly flag and mark access routes, and prohibit off-road traffic, monitor and report	Weekly	Contractor	Contractor	Weekly	Condition of Design/Build Contract	BIO-MM#11 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#12	Entrapment Prevention	To prevent inadvertent entrapment of protected species, the Contractor, under the guidance of the Project Biologist, will cover all excavated, steep-sided holes or trenches more than 8	✓		Construction	Cover holes and trenches and protect pipes >3 inches in diameter	Weekly	Contractor	Contractor	Weekly	Condition of Design/Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-

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		inches deep at the close of each work day with plywood or similar materials or provide a minimum of one escape ramp per 10 feet of trenching (with slopes no greater than a 3:1) constructed of earth fill or wooden planks. The Project Biologist will thoroughly inspect holes and trenches for trapped animals before leaving the construction site each day. The Contractor will either screen, cover, or store more than 1 foot off the ground all construction pipe, culverts, or similar structures with a diameter of 3 inches or greater that are stored at the construction site for one or more overnight periods and these pipes, culverts, and similar structures will be inspected by the Project Biologist for wildlife before the material is moved, buried, or capped. The Project Biologist will clear stored material reserved for common and special-status wildlife species before the pipe is subsequently buried, moved, or capped (covered). The Project Biologist will submit memoranda to the Mitigation Manager to document compliance with this measure; the memoranda will be submitted on a weekly basis or as appropriate throughout project construction.										status reptile and amphibian species.	
			✓										Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
				✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status wildlife species.
			✓										Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓										Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
				✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that	

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												has the potential to support special status wildlife species.
BIO-MM#13	Work Stoppage	During ground-disturbing activities, the Project Biologist, Regulatory Specialist (Waters), Project Botanist or Biological Monitor will halt work in the event that a special-status wildlife species gains access to the construction footprint. This work stoppage will be coordinated with the resident engineer and/or the Authority or its designee. The Contractor will suspend ground-disturbing activities in the immediate construction area where the potential construction activity could result in "take" of special-status wildlife species or until non-listed species, including mammals, are relocated; work may continue in other areas. Written permission will be obtained from CDFW to relocate any non-listed mammals before their being relocated. The Contractor will continue the suspension until the individual leaves voluntarily, or is relocated to a release area using USFWS- and/or CDFW-approved handling techniques and relocation methods, or as required by USFWS or CDFW. The Project Biologist, Regulatory Specialist (Waters), and Project Botanist will submit a memorandum to the Mitigation Manager to document compliance within 1 day of the work stoppage and	✓		Construction	Stop Work, relocate species (if possible), and report	1 day following work stoppage	Contractor	Contractor	1 day following work stoppage	Condition of Design/Build Contract	BIO-MM#13 applies to all BIO Impacts
				✓								Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern

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		subsequent action.										
BIO-MM#14	"Take" Notification and Reporting	The Project Biologist, Regulatory Specialist (Water), or Project Botanist will immediately notify the Mitigation Manager in the event of an accidental death or injury to a federal- or state-listed species during project activities. The Project Biologist will then notify USFWS and/or CDFW within 24 hours in the event of an accidental death or injury to a federal- or state-listed species during project activities. The Project Biologist will submit a memorandum to the Mitigation Manager to document compliance with this measure. The memorandum will also identify suggested revisions to the construction activities or additional measures that will be implemented to minimize or prevent future impacts.		✓	Construction	Notification of Mitigation Manager, USFWS and/or CDFW and recommendation of additional measures	Immediate notification of Mitigation Manager; Notify USFWS and/or CDFW within 24 hours	Contractor	Contractor	Immediate notification of Mitigation Manager; Notify USFWS and/or CDFW within 24 hours	Condition of Design/Build Contract	Impact BIO#1: Construction Effects on Special-Status Plant Species
			✓	✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.
			✓	✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptile and amphibian species.
			✓	✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status bird species.
			✓	✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5 Project Effects on Special-

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			✓	✓								Status Plant Species:
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status invertebrate species.
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status reptiles and amphibian species.
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status bird species (Including raptors).
			✓	✓								Impact BIO#6: Project impact from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special status mammal species.
				✓								Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#15	Post-Construction	After each construction package, construction phase,	✓		Post-construction	Compliance Reporting	In accordance with reporting	Contractor	Contractor	In accordance with reporting schedule established by	Condition of Design/Build Contract	BIO-MM#15 applies to all BIO Impacts

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
	Compliance Reports	permitting phase, or other portion of the HSR section as defined by Authority is completed, the Mitigation Manager, or their designee, will submit post-construction compliance reports consistent with the requirements of the protocols of each appropriate agency (e.g., UFSWS, CDFW), including compliance with regulatory agency permits. The Mitigation Manager will submit a memorandum to the regulatory agencies to document compliance with this measure. The frequency of the memorandum compilation and submission will be consistent with the requirements in the regulatory agency permits.		✓			schedule established by agency permit requirements			agency permit requirements		Impact BIO#1 Construction Effects on Special-Status Plant Species
				✓								Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓								Impact BIO#7: Project Effects on Habitats of Concern
BIO-MM#16	Conduct Protocol-Level Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities	The Project Botanist will conduct protocol-level, Pre-construction botanical surveys for special-status plant species and special-status plant communities in all potentially suitable habitats where permission to enter was not granted during the spring and summer 2010 field surveys or 2011 supplemental surveys. The surveys will be conducted during the appropriate blooming period(s) for the species before the start of ground-disturbing activities for salvage and relocation activities. The Project Botanist will mark the locations of all special-status plant species and special-status plant communities observed for the	✓	✓	Pre-construction/Construction/ Post-construction	Conduct protocol level surveys for special-status plant species; Report findings; Restore temporary disturbed areas	Report findings at least 30 days prior to ground disturbance	Contractor	Contractor	Report findings at least 30 days prior to ground disturbance	Condition of Design/Build Contract Following requirements established by regulatory compliance permits	Impact BIO#1: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status plant species.
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant species or suitable habitat that has the potential to support these species.
			✓	✓								Impact BIO#5: Project impacts from the Preferred Alternative would permanently impact

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text	
		<p>Contractor to avoid. Before the start of ground-disturbing activities, all populations of special-status plant species and special-status plant communities identified during Pre-construction surveys within 100 feet of the construction footprint will be protected and delineated by the Contractor (directed by the Project Botanist) as ERAs. As appropriate, the Project Botanist will update the mapping of special-status species or habitats of concern within the construction limits based on resource agency permits. Portions of the construction footprint that support special-status plant species that will be temporarily disturbed will be restored onsite to Pre-construction conditions. Before disturbance, Pre-construction conditions, including species composition, species richness, and percent cover of key species will be documented, and photo points will be established. If special-status plant species cannot be avoided, mitigation for impacts on these species will be documented (density, percent cover, key habitat characteristics, including soil type, associated species, hydrology, topography, and photo documentation of Pre-construction conditions) and incorporated into a relocation/compensation program, as defined in BIO-MM#17. The Project Botanist will provide verification of survey results and report</p>										special-status plant species or suitable habitat that has the potential to support these species.	
			✓	✓									Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.
			✓	✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		findings through a memorandum to the Mitigation Manager to document compliance with this measure.										
BIO-MM#17	Prepare and Implement Plan for Salvage, Relocation and/or Propagation of Special-Status Plant Species	The Project Botanist will prepare a plan before the start of ground-disturbing activities to address monitoring, salvage, relocation, and propagation of special-status plant species. The relocation or propagation of plants and seeds will be performed at a suitable mitigation site approved by the appropriate regulatory agencies, and as appropriate per species. Documentation will include provisions that address the techniques, locations, and procedures required for the successful establishment of the plant populations. The plan will include provisions for performance that address survivability requirements, maintenance, monitoring, implementation, and the annual reporting requirements. Permit conditions issued by the appropriate resource agencies (e.g., USFWS, CDFW) will guide the development of the plan and performance standards. The Project Botanist will submit a memorandum to the Mitigation Manager to document compliance with this measure.	✓	✓	Pre-construction (Plan), Implementation during construction, Monitoring post-construction	Prepare/ Implement Plan and Report Compliance	Follow reporting requirements as established by regulatory compliance permits.	Contractor	Contractor	Follow reporting requirements as established by regulatory compliance permits.	Condition of Design Build Contract Salvage, Relocation, and Propagation of Special Status Plant Species Following requirements established by regulatory compliance permits	Impact BIO#1: Construction of the Preferred Alternative would directly or indirectly impact suitable habitat that has potential to support special-status plant species.
				✓								Impact BIO#3: Construction Effects on Habitats of Concern
			✓	✓								Impact BIO#5: Project impacts from the Preferred Alternative would permanently impact special-status plant species or suitable habitat that has the potential to support these species.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#18	Conduct Pre-construction Sampling and Assessment for Vernal Pool Fauna	Before the start of ground-disturbing activities, the Project Biologist will conduct pre-construction aquatic assessment and sampling in seasonal wetlands and vernal pools in the construction	✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text	
		footprint. The approved biologists will visit the sites after initial storm events to determine when seasonal wetlands and vernal pools have been inundated. A seasonal wetland/vernal pool is considered to be inundated when it holds greater than 3 cm of standing water 24 hours after a rain event. Approximately 2 weeks after the pools are inundated, the biologists will conduct general aquatic surveys in appropriate seasonal wetland and vernal pool habitats. The sampling is an assessment that will be useful in understanding the species present and will help guide the implementation of the performance standards to be consistent with BIO-MM#20: Implement and Monitor Vernal Pool Protection. The Project Biologist will submit a report to the Mitigation Manager and Authority or its designee within 30 days of completing the field work. The report will provide the documentation and the results of the sampling, including the results of the data collection and a comparison with the performance standards.										status invertebrate species.	
			✓										Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓										Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#19	Seasonal Vernal Pool Work Restriction	For seasonal avoidance of special-status vernal pool branchiopods and vernal-pool-dependent species (e.g., vernal pool branchiopods, western spadefoot toads, California tiger salamanders), the Contractor will not work within 250 feet of suitable aquatic habitats (e.g., vernal	✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.	
			✓									Impact BIO#6:	

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		pools, seasonal wetlands) from October 15 to June 1 (corresponding to the rainy season) or as determined through informal or formal consultation with the USFWS or USACE. Ground-disturbing activities may begin once the habitat is no longer inundated for the season and it is after April 15. If any work remains to be completed after October 15, the Contractor (under the direction of the Project Biologist) will install exclusion fencing and erosion control measures in those areas where construction activities need to be completed. The Project Biologist will document compliance through memoranda to the Mitigation Manager during the establishment of the fencing activities.	✓									Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
												Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#20	Implement and Monitor Vernal Pool Protection	Although all temporary impacts on vernal pools are considered to be permanent and will be mitigated through offsite compensatory mitigation (see BIO-MM#63), vernal pools within the temporary construction footprint will be protected by erecting exclusion fencing, if they can be avoided. The Contractor will erect and maintain the exclusion fencing. For impacts on vernal pools within the temporary construction footprint that cannot be avoided, the Contractor, under the guidance of the Regulatory Specialist (Waters), will place rinsed gravel within the affected vernal pools and will	✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓									Impact BIO#7: Project impacts from the Preferred

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		cover the affected vernal pools with geotextile fabric before the start of ground-disturbing activities to minimize damage to the soils and protect the contours. The Contractor, under the direction of the Regulatory Specialist (Waters), will collect a representative sampling of soils from the vernal pools before initiating ground-disturbing activities within the vernal pools. The representative soil samples will contain viable plant seeds and vernal pool branchiopod cysts to be preserved from the vernal pools. These samples may be incorporated into other vernal pools, as applicable, with USFWS and/or CDFW consultation. The Contractor will implement these measures within temporary impact areas adjacent to or within the construction footprint. Resource agency consultations with the USFWS and USACE will occur as needed and based on permit conditions. The Regulatory Specialist (Waters) will submit a memorandum on a weekly basis or at other appropriate intervals to the Mitigation Manager to document compliance with this measure. Because impacts to vernal pools within the temporary construction footprint are considered to be permanent impacts, these impacts will be mitigated through offsite mitigation, as described in BIO-MM#63. The Contractor will obtain approval from USACE, before the										Alternative would disturb portions of recovery plans.

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		implementation of the above-described mitigation measures, for any unanticipated temporary impacts on vernal pools. If unanticipated temporary impacts last more than one full wet-dry season cycle, offsite mitigation will be implemented.										
BIO-MM#21	Implement Avoidance and Minimization Measures for the Valley Elderberry Longhorn Beetle	Before and during the implementation of ground-disturbing activities, the Project Biologist will direct the Contractor to implement the avoidance and minimization measures detailed in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999a). These measures include conducting protocol-level presence/absence surveys for this species, establishing and maintaining appropriate buffer areas around elderberry plants, restricting the use of chemicals that might harm beetles, and mowing restrictions. After ground-disturbing activities are completed, any damage to temporarily disturbed buffer areas surrounding elderberry shrubs will be restored as detailed in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999a). The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#22	Conduct	Before the start of ground-	✓	✓	Pre-construction/ Construction	Pre-construction surveys	Weekly or at	Contractor	Contractor	Surveys conducted 30 days	Condition of Design Build	Impact BIO#2:

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
	Preconstruction Surveys for Special-Status Reptile and Amphibian Species	disturbing activities, the Project Biologist will conduct Preconstruction surveys in suitable habitats to determine the presence or absence of special-status reptiles and amphibian species within the construction footprint. Surveys will be conducted no more than 30 days before the start of ground-disturbing activities and will be phased with project build-out. The results of the Pre-construction survey will be used to guide the placement of the environmentally sensitive areas, ERAs, and wildlife exclusion fencing. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.				for special-status species, and establishment of ESAs and ERAs	other appropriate interval			prior to ground disturbance, During construction submit weekly reports or reporting requirements as established by regulatory compliance permits	Contract Following requirements established by regulatory compliance permits	Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#23	Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance, and Relocation	During ground-disturbing activities, the Project Biological Monitor will observe all construction activities in habitat that supports special-status reptiles and amphibians. If suitable habitat is present and environmentally sensitive areas are deemed necessary, the Project Biological Monitor will conduct a clearance survey within the area for special-status reptiles and amphibians after wildlife exclusion fencing is installed. If a special-status reptile or amphibian is present during construction, the Contractor will avoid the special-status reptile or amphibian specie. Otherwise, the Project Biological Monitor will relocate	✓	✓	Construction	Monitoring during construction, reporting	Daily monitoring, weekly or reporting requirements as established by regulatory compliance permits	Contractor	Contractor	Daily monitoring, weekly or reporting requirements as established by regulatory compliance permits	Condition of Design Build Contract Following requirements established by regulatory compliance permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		special-status reptiles or amphibians (other than California tiger salamander) found in the Environmentally Sensitive Area or construction footprint to an area outside the construction area as determined through consultation with USFWS and/or CDFW. If necessary, clearance surveys will be conducted daily. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										Alternative would disturb portions of recovery plans.
BIO-MM#24	Conduct Protocol and Pre-construction Surveys for California Tiger Salamander	In the annual grassland and pasture habitats in the Cross Creek grassland region, protocol-level surveys will be conducted in accordance with the Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander (USFWS and CDFG 2003). The purpose of these surveys will be to determine presence or absence of the California tiger salamander within the study area. Before the start of ground-disturbing activities, a qualified, agency-approved biologist (designated by the Project Biologist) will conduct visual pre-construction surveys in suitable habitats in the Cross Creek grassland region. Surveys will be conducted no more than 30 days before the start of ground-disturbing activities and will be phased with	✓		Pre-construction	Protocol and Pre-construction level surveys	Protocol level surveys, Pre-construction 30 day prior to construction; Weekly reporting or reporting requirements as established by regulatory compliance permits	Contractor	Contractor	Protocol level surveys (at least 1 year prior to ground disturbance), pre-construction 30 day prior to construction; Weekly reporting or reporting requirements as established by regulatory compliance permits	Condition of Design Build Contract Following requirements established by regulatory compliance permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

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		project build-out. In the unlikely event that California tiger salamander individuals are found within the project footprint during protocol-level pre-construction surveys, the Project Biologist will contact the USFWS and CDFW to identify appropriate avoidance and minimization measures to be implemented for this species. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#25	Implement Avoidance and Minimization Measures for California Tiger Salamander	<p>The measures listed below will be implemented in the Cross Creek grassland region to avoid and minimize potential adverse effects to this species:</p> <ul style="list-style-type: none"> The Contractor, under the direction of the Project Biologist will install, and maintain exclusion fencing along the perimeter of the construction footprint. The Project Biological Monitor will monitor the exclusion fencing to ensure that no take of California tiger salamander or destruction of their potential habitat outside of the project footprint occurs. Exclusion fencing will be composed of a combination of high-visibility construction fence and wildlife exclusion fence. Exclusion fencing must be trenched into the soil at least 4 inches in depth, with the soil compacted against both 	✓		Construction	Establish exclusion fencing	Daily or Twice per week inspections (non-consecutive days), weekly reporting	Contractor	Contractor	Daily or twice per week inspections (non-consecutive days), weekly reporting	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

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		<p>sides of the fence for its entire length to prevent central California tiger salamanders from passing under the fence. Barriers must be inspected by an USFWS-approved Project Biological Monitor at least twice weekly on non-consecutive days outside of the breeding season. Barriers will be inspected daily following any rain event and during months when juvenile central California tiger salamanders are most likely emigrating from their breeding ponds in search of burrows in surrounding upland habitat. Barriers will be installed by the Contractor with turn-arounds at any access openings needed in the fencing, to redirect central California tiger salamanders away from openings.</p> <ul style="list-style-type: none"> ▪ The Contractor will not conduct construction activities within 250 feet of potential California tiger salamander breeding habitat during the wet season (October 15 through June 1); however, construction activities may begin once the habitat is no longer inundated for the season and it is after April 15. <p>The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to</p>										

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		document compliance with this measure.										
BIO-MM#26	Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard	The Project Biologist will conduct protocol-level surveys in suitable habitats for the blunt-nosed leopard lizard within 1 year of each construction phase. These surveys will be conducted in areas of potential blunt-nosed leopard lizard habitat in accordance with the Approved Survey Methodology for the Blunt-Nosed Leopard Lizard (CDFG 2004). The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓		Pre-construction	Conduct Protocol level surveys; Reporting	Surveys within 1 year prior to construction; Reporting weekly or in Survey Methodology	Contractor	Contractor	Within 1 year prior to construction or as required in Survey Methodology	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
				✓								Impact BIO#2 – Construction effects on special-status reptiles and amphibian species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
				✓								Impact BIO#6: Project effects on special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
				✓								Impact BIO#7: Project effects would

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												disturb portions of recovery plans.
BIO-MM#27	Phased Pre-construction Surveys for Blunt-Nosed Leopard Lizard	The Project Biologist will conduct visual pre-construction surveys in areas of potential blunt-nosed leopard lizard habitat no more than 30 days before ground-disturbing activities. The Project Biological Monitor will conduct daily clearance surveys before construction activities. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure	✓		Construction	Pre-construction Surveys; Daily clearance surveys; reporting	Surveys within 30 days prior to ground disturbance; daily clearance surveys; weekly reporting or reporting requirements as established by regulatory compliance permits	Contractor	Contractor	Surveys within 30 days prior to ground disturbance; daily clearance surveys; weekly reporting or reporting requirements as established by regulatory compliance permits	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibian species.
				✓								Impact BIO#2 – Construction effects on special-status reptiles and amphibian species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
				✓								Impact BIO#6: Project effects on special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
				✓								Impact BIO#7: Project effects would disturb portions of recovery plans.
BIO-MM#28	Blunt-Nosed Leopard Lizard Avoidance	During the active season (April 15 through October 15), in areas where blunt-nosed leopard lizards or blunt-nosed leopard lizard signs are	✓		Construction	Establish buffers, vegetation removal, pre-construction survey, and passive relocation; erect barriers; monitoring and	Weekly reporting	Contractor	Contractor	Weekly reporting	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that

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		<p>present, the following measures will be implemented:</p> <ul style="list-style-type: none"> Following the phased pre-construction survey for blunt-nosed leopard lizard within the construction footprint (see BIO-MM#27), if active burrows or egg clutch sites are identified within the construction footprint, the Contractor and Project Biologist will establish, maintain, and monitor 50-foot buffers around active burrows and egg clutch sites. The 50-foot buffers will be established around the active burrow and clutch sites in a manner that allows for blunt-nosed leopard lizard to leave the construction footprint after the young have hatched. Project activities within the 50-foot buffers, including vegetation clearing and grubbing (as described below), will be prohibited until the eggs have hatched and blunt-nosed leopard lizard have been allowed to leave the construction footprint, as determined by the Project Biologist. Following the phased pre-construction survey for blunt-nosed leopard lizard within the construction footprint (see BIO-MM#27), if no active burrows or egg clutch sites are identified within the construction footprint, the Contractor, under the direction of the Project Biologist will 				reporting						<p>has potential to support special-status reptiles and amphibian species.</p> <p>Impact BIO#2 – Construction effects on special-status reptiles and amphibian species.</p> <p>Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.</p> <p>Impact BIO#6: Project effects on special-status reptiles and amphibian species.</p> <p>Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.</p> <p>Impact BIO#7: Project effects would disturb portions of recovery plans.</p>
				✓								
			✓									
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			✓									
				✓								

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		<p>conduct vegetation clearing and grubbing activities with hand tools. Cleared vegetation will be cut to 4 inches above the ground level, and all trimmings will be removed from the construction footprint. The vegetation-free work area will be allowed to sit undisturbed for a minimum of 72 hours to allow blunt-nosed leopard lizards to passively relocate from the site. A follow-up pre-construction survey will be conducted in the vegetation-free work area to look for blunt-nosed leopard lizards or their sign. Any blunt-nosed leopard lizards observed during the follow-up survey will be allowed to leave the work site on their own accord. Immediately after the follow-up pre-construction survey of the vegetation-free work area, the construction footprint will be delineated with high-visibility construction fence and a wildlife exclusion fence with "a non-gaping, non-climbable barrier using a rigid and non-climbable material." The vegetation-free work area within the wildlife exclusion fence will be maintained by the Contractor and monitored daily by the Project Biologist.</p> <ul style="list-style-type: none"> ▪ The Contractor will conduct ground-disturbing activities when air temperatures are between 75 and 95 										

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>degrees Fahrenheit. The temperature range corresponds to the period when this species is moving around and can avoid danger.</p> <p>During the non-active season (October 16 through April 14), suitable blunt-nosed leopard lizard burrows identified during protocol-level and pre-construction surveys will be avoided by the Contractor. A 50-foot no-work buffer will be established around burrows to prevent impacts until the active season, when blunt-nosed leopard lizards will be able to leave the vegetation-free work area on their own accord. The no-work buffer will be established by routing the high-visibility construction fence and wildlife exclusion fence around the suitable burrow sites in a manner that allows for a connection between the burrow site and the suitable natural habitat adjacent to the footprint so that blunt-nosed leopard lizard individuals are able to leave the construction footprint during the active season. If construction activities are required during this period, the appropriate measures will be established through consultation with USFWS and CDFW.</p> <p>Non-disturbance exclusion zones will be maintained by the Contractor and monitored by USFWS-approved biological monitor(s) to avoid the possibility for take of lizards, their burrows/nests, or</p>										

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		the species' habitat outside of the project footprint. If blunt-nosed leopard lizards are observed at any time during protocol-level surveys, phased pre-construction surveys, or during construction, USFWS and CDFW will be contacted. Appropriate measures to avoid take of the species will be established through consultation with the USFWS and CDFW. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#29	Conduct Preconstruction Surveys and Delineate Active Nest Exclusion Areas for Other Breeding Birds	Before the start of ground-disturbing activities, the Project Biologist will conduct visual Preconstruction surveys where suitable habitats are present for nesting birds protected by the MBTA if construction and habitat removal activities are scheduled to occur during the bird breeding season (February 1 to August 15). In the event active bird nests are encountered during the Pre-construction survey, the Project Biologist in conjunction with the Contractor will establish nest avoidance buffer zones as appropriate. The buffer distances will be consistent with the intent of the MBTA. The Project Biologist will delineate nest avoidance buffers established for ground-nesting birds in a manner that does not create predatory bird perch points in	✓	✓	Pre-construction	Pre-construction surveys, and establish nest buffers	Surveys conducted prior to disturbance; Report weekly or as established by regulatory compliance permits	Contractor	Contractor	Surveys conducted prior to disturbance; Report weekly or as established by regulatory compliance permits	Condition of Design Build Permit	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		close proximity (150 feet) to the active nest site. The Project Biologist or Biological Monitor will periodically monitor active bird nests. The Project Biologist will maintain the nest avoidance buffer zone until nestlings have fledged and are no longer reliant on the nest or parental care for survival or the nest is abandoned (as determined by the Project Biologist). The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#30	Conduct Preconstruction Surveys and Monitoring for Raptors	No more than 14-days before the start of ground-disturbing activities, the Project Biologist will conduct visual Pre-construction surveys where suitable habitats are present for nesting raptors if construction and habitat removal activities are scheduled to occur during the bird-breeding season (February 1 to August 15). Surveys will be conducted in areas within the construction footprint and, where permissible, within 500 feet of the construction footprint for raptor species (not Fully Protected species) and 0.5 mile of the construction footprint for Fully Protected raptor species. The required survey dates will be modified based on local conditions. If breeding raptors with active nests are found, the Project Biologist in conjunction with the Contractor will establish a	✓	✓	Pre-construction/ Construction	Pre-construction surveys, and establishment of nest buffers	Surveys conducted no more than 14 days prior to construction; Report weekly or as established by regulatory compliance permits	Contractor	Contractor	Surveys conducted no more than 14 days prior to construction; Report weekly or as established by regulatory compliance permits	Condition of Design Build Permit	<p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).</p> <p>Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).</p> <p>Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.</p>

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		500-foot buffer around the nest to be maintained until the young have fledged from the nest and are no longer reliant on the nest or parental care for survival or the nest fails (as determined by the Project Biologist). If fully protected raptors (e.g., white tailed-kite) with active nests are found, the Project Biologist in conjunction with Contractor will establish a 0.5-mile buffer around the nest to be maintained until the young have fledged from the nest or the nest fails (as determined by the Project Biologist). Adjustments to the buffer(s) will require prior approval by USFWS and/or CDFW. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#31	Bird Protection	During Final Design, the Project Biologist will verify that the catenary system, masts, and other structures such as fencing are designed to be bird and raptor-safe in accordance with the applicable recommendations presented in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) and Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012). The Project Biologist will check the final design drawings and submit a memorandum to the Mitigation Manager to document	✓	✓	Construction	Verify structures are raptor safe in accordance with APLIC guidance; Compliance Reporting	Prior to Final Design	Contractor	Contractor	Prior to Final Design	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors). Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		compliance with this measure.	✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#32	Conduct Protocol and Pre-construction Surveys for Swainson's Hawks	The Project Biologist will conduct Pre-construction surveys for Swainson's hawks as described in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee [SHTAC] 2000). Surveys will be performed during the nesting season (March 1 through August 1) in the year before ground-disturbing activities within the construction footprint and within a 0.5-mile buffer, where access is permitted. The Pre-construction nest surveys following the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) will be phased with project build-out. The Pre-construction surveys will determine the status (i.e., active, inactive) of observed nests. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓	Pre-construction	Conduct Protocol and Pre-construction Surveys; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#33	Swainson's Hawk Nest Avoidance and	If active Swainson's hawk nests (defined as a nest used one or more times in the last 5	✓	✓	Construction	Establish active nest buffers; Compliance	Weekly or as established by	Contractor	Contractor	Weekly or as established by	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
	Monitoring	years) are found within 0.5-mile of the construction footprint during the nesting season (March 1 to August 1), the active nests within the 0.50-mile buffer of the construction footprint will be monitored daily by the Project Biological Monitor to assess whether the nest is occupied. If the nest is occupied, the health and status of the nest will be monitored until the young fledge or for the length of construction, whichever occurs first. The Project Biologist in conjunction with the Contractor, will implement buffers restricting construction activities, following CDFW's Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (<i>Buteo swainsoni</i>) in the Central Valley of California (CDFG 1994). Adjustments to the buffer(s) may be made in consultation with CDFW. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓		Reporting	regulatory compliance permits			regulatory compliance permits	Condition of regulatory permits	would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors). Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors). Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#34	Monitor Removal of Nest Trees for Swainson's Hawks	Before the start of ground-disturbing activities, the Project Biological Monitor will monitor nest trees for Swainson's hawks in the construction footprint following the guidelines and methods presented in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (SHTAC 2000). If an occupied	✓	✓	Construction	Monitor Swainson's hawk nest trees; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors). Impact BIO#6: Project impacts from the Preferred

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		Swainson's hawk nest must be removed, the Authority will obtain take authorization through a Section 2081 Incidental Take Permit (including compensatory mitigation to offset the loss of the nest tree) from CDFW. If ground-disturbing activities or other project activities may cause nest abandonment by a Swainson's hawk or forced fledging within the specified buffer area, monitoring of the nest site by the Project Biological Monitor will be conducted to determine if the nest is abandoned. Removal of nesting trees outside of the nesting season (generally between October 1 and February 1) does not require authorization under the Section 2081 Incidental Take Permit. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓									Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
												Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#35	Conduct Protocol Surveys for Burrowing Owls	Before the start of ground-disturbing activities a qualified, agency-approved biologist, designated by the Project Biologist, will conduct protocol-level surveys in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012c). The Project Biologist or designee will conduct these surveys at appropriate timeframes within suitable habitat located in the construction footprint. Results of the surveys will be used to inform BIO-MM#36. These	✓	✓	Pre-construction	Protocol level surveys; Compliance Reporting	Weekly or at other appropriate interval	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		surveys will be conducted within suitable habitat of the construction footprint and within a 150-meter (approximately 500-foot) buffer. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										has the potential to support special-status bird species (including raptors).
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#36	Burrowing Owl Avoidance and Minimization	The Project Biologist will implement burrowing owl avoidance and minimization measures following CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). During the nesting season (February 1 through August 31) occupied burrowing owl burrows will not be disturbed unless it is verified that either the birds have not begun egg-laying and incubation or the juveniles from the occupied burrows are foraging independently and are capable of independent survival (as determined by the Project Biologist). Unless otherwise authorized by CDFW, the Project Biologist in conjunction with the Contractor, will establish buffers (as an ESA) between the construction work area and occupied burrowing owl nesting sites as described in Table 3.7-19. Adjustments to the buffer(s) will require prior approval by CDFW. Eviction of burrowing owls outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from	✓	✓	Construction	Establish exclusion zones or buffers; Compliance Reporting	Weekly or at other appropriate interval	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).
				✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).

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		the CDFW authorizing the eviction. If burrowing owls must be moved from the project area, the Project Biologist will undertake passive relocation measures, including monitoring, in accordance with CDFW's (CDFG 2012) guidelines. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure. Table 3.7-19 California Department of Fish and Wildlife recommended restricted activity dates and setback distances by level of disturbance for burrowing owls Location Time of Year Level of Disturbance Low Medium High Nesting Sites April 1– Aug 15 200 m 500 m 500 m Nesting Sites Aug 16-Oct 15 200 m 200 m 500 m Nesting Sites Oct 16-March 31 50 m 100 m 500 m										
BIO-MM#37	Conduct Surveys for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse	Before the start of construction, the Project Biologist will conduct a habitat assessment in potentially suitable habitat within the project footprint to determine presence of special-status small mammal species burrows or their signs. The habitat assessment surveys will be conducted within 2 years, and no more than 14 days before the start of construction or ground-disturbing activities and may be phased with project build-out. If no burrows or signs of special-status small mammal	✓	✓	Pre-construction	Habitat Assessment	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species. Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal

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		species are detected, no further measures will be required. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure. ³	✓									species. Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#38	Implement Avoidance and Minimization Measures for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse	If during the habitat assessment, burrows or signs of special-status small mammal species are detected, the Project Biologist will establish non-disturbance exclusion zones (i.e., wildlife exclusion fencing [e.g., a silt fence or similar material]) in areas where special-status small mammal species are believed to be present. Non-disturbance exclusion zones will be established at least 14 days before the start of ground-disturbing activities. The non-disturbance exclusion fence with one-way exit/escape points will be placed to exclude the special-status small mammals from the construction area. The wildlife exclusion fence will be established around burrows in a manner that allows state-listed species to leave the construction footprint. Additional measures such as one or both of the following will be implemented after the exclusion fencing is installed. <ul style="list-style-type: none"> The Contractor will trim and clear vegetation to the ground by hand or using hand-operated equipment to discourage the presence 	✓	✓	Pre-construction	Protocol level surveys; Compliance Reporting	Weekly or at other appropriate interval	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

³ This measure is applicable to the F-B LGA, except for the portion of the measure specific to Dulzura pocket mouse, as no suitable habitat for this species is present in the habitat study area; therefore, the F-B LGA would not affect this species.

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		<p>of special-status small mammal species in the construction footprint. The cleared vegetation will remain undisturbed by project construction equipment for 14 days to allow species to passively relocate through the one-way exit/escape points along the wildlife exclusion fencing.</p> <ul style="list-style-type: none"> A qualified, agency-approved biologist, designated by the Project Biologist, will conduct small-mammal trapping and relocation in general accordance with the survey protocols in the California Valley Solar Ranch Project: Plan for Relocation of Giant Kangaroo Rats (<i>Dipodomys ingens</i>) (H.T. Harvey & Associates 2011) or as determined in consultation with CDFW and USFWS.⁴ 										
BIO-MM#39	Implement Avoidance and Minimization Measures for Fresno Kangaroo Rat	Before the start of ground-disturbing activities, a qualified agency-approved biologist, designated by the Project Biologist, will conduct a habitat assessment on any parcels within the project footprint that may support the Fresno kangaroo rat to determine presence of kangaroo rat burrows or their signs. If no burrows or signs of kangaroo rats are detected and kangaroo rats are confirmed to be absent from the construction footprint, the following actions will be	✓		Pre-construction	Habitat assessment; Agency Coordination; Compliance Reporting	Weekly Reporting or at other appropriate interval	Contractor	Contractor	Weekly Reporting or at other appropriate interval	Condition of Design Build Contract Condition of regulatory permits	<p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.</p> <p>Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-</p>
			✓									

⁴ This measure is applicable to the F-B LGA, except for the portion of the measure specific to Dulzura pocket mouse, as no suitable habitat for this species is present in the habitat study area; therefore, the F-B LGA would not affect this species.

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>implemented:</p> <ul style="list-style-type: none"> The Project Biologist will install, maintain, and monitor exclusion fencing along the perimeter of the construction footprint to ensure that no take of Fresno kangaroo rat or destruction of their potential habitat outside of the project footprint occurs. The Contractor, under the supervision of the Project Biologist, will trim and clear vegetation to the ground by hand or using hand-operated equipment to discourage small-mammal presence in the construction footprint. The area from which the vegetation was cleared will remain undisturbed by project construction equipment for 14 days to allow other small-mammal species to passively relocate through the one-way exit/escape points along the wildlife exclusion fencing. <p>In the unlikely event that kangaroo rat individuals, their burrows, or signs of them are found within the project footprint during the habitat assessment, the USFWS and CDFW will be notified immediately and the FRA will reinstate consultation to identify appropriate avoidance and minimization measures to be implemented for this species, such as:</p> <ul style="list-style-type: none"> With agency permission, small-mammal trapping may be conducted by a 	✓									<p>status mammal species.</p> <p>Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.</p>

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		<p>qualified biologist(s) with the necessary permits. The trapping surveys will be conducted in general accordance with California Valley Solar Ranch Project: Plan for Relocation of Giant Kangaroo Rats (<i>Dipodomys ingens</i>) (H.T. Harvey & Associates 2011) or as determined in consultation with either USFWS or CDFW and will be limited to the dry, summer months on evenings when the nightly low temperature is forecast to exceed 50°F.</p> <p>The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.</p>										
BIO-MM#40	Conduct Preconstruction Surveys for Special-Status Bat Species	<p>Before the start of ground-disturbing activities, a qualified, agency-approved biologist, designated by the Project Biologist, will conduct a visual and acoustic Pre-construction survey for roosting bats. A minimum of one day and one evening will be included in the visual Pre-construction survey. The Project Biologist, in coordination with the Mitigation Manager and Authority, will contact CDFW if any hibernation roosts or active nurseries are identified within or immediately adjacent to the construction footprint, as appropriate. The Project Biologist will submit a memorandum, on a weekly</p>	✓	✓	Pre-construction	Pre-construction Surveys, Compliance Reporting	Weekly or at other appropriate interval	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	<p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.</p> <p>Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.</p> <p>Impact BIO#7: Project impacts from</p>
			✓	✓								
			✓									

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		basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#41	Bat Avoidance and Relocation	During ground-disturbing activities, if active or hibernation roosts are found, the Contractor will avoid them, if feasible, for the period of activity. If avoidance of the hibernation roost is not feasible, the Project Biologist, will prepare a relocation plan and coordinate the construction of an alternative bat roost with CDFW. The Contractor, under the direction of the Project Biologist will implement the Bat Roost Relocation Plan before the commencement of construction activities. The Contractor, under the supervision of the Biological Monitors, will remove roosts with approval from CDFW before hibernation begins (October 31), or after young are flying (July 31), using exclusion and deterrence techniques described in BIO-MM#42, below. The timeline to remove vacated roosts is between August 1 and October 31. All efforts to avoid disturbance to maternity roosts will be made during construction activities. The Project Biologist will submit a memorandum to the Mitigation Manager, on a weekly basis or at other appropriate intervals, to document compliance with this measure.	✓	✓	Construction	Bat Roost Relocation Plan; Compliance Reporting	Weekly or at other appropriate interval	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#42	Bat Exclusion and Deterrence	During ground-disturbing activities, if non-breeding or non-hibernating individuals or	✓	✓	Construction	Bat Exclusion and Deterrence; Compliance	Weekly or at other appropriate	Contractor	Contractor	Weekly or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative

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		groups of bats are found within the construction footprint, the Project Biologist will direct the Contractor to safely exclude the bats by either opening the roosting area to change the lighting and air-flow conditions or installing one-way doors or other appropriate methods specified by CDFW. The Contractor will leave the roost undisturbed by project activities for a minimum of 1 week after implementing exclusion and/or eviction activities. The Contractor will not implement exclusion measures to evict bats from established maternity roosts or occupied hibernation roosts. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.				Reporting	interval					would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#43	Conduct Preconstruction Surveys for American Badger and Ringtail	Before the start of ground-disturbing activities, the Project Biologist will conduct Pre-construction surveys for den sites within suitable habitats in the construction footprint. These surveys will be conducted no more than 30 days before the start of ground-disturbing activities and phased with project build-out. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓	Pre-construction	Conduct Pre-construction surveys; Compliance Reporting	Weekly Reporting or at other appropriate interval	Contractor	Contractor	Weekly Reporting or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal

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			✓									species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#44	American Badger and Ringtail Avoidance	The Contractor, under the direction of the Project Biologist, will establish a 50-foot buffer around occupied dens. The Contractor and Project Biologist will establish a 100-foot buffer around maternity dens through the pup-rearing season (American badger: February 15 through July 1; Ringtail: May 1 through June 15). Adjustments to the buffer(s) will require prior approval by CDFW as coordinated by the Project Biologist, under the supervision of the Mitigation Manager. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓	Construction	Establish buffer around active dens; Compliance Reporting	Weekly Reporting or at other appropriate interval	Contractor	Contractor	Weekly Reporting or at other appropriate interval	Condition of Design Build Contract	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#45	Conduct Preconstruction Surveys for San Joaquin Kit Fox	Before the start of ground-disturbing activities, the Project Biologist will conduct Preconstruction surveys in accordance with USFWS' San Joaquin Kit Fox Survey Protocol for the Northern Range (USFWS 1999b). Preconstruction surveys for the kit fox will be conducted between May 1 and September 30 within the	✓	✓	Pre-construction	Conduct Pre-construction Survey for San Joaquin kit fox; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		study area in suitable habitat areas (alkali desert scrub, annual grassland, pasture, barren, and compatible-use agricultural lands) to identify known or potential San Joaquin kit fox dens. Pre-construction surveys will be conducted by a USFWS-approved project biologist within 30 days before the start of construction or ground-disturbing activities and will be phased with project build-out. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓									Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species. Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#46	Minimize Impacts on San Joaquin Kit Fox	The Contractor, under direction of the Project Biologist, will implement USFWS' Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS [1999] 2011) to minimize ground disturbance-related impacts on this species. The Project Biologist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓	Construction	Implement Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species. Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species. Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								
			✓									

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BIO-MM#47	Restore Temporary Riparian Impacts	During post-construction, the Contractor, under the direction of the Project Botanist, will revegetate all disturbed valley foothill riparian areas using appropriate plants and seed mixes. The Project Botanist will monitor restoration activities consistent with provisions in the RRP, as described in BIO-MM#6. The Project Botanist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager documenting compliance and other reporting requirements required by the regulatory agency permits (e.g., 1600 Streambed Alteration Agreement).		✓	Post-construction	Restoration of temporary disturbance areas; Compliance Reporting	Weekly Reporting or as established by regulatory compliance permits (BIO-MM# 62)	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#1 Construction Effects on Special-Status Plant Species
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters.
				✓								Impact BIO#5: Project impacts from Preferred Alternative would permanently impact special-status plant species or suitable habitat that has potential to support these species.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters.
			✓	✓								Impact BIO#7: Project impacts from

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#48	Restore Temporary Impacts on Jurisdictional Waters	During or after the completion of construction, the Contractor, under direction of the Regulatory Specialist (Waters) and Project Botanist, will restore disturbed jurisdictional waters to original topography using stockpiled and segregated soils. In areas where gravel or geotextile fabrics have been placed to protect substrate and minimize impacts on jurisdictional waters, these materials will be removed and affected features will be restored. The Contractor, under supervision of the Project Botanist, will conduct revegetation using appropriate plants and seed mixes. The Authority will conduct maintenance monitoring consistent with the provisions in the RRP (BIO-MM#6). The Project Botanist will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.	✓	✓	Construction or Post-construction	Restoration of temporary disturbance areas; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor, Authority	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#49	Monitor Construction Activities within Jurisdictional Waters	During ground-disturbing activities, the Regulatory Specialist (Waters) and Project Biological Monitor will conduct monitoring within and adjacent to jurisdictional waters, including monitoring of the installation of protective devices (silt fencing, sandbags, fencing, etc.), installation and/or removal of	✓		Construction	Compliance Monitoring, Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.
			✓									Impact BIO#2: Construction of the

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		creek crossing fill, construction of access roads, vegetation removal, and other associated construction activities. The Project Biological Monitor will conduct biological monitoring to document adherence to habitat avoidance and minimization measures addressed in the project mitigation measures, including, but not limited to, the provisions outlined in BIO-MM#5, BIO-MM#7, BIO-MM#8, BIO-MM#10, BIO-MM#12 through BIO-MM#15, BIO-MM#47, and BIO-MM#48. The monitor will also document adherence to all relevant conservation measures as listed in the USFWS, CDFW, SWRCB, and USACE permits. The Regulatory Specialist (Waters) will submit a memorandum, on a weekly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										Preferred Alternative would disturb the suitable habitat that has potential to support special-status reptiles and amphibian species.	
			✓	✓									Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas.
			✓	✓									Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters.
			✓										Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓										Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓	✓									Impact BIO#7: Project impacts from the Preferred Alternative would

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												permanently impact special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#50	Mitigation and Monitoring of Protected Trees	<p>Before, during, and after construction, the following methods to preserve and/or mitigate for impacts on protected trees will be implemented:</p> <ul style="list-style-type: none"> A qualified biologist, designated by the Project Botanist, will conduct surveys before removal or disturbance to evaluate the condition of all protected trees found within areas directly and indirectly affected by the Fresno to Bakersfield Section. The Authority will compensate for impacts and effects to protected tree resources, including removal or trimming of naturally occurring native protected trees and landscape or ornamental trees (see BIO-MM#64, Compensate for Impacts on Protected Trees). The Contractor, under the direction of the Project 		✓	Pre-construction/ Construction/ Post-construction	Conduct Surveys prior to removal; Provide tree protection; Authority Compensate for Impacts	Monthly	Contractor	Contractor	Monthly	Condition of Design Build Contract	Impact BIO#3: Construction of the Preferred Alternative would disturb portions of recovery plans.
				✓								Impact BIO#3: Construction of the Preferred Alternative would permanently affect protected trees.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect protected trees.

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		<p>Botanist, will fence protected trees that may be indirectly affected by construction activities 5 feet from their drip lines to form ERAs.</p> <ul style="list-style-type: none"> The Authority will prepare and implement a monitoring and maintenance program that monitors transplanted trees for reestablishment of root systems. The Project Botanist will submit a memorandum to the Mitigation Manager to document compliance with this measure. 										
BIO-MM#51	Install Flashing or Slats within Security Fencing	<p>During construction , the Contractor, under the direction of the Project Biologist, will install permanent security fencing consistent with the final design along portions of the project that are adjacent to wildlife movement corridors and natural habitats (e.g., alkali desert scrub, annual grassland). The security fencing will be enhanced with flashing or slats for 6 inches below ground surface to 12 inches above to prevent special-status reptiles and mammals from moving into the right-of-way. The fencing flashing or slats will be maintained during operation of the HSR project. The Project Biologist will verify that the installation is consistent with the designated terms and conditions in the applicable permits. The design of the reptile and mammal-proof fencing and the exact locations where reptile and</p>	✓	✓	Construction	Install fencing enhanced with flashing or slats; Reporting	Yearly	Contractor	Contractor	Yearly	Condition of Design Build Contract Requirement of Regulatory Agency Permits	Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#4: Construction of the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
			✓	✓								Impact BIO#6: Project Effects on Special-Status Wildlife
				✓								Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.

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		mammal-proof fencing will be installed will be determined in consultation with USFWS and CDFW. The Project Biologist will submit a memorandum, on a yearly basis or at other appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#52	Construction in Wildlife Movement Corridors	Before the start of ground-disturbing activities, the Project Biologist will submit a construction avoidance and minimization plan for wildlife movement linkages (e.g., SR 43–Garces Highway and Deer Creek–Sand Ridge linkages, Kern River linkage) to the Authority via the Mitigation Manager for concurrence. The plan will limit the use of construction and avoid permanent fencing in wildlife movement linkages where the viaducts (e.g., elevated platforms) or bridges are included in the final design. The Contractor will minimize ground-disturbing activities within the wildlife linkages (e.g., SR 43–Garces Highway and Deer Creek–Sand Ridge linkages) during nighttime hours to the extent practicable. The Contractor will also keep nighttime illumination (e.g., for security) from spilling into the linkages or shield nighttime lighting to avoid illumination spilling into the linkages. Inspections by the Project Biologist will verify compliance with this measure. The Project Biologist will submit a memorandum, on a weekly basis or at other	✓	✓	Pre-construction	Prepare Avoidance and Minimization Plan for Construction in Wildlife Movement linkages	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Construction in Wildlife Movement Linkages Plan	Impact BIO#2: Construction Effects on Special-Status Wildlife
				✓								Impact BIO#4: Construction of the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.

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		appropriate intervals, to the Mitigation Manager to document compliance with this measure.										
BIO-MM#53	Compensate for Impacts on Special-Status Plant Species	<p>Before final design, the Authority will mitigate the impacts on special-status plants in accordance with the USFWS Biological Opinion (USFWS 2013) by implementing the following measures:</p> <ul style="list-style-type: none"> ▪ Compensation for federally listed plant species that are observed within the project footprint and that cannot be avoided will be compensated at a 1:1 ratio based on actual acres of direct effects by the following: <ul style="list-style-type: none"> a. Identification of suitable sites to receive the listed plants. <ul style="list-style-type: none"> i. Pixley National Wildlife Refuge, Allensworth Ecological Reserve/State Historic Park, Kern National Wildlife Refuge, Atwell Island, Alkali Sink Ecological Reserve, Semitropic Ecological Reserve, and Kern Water Bank. ii. Authority-proposed permittee- 	✓	✓	Pre-construction/ Construction/ Post-construction	Compliance Report	Before final design	Authority	Authority	Before final design	Authority to compensatory based on extent of special-status plant species impacted by the Contractor Regulatory agency permit requirements	Impact BIO#1: Construction of the Preferred Alternative would directly or indirectly impact suitable habitat that has potential to support special-status plant species.
				✓								Impact BIO#3: Construction of the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.
				✓								Impact BIO#3: Construction of the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								Impact BIO#5: Project impacts from Preferred Alternative would permanently impact special-status plant species or suitable habitat that has potential to support these species.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.

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		responsible mitigation sites. iii. Other locations approved by USFWS. b. Collection of seeds, plant materials, and top soil from the project footprint before construction impacts. The Authority or its designee will submit a memorandum to the USFWS and or CDFW to document compliance with this measure. ⁵	✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#54	Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp	The Authority will mitigate direct and indirect impacts, including temporary and permanent, on vernal pool branchiopod habitat through compensation determined in consultation with the USFWS and USACE. Compensation for vernal pool branchiopod habitat (e.g., vernal pools, seasonal wetlands) is addressed under compensation for impacts on jurisdictional waters (BIO-MM#63). The Authority or its designee will submit a memorandum to the USFWS to document compliance with this measure.	✓		Pre-construction, Construction, Post-construction	Compliance Report	Prior to Operation	Authority	Authority	Prior to Operation	Authority to compensatory based on amount suitable habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species. Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species. Impact BIO#7: Project impacts from the Preferred Alternative would
			✓									
			✓									

⁵ This measure is applicable to the F-B LGA, except for the portion of the measure specific to Dulzura pocket mouse, as no suitable habitat for this species is present in the habitat study area; therefore, the F-B LGA would not affect this species.

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												disturb portions of recovery plans.
			✓									Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
BIO-MM#55	Compensate for Impacts on Valley Elderberry Longhorn Beetle	The Authority will provide compensatory mitigation for the valley elderberry longhorn beetle, including transplantation and replacement of elderberry shrubs and maintenance for replacement shrubs following the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999a). The performance criteria include a minimum survival rate of at least 60% of the elderberry plants, and 60% of the associated native plants must be maintained throughout the monitoring period. If survival drops below 60%, failed plantings shall be replaced. The Authority will submit a memorandum to the USFWS to document compliance with this measure.	✓		Pre-construction, Construction, Post-construction	Compliance Report	Transplant Pre-construction; Compensatory prior to Operation	Authority	Authority	Transplant Pre-construction; Compensatory prior to Operation	Authority to compensatory based on number of host plants for the valley elderberry longhorn beetle impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓									Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.

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BIO-MM#56	Compensate for Impacts on California Tiger Salamander	<p>If compensatory mitigation is required to offset the loss of habitat for California tiger salamander, the Authority will determine the compensation through consultation with the USFWS. Compensatory mitigation could include one of the following:</p> <ul style="list-style-type: none"> ▪ Purchase of credits from an agency-approved mitigation bank. ▪ Fee-title-acquisition of natural resource regulatory agency-approved property. ▪ Purchase or establishment of a conservation easement with an endowment for long-term management of the property-specific conservation values. ▪ In-lieu fee contribution determined through negotiation and consultation with USFWS. <p>The Authority will submit a memorandum to the USFWS and CDFW to document compliance with this measure</p>	✓		Pre-construction, Construction, Post-construction	Compliance Report	Prior to Operation	Authority	Authority	Prior to Operation	Authority to compensatory based on amount suitable habitat for California tiger salamander impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb the suitable habitat that has potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓									Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
BIO-MM#57	Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel	The Authority will determine compensatory mitigation to offset the permanent and temporary loss of suitable habitat for the blunt-nosed leopard lizard, Tipton kangaroo rat, and Nelson's antelope squirrel through consultation with the USFWS and/or CDFW. Compensatory mitigation could include one of	✓	✓	Pre-construction/ Construction/ Post-construction	Compliance Report	Prior to operation	Authority	Authority	Prior to operation	Authority to compensatory based on amount suitable habitat for Blunt-nosed leopard lizard, Tipton kangaroo rat and Nelson's Antelope Squirrel impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb the suitable habitat that has potential to support special-status reptiles and amphibian species.
				✓								Impact BIO#4: Construction impacts

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		the following: <ul style="list-style-type: none"> ▪ Purchase of credits from an agency-approved mitigation bank. ▪ Fee-title-acquisition of natural resource regulatory agency-approved property. ▪ Purchase or establishment of a conservation easement with an endowment for long-term management of the property-specific conservation values. ▪ In-lieu fee contribution determined through negotiation and consultation with USFWS. The Authority will submit a memorandum to the USFWS and or CDFW to document compliance with this measure. 										from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages. Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species. Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans. Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
BIO-MM#58	Compensate for Loss of Swainson's Hawk Nesting Trees	To compensate for the loss of occupied Swainson's hawk nesting trees or mortality to offspring, the Authority will provide project specific compensatory mitigation that replaces nesting trees and provides natural lands for foraging. Compensatory mitigation for Swainson's hawk will be based on the number of trees with "active" nests that are removed by	✓	✓	Pre-construction/ Construction/ Post-construction	Compliance Report	Prior to operation	Authority	Authority	Prior to operation	Authority to compensatory based on amount of habitat for Swainson's hawks impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors). Impact BIO#4: Construction impacts from the Preferred

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		construction activities, or where construction activities create a significant habitat modification that leads to a reduction in reproductive success, or nest abandonment. If project construction occurs within 0.5 mile of a documented or observed active nest, the Authority will acquire and preserve 150 acres of natural habitat, per active nest tree removed by construction activities, or where construction activities create a significant habitat modification that leads to reduce reproductive success or nest abandonment. At a minimum, the habitat preserved will contain trees suitable to support nesting and natural foraging habitat for Swainson's hawk. The Authority will submit a memorandum to the CDFW to document compliance with this measure.										Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
BIO-MM#59	Compensate for Loss of Burrowing Owl Active Burrows and Habitat	To compensate for permanent impacts on nesting, occupied, and satellite burrows and/or burrowing owl habitat, the Authority will provide compensatory mitigation based on CDFW's (CDFG 2012) Staff Report on Burrowing Owl Mitigation. The Authority will submit a memorandum to the CDFW to document compliance with this measure.	✓	✓	Pre-construction/Construction/Post-construction	Compliance Report	Prior to operation	Authority	Authority	Prior to operation	Authority to compensatory based on number of burrowing owl burrows impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support nesting special-status bird species (including raptors).
				✓								Impact BIO#4: Construction impacts from the Preferred Alternative would

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												permanently reduce the functionality of wildlife movement corridors and habitat linkages.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
			✓									Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
			✓	✓								Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.
BIO-MM#60	Compensate for Destruction of San Joaquin Kit Fox Habitat	The Authority will mitigate the destruction of San Joaquin kit fox habitat by the purchase of suitable, approved habitat (USFWS and CDFW). Habitat will be replaced at a minimum ratio of 1:1 for natural lands and a ratio of 0.1:1 for suitable urban or agricultural lands to provide additional protection and habitat in a location that is consistent with the recovery of the species. The Authority will mitigate the impacts on San Joaquin kit fox in accordance	✓	✓	Post-construction	Compliance Memo	Prior to operation	Authority	Authority	Prior to operation	Authority to compensatory based on area of habitat for San Joaquin kit fox impacted by the Contractor Regulatory agency permit requirements	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has the potential to support special-status mammal species.
			✓									Impact BIO#3: Construction of the Preferred Alternative would disturb areas located in USFWS recovery plans.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text							
		with the USFWS Biological Opinion (USFWS 2013) and/or CDFW 2081(b). The Authority will submit a memorandum to the USFWS and CDFW to document compliance with this measure.		✓								Impact BIO#4: Construction impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.							
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.							
			✓										Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.						
			✓	✓									Impact BIO#8: Project impacts from the Preferred Alternative would permanently reduce the functionality of wildlife movement corridors and habitat linkages.						
BIO-MM#61	Compensate for Permanent Riparian Impacts	The Authority will compensate for permanent impacts on riparian habitats (i.e., valley foothill riparian), as determined in consultation with the appropriate agencies (e.g., CDFW), by restoring nearby areas to suitable habitat and/or by purchasing credits in a mitigation bank.		✓	Post-construction	Compliance Memo	Prior to operation	Authority	Authority	Prior to operation	Authority to compensatory based on area of permanent riparian habitat impacted by the Contractor Regulatory agency permit requirements	Impact BIO#1 Construction Effects on Special-Status Plant Species							
				✓															Impact BIO#2: Construction Effects on Special-Status Wildlife
			✓	✓															

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		The Comprehensive Mitigation and Monitoring Plan will provide the planning details. Compensation will be based on the following ratio (acres of mitigation to acres of impact), pending agency confirmation: Valley Foothill Riparian: 2:1. The Authority will submit a memorandum to the SWRCB to document compliance with this measure.										Preferred Alternative would disturb special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters.
					✓							Impact BIO#5: Project Effects on Special-Status Plant Species
					✓							Impact BIO#6: Project Effects on Special-Status Wildlife Species
				✓	✓							Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.
				✓	✓							Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters.
				✓	✓							Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.
BIO-MM#62	Prepare and Implement a Site-Specific Comprehensive	As part of the USFWS, USACE, SWRCB, and CDFW permit applications and before the start of ground-disturbing		✓	Pre-construction/ Construction/ Post-construction	Authority responsible for the preparation of and implementation of the CMMP, monitoring, and	Prepare CMMP Pre-construction; Implement	Authority	Authority	Prepare CMMP Pre-construction; Implement CMMP During Construction	Requirement to acquire regulatory agency permits Authority to compensate based on	Impact BIO#1 Construction Effects on Special-Status Plant Species

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	Mitigation and Monitoring Plan	activities, the Authority will prepare a CMMP to mitigate for temporary and permanent impacts on biological resources (i.e., special-status wildlife, jurisdictional waters, and riparian areas). In the CMMP, performance standards, including percent cover of native species, survivability, tree height requirements, wildlife utilization, the acreage basis, restoration ratios, and the combination of onsite and/or offsite mitigation will be detailed; preference will be given to conducting the mitigation within the same HUC-8 or HUC-6 watershed where the impact occurs. The Project Biologist will work with the USACE, SWRCB, and CDFW to develop appropriate avoidance, minimization, mitigation, and monitoring measures to be incorporated into the CMMP. The CMMP will outline the intent to mitigate for the lost conditions, functions, and values of impacts on jurisdictional waters and state streambeds consistent with resource agency requirements and conditions presented in Sections 404 and 401 of the CWA and Section 1600 of the CFGC. The CMMP will incorporate the following standard requirements consistent with USACE, SWRCB, and CDFW guidelines:		✓		reporting. Implement CMMP, and prepare Monitoring Reports and Compliance Memos	CMMP During Construction and Post-Construction			and Post-Construction	area of temporary and permanent jurisdictional waters impacted by the Contractor	Impact BIO#2: Construction Effects on Special-Status Wildlife
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas.
			✓	✓								Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters.
				✓								Impact BIO#5: Project Effects on Special-Status Plant Species
				✓								Impact BIO#6: Project Effects on Special-Status Wildlife Species
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities and riparian areas.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters.
		<ul style="list-style-type: none"> ▪ Description of the project impact/site. ▪ Goal(s) (i.e., functions and 	✓	✓								Impact BIO#7: Project impact from the Preferred Alternative would

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		<p>values or conditions) of the compensatory mitigation project.</p> <ul style="list-style-type: none"> ▪ Description of the proposed compensatory mitigation site. ▪ Implementation plan for the proposed compensatory mitigation site. ▪ Maintenance activities during the monitoring period. ▪ Monitoring plan for the compensatory mitigation site. ▪ Completion of compensatory mitigation. ▪ Financial assurances. ▪ Contingency measures. ▪ Also, the following will be included at a minimum for the implementation plan: <ul style="list-style-type: none"> ▪ Site analysis for appropriate soils and hydrology. ▪ Site preparation specifications based on site analysis, including but not limited to grading and weeding. ▪ Soil and plant material salvage from impact areas, as appropriate to the timing of impact and restoration as well as the location of restoration sites. ▪ Specifications for plant and seed material appropriate to the locality of the mitigation site. ▪ Specifications for site maintenance to establish the habitats, including but not limited to weeding and 											disturb portions of recovery plans.

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		<p>temporary irrigation.</p> <p>Habitat preservation, enhancement, and/or establishment or restoration activities will be conducted on some of the compensatory (i.e., selected permittee-responsible) mitigation sites to achieve the mitigation goals. A detailed design of the mitigation habitats will be created in coordination with the permitting agencies and be described in the CMMP. It is recognized that several CMMPs will be developed consistent with the selected mitigation sites and the resources mitigated at each. The primary engineering and construction Contractor will ensure, through coordination with the Project Biologist, that construction is implemented in a manner that minimizes disturbance of such areas. Temporary fencing will be used during construction to avoid sensitive biological resources that are located adjacent to construction areas and can be avoided. Performance standards are targets for determining the effectiveness of the mitigation and assessing the need for adaptive management (e.g., mitigation design or maintenance revisions). The performance standards are developed so that progress towards meeting final success criteria can be assessed on an annual basis; the standard for each year is progressively closer to the final criteria (e.g., vegetation cover standards</p>										

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		<p>may increase annually until reaching the success criteria objective in the final year of monitoring).</p> <p>Success criteria are formal criteria that must be met after a specific timeframe to meet regulatory requirements of the permitting agencies. Where applicable, replacement planting/seeding will be implemented if monitoring demonstrates that performance standards or success criteria are not met during a particular monitoring interval. The performance standards will be used to determine whether the habitat improvement is trending toward sustainability (i.e., reduced human intervention) and to assess the need for adaptive management. These standards must be met for the habitat improvement to be declared successful, both during a particular monitoring year and at the end of the establishment period.</p> <p>These performance standards will be developed in consultation with the permitting agencies and described in the CMMP. The final success criteria will be developed in coordination with the regulatory agencies and presented in the CMMP.</p> <p>Examples of success criteria, which could be included in the CMMP, and would be assessed at the end of the monitoring period (assumed to be 5 years or as directed by agencies), include:</p> <ul style="list-style-type: none"> ▪ Percent survival of planted 										

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		<p>trees (65–85%, depending on species and habitat).</p> <ul style="list-style-type: none"> ▪ Percent absolute cover of highly invasive species, as defined by the California Invasive Plant Council (<5%). ▪ Percent total absolute cover of plant species (50-80%, depending on habitat type). ▪ Designed wetlands will meet U.S. Army Corps of Engineers criteria for hydrophytic vegetation, hydric soils, and hydrology as defined in the “Corps of Engineers wetland delineation manual” (Environmental Laboratory 1987). ▪ Designed vernal pools and seasonal wetlands will meet inundation and seasonal drying requirements as specified in the design and indicated by agencies. ▪ Species composition and community diversity, relative to reference sites, and/or as described in the guidelines issued by permitting agencies (e.g., USFWS conservation guidelines for valley elderberry longhorn beetle). <p>Performance standards and success criteria will be provided for each of the years of monitoring and will be specific to habitat types at each permittee-responsible mitigation site. The monitoring schedule will be detailed in the site-specific CMMPs.</p>										

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		<p>To be deemed successful, the site will be required to meet the performance standards established for the year in which monitoring is being conducted (e.g., monitoring conducted at intervals with increasing performance requirements). However, if performance standards are not met in specific years, remedial measures, such as regrading, adjustment to modify the hydrological regime, and/or replacement planting or seeding, must be implemented and that year's monitoring must be repeated the following year until the performance standards are met. The success criteria specified must be reached without human intervention (e.g., irrigation, replacement plantings) aside from maintenance practices described in the site-specific CMMPs for maintenance during the establishment period.</p> <p>The Project Biologist will oversee the implementation of all CMMP elements and monitor consistent with the prescribed maintenance and performance monitoring requirements. The Authority, or its designee, will prepare annual monitoring reports for 5 years (or less if success criteria are met as described earlier) and/or other documentation prescribed in the resource agency permits. The Authority will submit a memorandum to the regulatory agencies to document compliance with</p>										

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		this measure.										
BIO-MM#63	Compensate for Permanent and Temporary Impacts on Jurisdictional Waters	<p>The Authority will mitigate permanent and temporary wetland impacts through compensation determined in consultation with the USACE, SWRCB, USFWS, and CDFW, in order to be consistent with the CMMP (BIO-MM#62).</p> <p>Regulatory compliance for jurisdictional waters includes relevant terms and conditions from the USACE 404 Permit, SWRCB 401 Permit, and CDFW 1600 Streambed Alteration Agreement.</p> <p>Compensation shall include aquatic resources restoration, establishment, enhancement, or preservation through one or more of the following methods:</p> <ul style="list-style-type: none"> ▪ Purchase of credits from an agency-approved mitigation bank. ▪ Fee-title-acquisition of natural resource regulatory agency-approved property. ▪ Permittee-responsible mitigation through the establishment, re-establishment, restoration, enhancement, or preservation of aquatic resources and the establishment of a conservation easement or other permanent site protection method, along with financial assurance for long-term management of the property-specific conservation values. <p>In lieu fee contribution</p>	✓		Pre-construction/Construction/Post-construction	Compliance Report	Prior to operation	Authority	Authority	Prior to operation	Condition of Regulatory Agency Permits Authority to compensate based on area of permanent and temporary impacts on jurisdictional waters impacted by the Contractor	<p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.</p> <p>Impact BIO#3: Project impacts for the Preferred Alternative would permanently disturb portions of recovery plans.</p> <p>Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas.</p> <p>Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters</p> <p>Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.</p> <p>Impact BIO#6: Project impacts from the Preferred</p>
				✓								
			✓	✓								
			✓	✓								
			✓									
			✓									

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		<p>determined through negotiation and consultation with the various natural resource regulatory agencies. The following ratios are proposed as a minimum for compensation for permanent impacts; final ratios will be determined in consultation with the appropriate agencies:</p> <ul style="list-style-type: none"> ▪ Vernal pools: 2:1. ▪ Seasonal wetlands: between 1.1:1 and 1.5:1 based on impact type and function and values lost.- 1:1 offsite for permanent impacts.- 1:1 onsite and 0.1:1 to 0.5:1 offsite for temporary impacts. The Authority will mitigate impacts on jurisdictional waters by replacing, creating, restoring, enhancing or preserving aquatic resource at the ratios presented above or other ratios, as determined in consultation with the appropriate agencies, which compensates for functions and values lost. The Authority will consider modifying the vernal pool mitigation ratios in the final permits based on site-specific conditions and the specific life history requirements of vernal pool branchiopods, California tiger salamander, and western spadefoot toad. Where an HSR alternative affects an existing conservation area (e.g., Allensworth ER), the Authority will modify the mitigation ratio to meet the 										<p>Alternative would permanently impact suitable habitat that has the potential to support special-status reptiles and amphibian species.</p> <p>Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plant communities, and riparian areas.</p> <p>Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters</p> <p>Impact BIO#7: Project impacts for the Preferred Alternative would permanently disturb portions of recovery plans.</p>
			✓	✓								
			✓	✓								
			✓	✓								

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		<p>vernal pool mitigation requirement. Either the affected portion of the conservation area will be relocated or compensation will be provided to the holder of Allensworth ER in accordance with the Uniform Relocation and Real Property Policy Act of 1970, as amended.</p> <p>Through the CMMP reporting program and the applicable terms and conditions from the USACE 404 Permit, SWRCB 401 Permit, and the CDFW 1600 Streambed Alteration Agreement, the Authority, or its designee, will document compliance and submit it to the regulatory agencies.⁶</p>										
BIO-MM#64	Compensate for Impacts on Protected Trees	<p>The Authority will compensate for impacts, including removal or trimming of naturally occurring native protected trees and landscape or ornamental protected trees, in accordance with the local regulatory body (city or county government). The local regulations and laws allow for a number of potential mitigation opportunities. The Authority will provide mitigation commensurate with the regulations and laws in that jurisdiction such that the resulting impact on protected trees is less than significant and may include, but is not limited to, the following, depending on the local jurisdiction:</p>	✓	✓	Pre-construction/ Construction/ Post-construction	Compliance Report	Prior to operation	Authority	Authority	Transplanting/ Replacement/ Compensation per Local Regulations	Local Regulation Requirement	Impact BIO#3: Construction of the Preferred Alternative would disturb protected trees
			✓	✓								Impact BIO#7: Project impacts for the Preferred Alternative would permanently disturb portions of recovery plans.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanent affect protected trees.

⁶ This measure is applicable to the F-B LGA, except for the portions of the measure specific to vernal pool branchiopods and California tiger salamander as no suitable habitat for these species is present in the habitat study area; therefore, the F-B LGA will not affect these species. In addition, the portion of the measure specific to conservation areas is not applicable to the F-B LGA, as the project footprint will not affect any conservation areas.

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		<ul style="list-style-type: none"> ▪ Transplant directly affected protected trees that are judged by an arborist to be in good condition to a suitable site outside the zone of impact. ▪ Replace directly affected protected trees at an onsite or offsite location, based on the number of protected trees removed, at a ratio not to exceed 3:1 for native trees or 1:1 for landscape or ornamental trees. ▪ Contribute to a tree-planting fund. The Authority will submit a memorandum to the local regulatory body to document compliance with this measure. 										
BIO-MM#65	Offsite Habitat Restoration, Enhancement, and Preservation	Before site preparation at a mitigation site, the Authority will consider the offsite habitat restoration, enhancement, and preservation program and identify short-term temporary and/or long-term permanent effects on the natural landscape. A determination will be made on any effects from the physical alteration of the site to onsite biological resources, including plant communities, land cover types, and the distribution of special-status plant and wildlife. Appropriate seasonal restrictions (e.g., breeding season) on activities that result in physical alteration of the site may be applicable if suitable habitats for special-status species and sensitive habitats exist onsite. Activities resulting in the physical alteration of the site include	✓	✓	Pre-construction/Construction/Post-construction	Compliance Report	Prior to operation or as established by regulatory compliance permits	Authority	Authority	Prior to operation or as established By regulatory compliance permits	Authority to provide compensatory mitigation for impacts on biological resources impacted by the Contractor Offsite habitat restoration, enhancement, and preservation program will be designed, implementation and monitored consistent with the terms and conditions of regulatory permit requirements they apply to their jurisdiction and resources onsite	<p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status invertebrate species.</p> <p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status reptiles and amphibians</p> <p>Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-</p>

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		<p>grading/modifications to onsite topography, stockpiling, storage of equipment, installation of temporary irrigation, removal of invasive species, and alterations to drainage features.</p> <p>In general, the long-term improvements to habitat functions and values will offset temporary effects during restoration, enhancement, and preservation activities.</p> <p>The offsite habitat restoration, enhancement, and preservation program will be designed, implemented, and monitored in ways that are consistent with the terms and conditions of the USACE Section 404 Permit, CDFW 1600 Streambed Alteration Agreement, and CESA and federal ESA as they apply to their jurisdiction and resources onsite. Potential effects on site-specific hydrology and the downstream resources will be evaluated as a result of implementation of the restoration-related activity.</p> <p>Site-specific BMPs and a Storm Water Pollution Prevention Plan (SWPPP) will be implemented as appropriate. The Authority will report on compliance with the permitting requirements. The Authority, or its designee, will be responsible for the monitoring and tracking of the program, will prepare a memorandum of compliance, and will submit it to the appropriate regulatory agency.</p>										status bird species	
			✓	✓									Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species.
			✓	✓									Impact BIO#3: Construction of the Preferred Alternative would disturb special-status plant communities, and riparian areas
			✓	✓									Impact BIO#3: Construction of the Preferred Alternative would have direct and indirect impacts on jurisdictional waters
			✓	✓									Impact BIO#3: Construction of the Preferred Alternative would disturb protected trees
			✓	✓									Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status invertebrate species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact	

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												suitable habitat that has the potential to support special-status reptile and amphibian species.
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status bird species (including raptors).
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently impact special-status plants communities, and riparian areas.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect jurisdictional waters.
			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would disturb portions of recovery plans.

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			✓	✓								Impact BIO#7: Project impacts from the Preferred Alternative would permanently affect protected trees.
BIO-MM#66	Implement Avoidance and Minimization Measures for BVLOS	<p>The following Avoidance and Minimization Measures will be implemented for BVLOS:</p> <p>1. The FRA and Authority will conduct habitat suitability determinations in potentially suitable BVLOS habitat not subject to previous field assessments to determine if the area falls into the suitable more xeric or suitable more mesic habitat categories. A report documenting the result of the habitat assessment and concluding if the area is either not suitable, marginal habitat or suitable mesic or xeric habitat will be prepared and submitted to the USFWS for review and concurrence.</p> <p>2. In all suitable habitat areas, all above-ground herbaceous vegetation within the construction footprint will be cleared using hand tools (which can include weed whackers or mowers) under the supervision of a USFWS-approved BVLOS biological monitor. All leaf litter will be removed using rakes, or similar hand tools. All woody vegetation will be cut as</p>	✓	✓	Pre-construction, Construction, Post-construction	Conduct Habitat Suitability Determinations, Vegetation Removal and Small Mammal Trapping; Compliance Reporting	Weekly or as established by regulatory compliance permits	Contractor	Contractor	Weekly or as established by regulatory compliance permits	Condition of Design Build Contract Condition of regulatory permits	Impact BIO#1 Construction Effects on Special-Status Plant Species
			✓	✓								Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special-status mammal species
				✓								Impact BIO#5 Project Effects on Special-Status Plant Species
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.

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		<p>closely to the ground as possible using hand tools (which can include chainsaws). Vegetation will be removed immediately and stored away from suitable BVLOS habitat. Such vegetation hand-removal efforts will be implemented in those areas that require vegetation removal in order to clearly detect Buena Vista Lake ornate shrew, and will continue at each habitat area until it is reasonably certain that Buena Vista Lake ornate shrew can be detected within the cleared areas.</p> <p>3. After vegetation has been cleared from BVLOS suitable habitat areas, non-disturbance exclusion fencing will be installed. In those areas where installation of fencing may not be feasible, the USFWS will be contacted and will provide direction on a case-by-case basis. The fencing will be installed under the supervision of the USFWS-approved biologist along the project footprint within BVLOS suitable habitat areas. Fencing will be placed between areas of active construction and adjacent or nearby suitable habitat to preclude BVLOS from running across the construction site and into harm's way. The</p>										

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		<p>configuration of the fencing will likely vary between areas, and placement will be at the direction of the USFWS-approved biologist with input from the USFWS, as required. Fencing may consist of a combination of both Environmentally Sensitive Area fencing and Wildlife Exclusion fencing with one way exit/escape points.</p> <p>4. If a shrew is subsequently found within the fenced work area, work will cease immediately and a section of fence removed so that the shrew may leave the fenced area on their own volition. The USFWS-approved biologist will monitor the shrew to ensure that any shrew has moved and remains outside the fence.</p> <p>5. Prior to the start of construction activities in areas of marginal and suitable habitat (more mesic and more xeric) for BVLOS, the FRA and Authority will prepare a BVLOS monitoring and relocation plan. The plan will identify the handling and relocation methodology for any BVLOS encountered during construction activities. Handling and relocation will be conducted consistent with the USFWS's</p>										

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		Survey Protocol for Determining Presence of the Buena Vista Lake Ornate Shrew (USFWS 2012). The plan will identify the process for the relocating of any captured BVLOS and will be approved by the USFWS prior to construction.										
BIO-MM#67	Compensate for Impacts on BVLOS	<p>The compensatory mitigation ratios for BVLOS are based on the type of habitat being affected (more mesic or more xeric) by the project. Impacts to more mesic suitable habitat will be compensated at a 3:1 ratio through acquisition and preservation into perpetuity of occupied more mesic suitable habitat, or creation of occupiable more mesic suitable habitat. All proposed suitable BVLOS habitat compensation properties will be reviewed and approved by the USFWS.</p> <p>Impacts to more xeric suitable habitat will be compensated at a 1:1 ratio by providing one acre of more xeric suitable habitat directly associated with (within 200 feet of) more mesic suitable habitat within a preserved or created mitigation parcel; or at a 0.33:1 ratio by preserving or creating one acre of more mesic suitable habitat for every three acres of more xeric suitable habitat disturbed. Final habitat compensation may consist of a combination of these, as</p>	✓	✓	Pre to Construction, Construction, Post-construction	Compliance Report	Prior to Operation or as established by regulatory compliance permits	Authority	Authority	Prior to Operation or as established by regulatory compliance permits	Authority to provide compensatory mitigation for impacts on biological resources impacted by the Contractor Offsite habitat restoration, enhancement, and preservation program will be designed, implementation and monitored consistent with the terms and conditions of regulatory permit requirements they apply to their jurisdiction and resources onsite	Impact BIO#2: Construction of the Preferred Alternative would disturb suitable habitat that has potential to support special status mammal species
			✓	✓								Impact BIO#6: Project impacts from the Preferred Alternative would permanently impact suitable habitat that has the potential to support special-status mammal species.

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		approved by the USFWS. The overall goal is to provide contiguous blocks of more mesic habitat accompanied by more xeric habitat which supports the more mesic areas, or to provide suitable habitat of either type to serve as dispersal corridors among larger occupied or occupiable areas.										
3.8 Hydrology and Water Resources												
HWR-MM#1	Floodplain Protection: Construction	<p>The following measures shall be implemented during the construction period to mitigate potential impacts to floodplains, including the following:</p> <ul style="list-style-type: none"> Implement standard floodplain measures, including best management practices (BMPs), during construction. BMPs may include preservation of existing vegetation to the maximum extent practicable, limiting the number of equipment trips across floodplain crossing, selecting equipment that exerts the least amount of ground surface pressure, use of vegetated buffers on slopes, and application of hydraulic mulch on disturbed streambanks. Designated construction employees and local districts shall monitor weather for heavy storms and potential flood flows. If a heavy storm or flood event is identified, construction equipment shall be relocated outside of the floodplain. 		✓	Construction	Reporting and Monitoring	Weekly	Contractor Local Districts	Contractor	Construction/ Weekly Reporting	Reporting Contract Requirements /Specifications	Impact HWR#4: Temporary Impacts to Floodplains

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HWR-MM#2	Floodplain Protection: Operation	The following measures shall be implemented as part of the project to reduce impacts to floodplains: <ul style="list-style-type: none"> A Conditional Letter of Map Revision to Federal Emergency Management Agency shall be required for all construction activities inside the Kern River. Potential impacts and mitigation measures for the Kern River shall require coordination with the Central Valley Flood Protection Board, the United States Army Corps of Engineers, the City of Bakersfield, and County of Kern. 		✓	Pre-construction, Construction	Reporting and Monitoring	Weekly	Contractor Hazardous Materials Monitor	Contractor	Construction/Weekly Reporting	Reporting Contract Requirements/ Specifications	Impact HWR#8: Permanent Impacts on Floodplains
3.9 Geology, Soils, Seismicity, and Paleontological Resources												
With implementation of standard engineering design measures and BMPs, impacts for elevated structures, retained cuts, retained fills, and at-grade segments of each alternative would be less than significant. No additional mitigation measures are applicable to address geology, soils, and seismicity impacts resulting specifically from the F-B LGA. With the implementation of Mitigation Measures CUL-MM #16 through CUL-MM #18, adverse effects associated with disturbance of paleontological resources during project construction would be mitigated by ensuring appropriate monitoring and cessation of ground-disturbing activities, as needed. These mitigation measures identify responsible parties for each project phase (pre-construction, and construction) to ensure that the requirements are appropriately implemented.												
Paleontological Resources												
CUL-MM #16	Engage a Paleontological Resources Specialist to Direct Monitoring during Construction	A paleontological resources specialist (PRS) will be designated for the project who will be responsible for determining where and when paleontological resources monitoring should be conducted. Paleontological resources monitors (PRM) will be selected by the PRS based on their qualifications, and the scope and nature of their monitoring will be determined and directed based on the Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The PRS will be responsible for developing Worker Environmental Awareness Program training.	✓	✓	Pre-construction/Construction	Reporting	Daily Logs (during active monitoring)	Contractor	Contractor	Identify PRS at least 120 days prior to construction The PRS will document any discoveries, as needed, evaluate the potential resource, and assess the significance of the find.	Paleontological Resource Monitoring and Mitigation Plan (PRMMP)	Impact CUL#3: Potential Adverse Effects on Paleontological Resources due to Construction Activities Like archaeological resources, construction activities that may impact paleontological resources include ground-disturbing activities. Surficial activities such as staging and clearing usually do not affect paleontological resources because

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		All management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training before beginning work on the project and will be provided with the necessary resources for responding in case paleontological resources are found during construction. The PRS will document any discoveries, as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5.										the associated disturbance does not extend deep enough to affect paleontologically sensitive deposits.
CUL-MM #17	Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan	Paleontological monitoring and mitigation measures are restricted to those construction-related activities that will result in the disturbance of paleontologically sensitive sediments. The PRMMP will include a description of when and where construction monitoring will be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; and procedures for reporting the results of the monitoring and mitigation program. The monitoring program will be designed to accommodate site-specific construction of the selected option. The PRMMP will be consistent with Society of Vertebrate Paleontology (SVP	✓	✓	Construction	Reporting	Monthly	Contractor	Contractor	Construction/Monthly Reporting	PRMMP Worker Environmental Awareness Program training	Impact CUL#3: Potential Adverse Effects on Paleontological Resources due to Construction Activities Like archaeological resources, construction activities that may impact paleontological resources include ground-disturbing activities. Surficial activities such as staging and clearing usually do not affect paleontological resources because the associated disturbance does not extend deep enough to affect paleontologically sensitive deposits.

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		1995) guidelines for the mitigation of construction impacts on paleontological resources. The PRMMP will also be consistent with the SVP (1996) conditions for receivership of paleontological collections and any specific requirements of the designated repository for any fossils collected.										
CUL-MM #18	Halt Construction When Paleontological Resources Are Found	If fossil or fossil-bearing deposits are discovered during construction, regardless of the individual making a paleontological discovery, construction activity in the immediate vicinity of the discovery will cease. This requirement will be spelled out in both the PRMMP and the WEAP. Construction activity may continue elsewhere provided that it continues to be monitored as appropriate. If the discovery is made by someone other than a PRM or the PRS, a PRM or the PRS will immediately be notified.	✓	✓	Construction	Reporting	Daily logs during active monitoring	Contractor	Contractor	Construction/Weekly reporting (if resource is identified during construction)	PRMMP, WEAP	Impact CUL#3: Potential Adverse Effects on Paleontological Resources due to Construction Activities Like archaeological resources, construction activities that may impact paleontological resources include ground-disturbing activities. Surficial activities such as staging and clearing usually do not affect paleontological resources because the associated disturbance does not extend deep enough to affect paleontologically sensitive deposits.
3.10 Hazardous Materials and Wastes												
HMW-MM#1	Limit Use of Extremely Hazardous Materials near Schools during Construction	The Contractor shall not handle or store an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a	✓		Construction	Reporting and Monitoring	Weekly	Contractor Hazardous Materials Monitor	Contractor	Construction/ Weekly Reporting	Reporting Contract Requirements/ Specifications	Impact HMW#4: Temporary Hazardous Material and Waste Activities in the Proximity of Schools Twenty-nine schools are within 0.25 mile of the

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		quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school. Prior to construction activities, signage will be installed to delimit all work areas within 0.25 mile of a school, informing the Contractor not to bring extremely hazardous substances into the area. The Contractor would be required to monitor all use of extremely hazardous substances. The above construction mitigation measure for hazardous materials and wastes is consistent with California Public Resources Code Section 21151.4, and would be effective in reducing the impact to a less-than-significant level.		✓								<p>construction footprint of the Preferred Alternative.</p> <p>Impact HMW#4: Temporary Hazardous Material and Waste Activities in the Proximity of Schools Sixteen schools are within 0.25 mile of the construction footprint of the Preferred Alternative.</p>
3.11 Safety and Security												
S&S-MM#1	Monitor Response of Local Fire, Rescue, and Emergency Service Providers to Incidents at Stations and Provide a Fair Share Cost of Service	Monitor response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of cost of service. Upon approval of the Fresno to Bakersfield Section, the Authority will monitor service levels in the vicinity of the Fresno and Kings/Tulare stations to determine baseline service demands. "Service levels" consist of the monthly volume of calls for fire and police protection, as well as city- or fire protection district-funded EMT/ambulance calls that occur in the station site service areas. Prior to operation of the	✓	✓	Construction/Post-construction/Operation	Monitor/Fair Share Agreement	Annually	Authority	Authority	Monitoring of service levels during construction in the vicinity of the Fresno, Kings/Tulare, and Bakersfield stations to determine baseline service demands. Prior to the operation of the stations for HSR service.	Authority to fund through fair share of services agreement.	Impact S&S#10: Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities.

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		<p>stations for HSR service, the Authority will enter into an agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services above the average baseline service demand level for the station (as established during the monitoring period). The fair share will be based on projected passenger use for the first year of operations, with a growth factor for the first 5 years of operation. This cost-sharing agreement will include provisions for ongoing monitoring and future negotiated amendments as the stations are expanded or passenger use increases. Such amendments will be made on a regular basis for the first 5 years of station operation, as will be provided in the agreement. To make sure that services are made available, impact fees will not constitute the sole funding mechanism, although impact fees may be used to fund capital improvements or fixtures (i.e., police substation, additional fire vehicle, on-site defibrillators, etc.) necessary to service delivery. After the first 5 years of operation, the Authority will enter into a new or revised agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services. The fair share will take into account the volume of ridership, past record and trends in service demand at</p>										

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		the stations, new local revenues derived from station area development, and any services that the Authority may be providing at the station. ⁷										
S&S-MM#2	Halliburton-Specific Safety and Security	<p>The following site-specific mitigation shall be implemented based on the Authority's Policy for Elevated Structures to allow continued use of the Halliburton Facility with development of the F-B LGA over a portion of the facility's parcel:</p> <ul style="list-style-type: none"> ▪ The Authority shall be required to purchase the property underneath the F-B LGA viaduct, plus a 10-foot maintenance access buffer on each side of the viaduct. An easement will then be negotiated with Halliburton for its continued use of the parcel, subject to conditions set forth by the Authority. The easement negotiated with Halliburton shall include the following stipulations: <ul style="list-style-type: none"> – Relocation of all privately controlled structures such as the old office building, acid dock, and truck wash from underneath the F-B LGA viaduct. – Relocation of all hazardous materials from underneath the F-B LGA viaduct. This includes the diesel fuel storage tanks, the nitrogen tank, the 		✓	Construction/Post-construction/Operation	Property acquisition and easement negotiation	Weekly	Authority Contractor	Authority Contractor	Property purchase and easement negotiation	Easement negotiation with outlined stipulations	Impact S&S#7: Risk of Fire and Explosions at Specific Parcels

⁷ The F-B LGA does not include an HMF; therefore, this portion of S&S-MM #1 would not apply to the F-B LGA.

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		radioactive material bunker, the acid dock, and all of the storage of hazmat totes. – The existing height of the barrier for the explosives bunker shall be increased to provide line-of-sight protection for the HSR trainway on the F-B LGA viaduct, per Bureau of Alcohol, Tobacco, Firearms, and Explosives regulatory requirements. – Maintenance of the space underneath the F-B LGA viaduct to remove all hazardous materials and to minimize combustible materials such as wood, debris, and vegetation. – Allow audits of security protocols and processes to ensure security measures continue the level of protection warranted. – Allow HSR security personnel access, with notice, to the grounds around the F-B LGA viaduct to ensure security measures are being followed. – Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would										

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		<ul style="list-style-type: none"> not allow hidden materials. – Notice must be provided to the Authority by Halliburton in the event of any missing explosives or shortage in explosives inventory. 										
S&S-MM#3	Rain-for-Rent Safety and Security	<p>The following site-specific mitigation shall be implemented based on the Authority's Policy for Elevated Structures to allow continued use of the Rain-for-Rent Facility with development of the F-B LGA over a portion of the facility's parcel:</p> <ul style="list-style-type: none"> ▪ The Authority shall be required to purchase the property underneath the F-B LGA viaduct, plus a 10-foot maintenance access buffer on each side of the viaduct. An easement will then be negotiated with Rain-for-Rent for its continued use of the parcel, subject to conditions set forth by the Authority. The easement negotiated with Rain-for-Rent shall include the following stipulations: <ul style="list-style-type: none"> – Restriction against storage or temporary location of regulated quantities of hazardous materials from underneath the F-B LGA viaduct. – Maintenance of the space underneath the viaduct to eliminate all flammable and 		✓	Construction/Post-construction/Operation	Property acquisition and easement negotiation	Weekly	Authority Contractor	Authority Contractor	Property purchase and easement negotiation	Easement negotiation with outlined stipulations	Impact S&S#7: Risk of Fire and Explosions at Specific Parcels

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		hazardous materials. – Allow the Authority to audit Rain-for-Rent security protocols and processes to ensure security measures continue the level of protection warranted. – Allow HSR security personnel access, with notice, to the area around the F-B LGA viaduct to ensure security measures are being followed. – Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would not allow hidden materials. – Allow only passenger cars and small trucks and vans to be parked in the employee parking under the F-B LGA viaduct on the Rain-for-Rent parcel.										
S&S-MM#4	Golden Empire Gleaners Safety and Security	The following site-specific mitigation shall be implemented in all subsequent property transactions for the Golden Empire Gleaners Facility: <ul style="list-style-type: none"> ▪ Upgrade of the fire alarm and suppression system to current fire code regulations, per Office of State Fire Marshall requirements and approval. ▪ Prohibition of regulated amounts of hazardous 		✓	Construction/Post-construction/Operation	Property acquisition and easement negotiation	Weekly	Authority Contractor	Authority Contractor	Property purchase and easement negotiation	Easement negotiation with outlined stipulations	Impact S&S#7: Risk of Fire and Explosions at Specific Parcels

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		<p>materials in the structure.</p> <ul style="list-style-type: none"> ▪ Annual inspection by the Office of the State Fire Marshal. ▪ Public ownership and control of the entire facility. This could be Authority ownership, or City of Bakersfield ownership with restrictions on use and access of the facility to enforce the above mitigations. Note: State owned property requires additional conditions by the Office of the State Fire Marshal that must be incorporated. ▪ Restrict access to the facility by uncontrolled or uninspected trucks or step vans. ▪ Allow audits of security protocols and processes to ensure security measures continue the level of protection warranted. ▪ Allows HSR security personnel access, with notice, to ensure security measures are being followed. ▪ Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would not allow hidden materials. ▪ Only passenger cars and small trucks and vans can be parked in the employee parking under the structure. ▪ Any change of use would require reassessment and 										

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		approval.										
3.12 Socioeconomics and Communities												
SO-MM#1	Implement Measures to Reduce Impacts Associated With the Division of Existing Communities in the Unincorporated Areas East Of Hanford, Northeast of Corcoran, and South of Shafter	The Authority will minimize impacts associated with the Preferred Alternative in the rural residential areas around Ponderosa Road/Edna Way east of Hanford, the Newark Avenue vicinity northeast of Corcoran, and Crome by conducting special outreach to affected homeowners and residents to fully understand their special relocation needs. The Authority will make every effort to locate suitable replacement properties that are comparable to those occupied by these residents, including constructing suitable replacement facilities if necessary. In cases where residents wish to remain in the immediate vicinity, the Authority will take measures to purchase vacant land or buildings in the area, and consult with local authorities over matters such as zoning, permits, and moving of homes and replacement of services and utilities, as appropriate. Before land acquisition, the Authority will conduct community workshops to obtain input from those homeowners whose property would not be acquired, but whose community would be substantially altered by construction of HSR facilities, including the loss of many neighbors, to identify measures that could be taken to mitigate impacts on those who remain (including placement of sound walls and	✓		Pre-construction/Construction/Post-construction	Reporting	Monthly	Authority	Authority	Monthly Reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts	Impact SO#6: Division of existing community Ponderosa Road/Edna Way east of Hanford, the Newark Avenue vicinity northeast of Corcoran, and Crome. Impacts associated with the Preferred Alternative would relocate and displace residents of small, rural residential communities.
			✓									Impact SO#7: Effects to the regional agricultural community and displacement of homes in the unincorporated areas of the region of the four affected counties.

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		landscaping, and potential uses for remnant parcels that could benefit the community in the long term).										
SO-MM#1	Implement measures to reduce impacts associated with the division of residential neighborhoods	<p>The Authority will minimize impacts associated with the F-B LGA in the rural residential areas around the community of Oildale as well as in urban residential areas in Shafter and Bakersfield by conducting special outreach to affected homeowners and residents to fully understand their special relocation needs. The Authority will make every effort to locate suitable replacement properties that are comparable to those currently occupied by these residents, including constructing suitable replacement facilities if necessary.</p> <p>In cases where residents wish to remain in the immediate vicinity, the Authority will take measures to purchase vacant land or buildings in the area, and consult with local authorities over matters such as zoning, permits, and moving of homes and replacement of services and utilities, as appropriate.</p> <p>Before land acquisition, the Authority will conduct community workshops to obtain input from those homeowners whose property would not be acquired, but whose community would be substantially altered by construction of HSR facilities, including the loss of many neighbors, to identify measures that could be taken</p>		✓	Pre-construction/Construction/Post-construction	Reporting	Monthly	Authority	Authority	Monthly Reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts	Impact SO#6: Disruption to Community Cohesion or Division of Existing Communities from Project Operation.

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		to mitigate impacts on those who remain (including placement of sound walls and landscaping, and potential uses for remnant parcels that could benefit the community in the long term).										
SO-MM#2	Implement measures to reduce impacts associated with the division of existing communities	<p>The Authority will minimize impacts associated with Preferred Alternative in the existing communities through a program of additional outreach to homeowners, residents, business owners, and community organizations in affected neighborhoods.</p> <p>As a part of this program, before land acquisition, the Authority will consult with officials and representatives of community facilities affected by significant noise impacts (e.g., churches and schools) to identify suitable noise abatement measures or to help affected businesses and organizations find more-suitable locations in the community. Similarly, the Authority locate suitable replacement housing for displaced residents, as discussed in SOMM#1.</p> <p>Before the completion of final design, the Authority will also conduct community workshops about the future use of the area beneath the rail guideway. These meetings will provide residents the opportunity to identify design and use options that could strengthen community cohesion and be compatible with the character of the impacted community. A minimum of three facilitated</p>	✓		Pre-construction/Construction/Post-construction	Reporting	Monthly	Authority	Authority	Monthly Reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts	Impact SO#6: Division of existing community Ponderosa Road/Edna Way east of Hanford, the Newark Avenue vicinity northeast of Corcoran, and Crome. Impacts associated with the Preferred Alternative would relocate and displace residents of small, rural residential communities.
			✓									Impact SO#7: Effects to the regional agricultural community and displacement of homes in the unincorporated areas of the region of the four affected counties.

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		<p>workshops will be held in each of community where elevated rail guideway would be constructed. To maximize attendance and generate awareness of the workshops, the Authority will work with either community organizations, or community leaders within the neighborhoods. A location and time will be selected based on the needs of the community to increase attendance. Information will be presented at the workshops that give the community options for the future use of the area beneath the rail guideway, as well as an opportunity for individuals to provide feedback. For example, if safety considerations prohibit such uses as bike paths or community gardens, alternatives, such as sculpture gardens or managed landscaping, could be considered. The comments and feedback will be considered in planning for the future use of the sites.</p> <p>Upon gathering feedback from the community, the Authority will report the finds either through a fourth public workshop, or written report that would be made available to the public.</p> <p>The Authority will be responsible for implementing the results of the community workshops through project design and through the long-term management of the area beneath the elevated rail guideway. This will involve</p>										

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		documenting the desired design concepts, incorporating them into the final design, and facilitating ongoing maintenance. The Authority will identify potential uses that may be developed in the project right-of-way. These uses will be compatible with the character of the adjacent community and sensitive to project needs (as outlined in the Final EIR/EIS, Section 3.11, Safety and Security). The costs associated with the development of these associated uses and how costs will be paid will be determined during consultations with the affected city, county, or parks district. Furthermore, the parties or entities (i.e., the Authority, local government, park or recreation district, or nonprofit organization).										
SO-MM#3	Implement measures to reduce impacts associated with the relocation of important facilities	The Authority will minimize impacts resulting from the disruption to key community facilities: Fresno Rescue Mission, the Wasco Amtrak station, community churches, and an important livestock rendering facility (Baker Commodities) in the Hanford area. The Authority will consult with the appropriate respective parties before land acquisition to assess potential opportunities to reconfigure land use and buildings and/or relocate affected facilities, as necessary, to minimize the disruption of facility activities and services, and also to ensure relocation that allows	✓		Pre-construction/Construction/Post-construction	Reporting	Monthly	Authority	Authority	Monthly Reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts	Impact SO#6: Displacement of the Mercado Latino Tianguis. Displacement of the Fresno Rescue Mission, Bakersfield Homeless Shelter and associated facilities and programs. Displacement of the Mercy Medical Plaza building associated with the Mercy Hospital medical complex. Displacement of religious facilities. Displacement of

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		the community currently served to continue to access these services. Because many of these community facilities are located in Hispanic communities, the Authority will continue to implement a comprehensive Spanish-language outreach program for these communities as land acquisition begins. This program will facilitate the identification of approaches that would maintain continuity of operation and allow space and access for the types of services currently provided and planned for these facilities. Also, to avoid disruption to these community amenities, the Authority will ensure that all reconfiguring of land uses or buildings, or relocating of community facilities is completed before the demolition of any existing structures. In regard to the impacted Amtrak station, relocation of the facilities would be completed before demolition of the existing structures and no disruption to Amtrak service would occur. Because the unique services provided by the rendering facility in Kings County are critical to agricultural operations in the region, relocation of this facility will occur before the existing facility is closed or steps will be taken to ensure that sufficient capacity is available at other facilities so there is no interruption to the services provided.										government facilities—Bakersfield public works corporation yard and a Kern Mental Health office—as well as parking associated with the Bakersfield Convention Center.
SO-MM#3	Implement	The Authority will minimize		✓	Pre-construction/Construction/	Reporting	Monthly	Authority	Authority	Monthly Reporting	The Authority will meet	Impact SO#1:

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	measures to reduce impacts associated with the relocation of important facilities	<p>impacts resulting from the disruption to key community facilities including the Mercado Latino Tianguis, Golden Empire Transit District, Valley Oaks Charter School, Bakersfield Department of Motor Vehicles, Golden Empire Gleaners (a food bank), Bakersfield Homeless Center, the Golden Living Center (a nursing facility), Kern County Veterans Service Department, Iglesia de Dios Pentecostes La Hermosa (a religious facility).</p> <p>The Authority will consult with the appropriate respective parties before land acquisition to assess potential opportunities to reconfigure land use and buildings and/or relocate affected facilities, as necessary, to minimize the disruption of facility activities and services, and also to ensure relocation that allows the community currently served to continue to access these services.</p> <p>Because many of these community facilities are located in Hispanic communities, the Authority will continue to implement a comprehensive Spanish-language outreach program for these communities as land acquisition begins. This program will facilitate the identification of approaches that would maintain continuity of operation and allow space and access for the types of services currently provided and planned for these facilities. Also, to avoid</p>		✓	Post-construction						with affected residents and property owners and design appropriate measures to minimize impacts	<p>Disruption to Community Cohesion or Division of Existing Communities from Project Construction</p> <p>Impact SO#18: Potential for Physical Deterioration</p>

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		disruption to these community amenities, the Authority will ensure that all reconfiguring of land uses or buildings, or relocating of community facilities is completed before the demolition of any existing structures.										
SO-MM#4	Provide access modifications to affected farmlands.	In cases where partial-property acquisitions result in division of agricultural parcels, the Authority will evaluate with property owner input the effectiveness of providing overcrossings or undercrossings of the HSR track to allow continued use of agricultural lands and facilities. This would include the design of overcrossings or undercrossings to allow farm equipment passage. (Refer to Section 3.14, Agricultural Lands, of the Final EIR/EIS for additional information.) This mitigation measure will be effective because it will maintain access to farmlands for farmers whose property is bisected.	✓	✓	Pre-construction/Construction	Reporting/Monitoring	Monthly	Authority	Authority	Monthly reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts The Authority will hold workshops and create reports based on workshop and design findings	Impact SO#7: Effects to the regional agricultural community and displacement of homes in the unincorporated areas of the region of the four affected counties.
SO-MM#5	Develop measures to minimize the potential for physical deterioration.	The Authority will work with the communities on the design of project features consistent with Technical Memorandum 200.6, Aesthetic Guidelines for Non-Station Structures (Authority 2011a). The guidelines for station and non-station structures allow for contextual design responses to site-specific or unique conditions, or "context sensitive solutions". Context sensitive solutions mean structural aesthetics must respond to local settings with	✓		Pre-construction/Construction	Reporting/Monitoring	Monthly	Authority	Authority	Monthly reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts The Authority will hold workshops and create reports based on workshop and design findings	Impact SO#6: Division of existing community Ponderosa Road/Edna Way east of Hanford, the Newark Avenue vicinity northeast of Corcoran, and Crome. Impacts associated with the Preferred Alternative would relocate and displace residents of small, rural residential

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		concern for the human scale, building scale, and the vantage points from which the structures will be viewed. Included in the Authority's design principles is the requirement that the structures enhance local environments and community context. Landscaping will be used to visually integrate project structures into the local context with plantings that recreate the natural setting into which they are placed. The aesthetic design of project structures, in combination with landscape and urban design that serve the local community can create a positive contribution to the surrounding visual context and minimize the potential for physical deterioration.	✓									communities.
				✓								Impact SO#7: Effects to the regional agricultural community and displacement of homes in the unincorporated areas of the region of the four.
SO-MM#6	Continue outreach to disproportionately and negatively impacted environmental justice populations.	The Authority will continue to conduct substantial EJ outreach activities in adversely affected neighborhoods to obtain resident feedback on potential impacts and suggestions for mitigation measures. Input from these communities will be used to refine the alternatives during ongoing design efforts. In addition, to offset any disproportionate effects, the Authority will develop special recruitment, training, and job set-aside programs so that minority and low-income populations are able to benefit from the jobs created by the project. This type of outreach is common for large infrastructure projects	✓	✓	Pre-construction/Construction/Operations	Coordination/Reporting	Monthly	Authority	Authority	Monthly reporting	The Authority will meet with affected residents and property owners and design appropriate measures to minimize impacts. The Authority will hold workshops and create reports based on workshop and design findings	Applies to all environmental justice impacts.

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		with long construction periods and has been found to be effective.										
3.13 Station Planning, Land Use, and Development												
Mitigation measures for station planning, land use and development were incorporated in other sections. See Air Quality and Global Climate Change, Aesthetic and Visual Resources, Noise and Vibration, and Agricultural Land. No additional mitigation measures are required to address land use impacts resulting specifically from the F-B LGA. Overall, land use-related impacts would be less than significant under CEQA, without implementation of mitigation measures specific to land use.												
3.14 Agricultural Land												
AG-MM #1:	Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland	The Authority will enter into an agreement with the DOC California Farmland Conservancy Program to preserve farmland. The Authority will fund the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio of not less than 1:1 for lands that are permanently converted to non-agricultural use by the project. In addition, the Authority will provide an additional increment of Important Farmland mitigation acreage, above the 1:1 ratio minimum, at a level consistent with the terms of a settlement agreement the Authority	✓		Pre-construction	Reporting	Monthly	Authority & California Farmland Conservancy	Authority	Prior to construction/Monthly reporting	The Authority will enter into an agreement with the DOC California Farmland Conservancy Program to implement the preservation of farmland. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements.	Impact AG#4: Permanent Conversion of Agricultural Land to Nonagricultural Use. The Preferred Alternative would affect 3,474 acres of Important Farmland.
				✓								Impact AG#4: Permanent Conversion of Agricultural Land to Nonagricultural Use. The Preferred Alternative would affect 372 acres of Important Farmland.
				✓								Impact AG#5: Effects on Agricultural Land from Parcel Severance
			✓									Impact LU#2: The Preferred Alternative would cause a substantial change in intensity of land use incompatible with adjacent land uses.
			✓									Impact LU#3: The Kings/Tulare Regional Station-

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		reached with agricultural interests in County of Madera, et al. v. California High-Speed Rail Authority. This approach will provide a consistent approach to calculating the total amount of acres of agricultural conservation easements across the Central Valley. The California Farmland Conservancy Program will work with local, regional, or statewide entities whose purpose includes the acquisition and stewardship of agricultural conservation easements. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements. These will include, but are not limited to, provisions to ensure that the easements will conform to the requirements of Public Resources Code Section 10252 and to prioritize the acquisition of willing seller easements on lands that are adjacent to other protected agricultural lands or that would support the establishment of greenbelts and urban separators.	✓									East is likely to result in some unplanned changes in the use of existing adjacent land, regardless of the amount of parking provided at the station. Impact LU#5: Indirect changes to adjacent lands at the Kings/Tulare Regional Station– East site would substantially change the pattern and intensity of land use in a way that would be incompatible with adjacent land uses.
AG-MM#2:	Conserve Additional Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland) for Indirect Impacts	The Authority will fund the purchase of agricultural conservation easements from willing sellers through the California Farmland Conservancy Program at a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to permanently fenced HSR		✓	Pre-construction/Construction	Purchase of agricultural conservation easements	Monthly	Authority	Authority	Compliance Memorandum	The Authority will fund purchase of land as outlined in mitigation text	Impact AG#4: Permanent Conversion of Agricultural Land to Nonagricultural Use Impact AG#5: Effects on Agricultural Land from Parcel Severance

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	Adjacent to HSR Permanently Fenced Infrastructure	infrastructure, but only to the extent that such acreage is not otherwise subject to mitigation under AG-MM#1. The Authority shall document implementation of this measure through issuance of a compliance memorandum.										
3.15 Parks and Recreation												
According to the MMRP for the Final EIR/EIS, mitigation measures for Parks, Recreation, and Open Space are incorporated into the Aesthetic and Visual Resource Section.												
Park Construction (PC)-MM#1 ⁸	Provide Alternate Pedestrian and Bicycle Access During Temporary Closures of Portions of Park Property During Construction.	Prior to temporary closures of linear park facilities, the Authority will ensure that connections to the unaffected park portions or nearby roadways are maintained. If a proposed linear park closure restricts connectivity, the Authority will provide alternative pedestrian and bicycle access via existing roadways or other public rights-of-way. The Authority will provide detour signage and lighting and will ensure that the alternative routes meet all public safety requirements.	✓		Pre-construction/Construction	Maintenance of access to parks	Monthly	Authority	Authority	Monthly Reporting	Authority will ensure access as outlined in mitigation text.	Impact PK#1: Kern River Parkway. Construction activities for the Preferred Alternative would create closures of some areas of parkway facilities, including bicycle, pedestrian and equestrian facilities.
			✓									Impact PK#1: Mill Creek Linear Park. Construction activities for the Preferred Alternative would create closures of some areas of park facilities and increase noise exposure.
				✓								Impact PK#1: Temporary (construction-related) access restrictions and park activity disruptions for resources located within 1,000 feet of the F-B LGA

⁸ Measures developed to mitigate for impacts to parks and recreation resources in the Fresno to Bakersfield Section EIR/EIS were categorized into "Park Construction" and "Park Project" mitigations, and the shorthand nomenclature reflected this categorization. Thus Parks Construction mitigation measures were referred to as "PC-MMs" and Parks Project mitigation measures were referred to as "PP-MMs". For the Supplemental EIR/EIS, nomenclature used to describe all measures developed to mitigate for impacts to parks and recreation resources were combined to be consistent with all other resource sections. Parks and recreation mitigation measures in the Supplemental EIR/EIS are therefore referred to as "PP-MMs". The mitigation measure PC-MM#1 in the Final EIR/EIS became PP-MM#1 in the Supplemental EIR/EIS.

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												centerline, within 300 feet of the F-B LGA centerline, within 0.5 mile of the Shafter MOIF site, and within 0.5 mile of the Bakersfield F Street passenger station site, as well as for specific resources within these areas, includes Kern River Parkway and Weill Park.
Park Project (PP)-MM#1	Acquisition of Park Property.	The Authority will provide financial compensation for purchase and development of replacement park property of at least equal fair market value, or, where appropriate, enhancement to ensure the park retains equivalent usefulness. Where applicable, this process will be consistent with Section 6(f) requirements and provide park enhancement as appropriate.	✓		Pre-construction/Construction	Reporting/Compensation	Weekly	Contractor	Authority/Contractor	Pre-construction/Construction. Authority to coordinate with local jurisdictions	The Authority and Contractor will work with respective jurisdictions (City of Bakersfield) to develop a staging plan and an alternatives access plan to impacted properties.	Impact PK#2: The BNSF Alternative would require the acquisition of 1.7 acres of land at Colonel Allensworth State Historic Park and 7.3 acres of land from Allensworth Ecological Reserve
PP-MM#2	Avoidance of Colonel Allensworth State Historic Park.	Final design will minimize right-of-way impacts in Colonel Allensworth State Historic Park.	✓		Pre-construction	Avoidance of right-of-way impacts in Colonel Allensworth State Historic Park	At final design	Authority	Authority	At final design	Design features	Impact PK#4: Project Changes to Park Character

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PP-MM#3	Collect Additional Maintenance Funds.	The Authority will consult with affected jurisdictions to identify its share of funding to provide additional maintenance, labor, and repairs for the existing park areas to remedy any potential degradation of existing facilities that may result from increased facility use. Prior to project construction, the Authority will enter into an agreement with the affected jurisdictions (City of Bakersfield and Kern County) that establishes the funding share and describes the relative roles of the Authority and the affected jurisdictions in providing continuous maintenance of existing play areas, or compensation for play areas acquired in order to accommodate the project.		✓	Pre-construction/Construction/Post-construction/Operations	Compensation	Monthly	Authority	Authority	Prior to construction/Construction/Post construction/Operations. Authority to coordinate with local jurisdictions	The Authority will coordinate with the affected jurisdictions to identify appropriate funding amounts	Impact PK#2: Project Acquisition of Parks, Recreation, and Open Space Resources

3.16 Aesthetics and Visual Resources

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AVR-MM#1a	Minimize Visual Disruption from Construction Activities	<p>The project will adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:</p> <ul style="list-style-type: none"> ▪ Minimize Pre-construction clearing to that necessary for construction. ▪ Limit the removal of buildings to those that would obstruct project components. ▪ When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views. ▪ After construction, Regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and types to that which was removed based upon local jurisdictional requirements. If there are no local jurisdictional requirements, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage similar to the 	✓	✓	Pre-construction/ Construction/ Post-construction	Reporting	Weekly	Contractor	Contractor	Construction/ Weekly Reporting	Contract Requirements/ Specifications	Impact AVR#2: Construction Impacts of Existing Visual Quality. Construction activities would cause visual impacts.
			✓									Impact LU#1: Disruption of access to some properties would temporarily inconvenience nearby residents on some lands along 31 miles of the Preferred Alternative.
			✓									Impact PK#1: Construction activities would cause visual impacts to park, recreation, and open space resources.
			✓									Impact PK#1: Construction activities would cause visual impacts to school district facilities.

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		<p>coverage provided by the trees that were removed for construction.</p> <ul style="list-style-type: none"> To the extent feasible, do not locate construction staging sites within the immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days. 										
AVR-MM#1b	Minimize Light Disturbance during Construction	Where construction lighting will be required during nighttime construction, the Contractor will be required to shield such lighting and direct it downward in such a manner that the light source is not visible offsite, and so that the light does not fall outside the boundaries of the project site to avoid light spill offsite.	✓	✓								<p>Impact AVR#3: Nighttime Lighting during construction. Intrusive nighttime lighting could result in adverse impacts in both rural and urban areas.</p> <p>Impact LU#1: Disruption of access to some properties would temporarily inconvenience nearby residents on some lands along 31 miles of the Preferred Alternative.</p> <p>Impact PK#1: Construction activities would cause visual impacts to park, recreation, and open space</p>
			✓									
			✓									

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			✓									resources.
			✓									Impact PK#1: Construction activities would cause visual impacts to school district facilities.
AVR-MM#2a	Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context	<p>During final design of the elevated guideways and the Fresno, Kings/Tulare Regional, and Bakersfield stations, the contractor partnering with the Authority will coordinate with local jurisdictions on the design of these facilities so that they are designed appropriately to fit in with the visual context of the areas near them. This will include the following activities:</p> <ul style="list-style-type: none"> For stations: During the station design process, establish a local consultation process with the Cities of Fresno and Bakersfield, and the cities and communities surrounding the Kings/Tulare Regional Station, as necessary, to identify and integrate local design features into the station design through a collaborative, context-sensitive solutions approach. The process will include activities to solicit community input in their respective station areas. This effort will be coordinated with the station area planning process that will be undertaken by those cities under their station area planning grants. 	✓		Pre-construction/ Design	Reporting	Final design	Contractor and Authority	Contractor and Authority	Final design and Construction/Monthly reporting	Established local consultation process with communities along the alignment	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield

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		<ul style="list-style-type: none"> ▪ For elevated guideways in cities or unincorporated communities: During the elevated guideway design process, establish a process with the city or county with jurisdiction over the land along the elevated guideway to advance the final design through a collaborative, context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements that are to be incorporated into the final guideway designs. The process will include activities to solicit community input in the affected neighborhoods. ▪ Actions taken to help achieve integration with the local design context during the context-sensitive solutions process will include the following: <ul style="list-style-type: none"> ▪ Design HSR stations and associated structures such as elevators, escalators, and walkways to be attractive architectural elements or features that add visual interest to the streetscapes near them. ▪ Design HSR station parking structures and adjacent areas to integrate visually into the areas where they would be located. Where the city has adopted applicable downtown design guidelines, the parking structures and adjacent areas will be 										Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.	
				✓									Impact AVR#4: Lower visual quality in the Rural San Joaquin Valley Landscape Unit: Burbank Street
				✓									Impact AVR#4: Lower visual quality in the North Bakersfield Landscape Unit: Norris Road west of SR 99
				✓									Impact AVR#4: Lower visual quality in the Kern River Landscape Unit: Kern River Parkway Bike Trail
				✓									Impact AVR#4: Lower visual quality in the East Bakersfield Landscape Unit: Sumner Street at Baker Street
				✓									Impact AVR#5: Visual Quality Effects to Schools: Valley Oaks Charter School
				✓									Impact AVR#4: Sound Barriers would lower visual quality or block views. The Preferred Alternative

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		<p>designed to be compatible with the policies and principles of those guidelines.</p> <ul style="list-style-type: none"> ▪ For the elevated guideways and columns, incorporate architectural elements, such as graceful curved or tapered sculptural forms and decorative surfaces, to provide visual interest. Include decorative texture treatments on large-scale concrete surfaces such as parapets and other portions of elevated guideways. Include a variety of texture, shadow lines, and other surface articulation to add visual and thematic interest. Closely coordinate the design of guideway columns and parapets with station and platform architecture to promote unity and coherence where guideways lie adjacent to stations. ▪ Integrate trees and landscaping into the station streetscape and plaza plans where possible to soften and buffer the appearance of guideways, columns, and elevated stations. This will be consistent with the principles of crime prevention through environmental design. ▪ For the stations, structures, and related open spaces: incorporate design features that provide interest and reflect the local design context. These features could include landscaping, 										<p>would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.</p>
			✓									<p>Impact PK#4: Kern River Parkway. HSR operation for the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.</p>
			✓									<p>Impact PK#4: Mill Creek Linear Park. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.</p>
			✓									<p>Impact PK#4: Bakersfield Amtrak Station Playground. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.</p>

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		lighting, and public art. The designs in cities and unincorporated communities will reflect the results of the context-sensitive solutions design process. During the context-sensitive solutions design process, the HSR project's obligations and constraints related to planning, mitigation, engineering, performance, funding, and operational requirements will be taken into consideration.										
AVR-MM#2b	Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs	During development of the final design, the Authority will work with the affected cities and counties to develop a project site and landscape design plan for the areas disturbed by the project. As a result of following these plans, the design features identified in AVR-MM#2a and the park mitigation measure PK-MM#3 will be implemented.	✓		Pre-construction/Design	Reporting	Monthly	Contractor	Contractor and Authority	Construction/monthly reporting	Contract Requirements/ Specifications Authority will meet with local jurisdictions during development of final design	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent

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												project features.
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.
			✓									Impact AVR#4: Sound Barriers would lower visual quality or block views. The Preferred Alternative would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.
				✓								Impact AVR#4: Lower visual quality in the Rural San Joaquin Valley Landscape Unit: Burbank Street
				✓								Impact AVR#4: Lower visual quality in the North Bakersfield Landscape Unit: Norris Road west of SR 99

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				✓								Impact AVR#4: Lower visual quality in the Kern River Landscape Unit: Kern River Parkway Bike Trail
				✓								Impact AVR#4: Lower visual quality in the East Bakersfield Landscape Unit: Sumner Street at Baker Street
				✓								Impact AVR#5: Visual Quality Effects to Schools: Valley Oaks Charter School
			✓									Impact PK#4: Kern River Parkway. HSR operation for the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Mill Creek Linear Park. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Bakersfield Amtrak Station Playground. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its

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												surroundings.
AVR-MM#2c	Screen At-Grade and Elevated Guideways Adjacent to Residential Areas	Consistent with the design features developed under AVR-MM#2a, the contractor will plant trees along the edges of the rights-of-way in locations adjacent to residential areas. This will help reduce the visual contrast between the elevated guideway and the residential area. The species of trees to be installed will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The crowns of trees used should ultimately be tall enough so that upon maturity they will partially, or fully, block or screen views of the elevated guideway from adjacent at-grade areas. Trees should allow ground-level views under the crowns (with pruning if necessary) while not interfering with the 15-foot clearance requirement for the guideway. The trees will be continuously maintained and appropriate irrigation systems will be installed within the tree planting areas.	✓		Construction/Post-construction	Reporting	Monthly	Contractor and Authority	Contractor	Construction/monthly reporting	Contract Requirements/ Specifications and Landscaping and maintenance will be provided by the Contractor for its scope of work until substantial completion of the work at which time the Authority shall assume responsibility for landscaping or	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Wasco, and Shafter Park Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in

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												Bakersfield due to elevated guideways and sound barriers.
			✓									Impact AVR#4: Sound Barriers would lower visual quality or block views. The Preferred Alternative would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.
			✓									Impact PK#4: Kern River Parkway. HSR operation for the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Mill Creek Linear Park. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Bakersfield Amtrak Station Playground. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												the site and its surroundings.
	Screen At-Grade, Raised Embankments, and Elevated Guideways Adjacent to Residential Areas	Consistent with the design features developed under AVR-MM#2a, the contractor will plant trees along the edges of the rights-of-way in locations adjacent to residential areas. This will help reduce the visual contrast between the elevated guideway or raised embankment and the residential area. The species of trees to be installed will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The crowns of trees used should ultimately be tall enough so that upon maturity they will partially, or fully, block or screen views of the elevated guideway or raised embankment from adjacent at-grade areas. Trees should allow ground-level views under the crowns (with pruning if necessary) while not interfering with the 15-foot clearance requirement for the guideway. The trees will be continuously maintained and appropriate irrigation systems will be installed within the tree planting areas.		✓	Construction/Post-construction	Reporting	Monthly	Contractor and Authority	Contractor	Construction/monthly reporting	Contract Requirements/ Specifications and Landscaping and maintenance will be provided by the Contractor for its scope of work until substantial completion of the work at which time the Authority shall assume responsibility for landscaping or	Impact AVR#4: Lower visual quality in the Rural San Joaquin Valley Landscape Unit: Burbank Street
			✓	Impact AVR#4: Lower visual quality in the North Bakersfield Landscape Unit: Norris Road west of SR 99								
AVR-MM#2d	Replant Unused Portions of Lands Acquired for the HSR	After construction is complete, the Authority will plant vegetation within lands acquired for the project (e.g., shifting roadways) that are not used for the HSR or related supporting infrastructure. Plantings will allow adequate	✓		Post-Construction/Operations	Reporting	Monthly	Authority	Authority	Post-Construction/monthly reporting	Authority to implement appropriate landscape and maintenance plan	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		space between the vegetation and the HSR alignment and catenary lines. All street trees and other visually important vegetation removed in these areas during construction will be replaced with similar vegetation that, upon maturity, will be similar in size and character to the removed vegetation. The Authority will ensure that vegetation will be continuously maintained and appropriate irrigation systems will be installed within the planting areas. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted.										character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Corcoran, Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.
			✓									Impact AVR#4: Sound Barriers would lower visual quality or block views. The Preferred Alternative

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.
			✓									Impact PK#4: Kern River Parkway. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Mill Creek Linear Park. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Bakersfield Amtrak Station Playground. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
AVR-MM#2e	Provide Offsite Landscape Screening Where Appropriate	Where onsite landscape screening measures as described under AVR-MM#2d cannot provide effective screening to significantly affected high-sensitivity receptors such as nearby rural	✓		Pre-Construction/Operation	Reporting	Monthly	Authority	Contractor/ Environmental Compliance Manager/Mitigation Manager/	Post - Construction/monthly reporting	Contract Requirements/ Specifications and Landscaping and maintenance will be provided by the Contractor for its scope of work until substantial	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		residential areas, provide offsite screening, as appropriate, if desired by affected residential owners.							Authority		completion of the work at which time the Authority shall assume responsibility for landscaping or assign the responsibility to other third parties.	existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.
				✓								Impact AVR#4: Lower visual quality in the Rural San Joaquin Valley Landscape Unit.

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												Burbank Street, Verdugo Lane
				✓								Impact AVR#4: Lower visual quality in the North Bakersfield Landscape Unit: Norris Road west of SR 99
			✓									Impact AVR#4: Sound Barriers would lower visual quality or block views. The Preferred Alternative would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.
				✓								Impact AVR#5: Visual Quality Effects to Schools: Valley Oaks Charter School
			✓									Impact PK#4: Kern River Parkway. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
			✓									Impact PK#4: Mill Creek Linear Park. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of

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Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
												the site and its surroundings.
			✓									Impact PK#4: Bakersfield Amtrak Station Playground. HSR operation of the Preferred Alternative would substantially degrade the existing visual character of the site and its surroundings.
AVR-MM#2f	Landscape Treatments along the HSR Project Overcrossings and Retained Fill Elements of the HSR	Upon the completion of construction, the contractor will plant the surface of the ground supporting the overpasses (slope-fill overpasses) and retained fill elements with vegetation consistent with the surrounding landscape in terms of vegetative type, color, texture, and form. During final design, the Authority will consult with the affected cities and counties regarding the landscaping program for planting the slopes of the overcrossings and retained fill. Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed if needed. Where wall structures supporting the overpasses or retained fill are proposed, the structure will employ architectural details and low-	✓									Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓									Impact AVR#4:

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		maintenance trees and other vegetation to screen the structure, minimize graffiti, and reduce the effects of large walls. Surface coatings will be applied on wood and concrete to facilitate cleaning and the removal of graffiti. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable time after notification.										Sound Barriers Would Lower Visual Quality or Block Views	
			✓									Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.	
				✓									Impact AVR#4: Lower visual quality in the Shafter Town Landscape Unit: Shafter Depot Museum.
					✓								Impact AVR#5: Visual Quality Effects to Schools: Valley Oaks Charter School
AVR-MM#2g	Provide Sound Barrier Treatments	The contractor will design a range of sound barrier treatments for visually sensitive areas, such as those where residential views of open landscaped areas would change or in urban areas where sound barriers would adversely affect the existing character and setting (see the description of sound barriers in Table 3.16-2). The Authority will develop the treatments during final design and integrate them into the final project design. The treatments	✓		Pre-construction/Construction	Reporting	Monthly	Contractor	Contractor	Construction/monthly reporting	Contract Requirements/ Specifications	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent	

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		<p>will include, but are not limited to, the following:</p> <p>Sound barriers along elevated guideways may incorporate transparent materials where sensitive views would be adversely affected by solid sound barriers.</p> <p>Sound barriers will use non-reflective materials and will be of a neutral color.</p> <p>Surface design enhancements and vegetation appropriate to the visual context of the area will be installed with the sound barriers. Vegetation will be installed consistent with the provisions of AVR-MM#2f. Surface enhancements will be consistent with the design features developed under AVR-MM#2a, and will include architectural elements (i.e., stamped pattern, surface articulation, and decorative texture treatment as determined acceptable to the local jurisdiction. Surface coatings will be used on wood and concrete sound barriers to facilitate cleaning and the removal of graffiti.</p>										project features.	
			✓										Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
			✓										Impact AVR#4: Sound Barriers Would Lower Visual Quality or Block Views
			✓										Impact AVR#4: Lower visual quality in the Rosedale, Kern River, Central Bakersfield, and/or East Bakersfield Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings in Bakersfield due to elevated guideways and sound barriers.
					✓								Impact AVR#4: Lower visual quality in the Shafter Town Landscape Unit: Shafter Depot Museum.
				✓								Impact AVR#4: Lower visual quality in the North	

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												Bakersfield Landscape Unit: Norris Road west of SR 99
				✓								Impact AVR#4: Lower visual quality in the Kern River Landscape Unit: Kern River Parkway Bike Trail
												Impact AVR#4: Lower visual quality in the East Bakersfield Landscape Unit: Sumner Street at Baker Street
				✓								Impact AVR#5: Visual Quality Effects to Schools: Valley Oaks Charter School
AVR-MM#2h	Screen Traction Power Distribution Stations and Radio Communication Towers	Upon completion of station or HMF construction, the contractor will screen the traction power substations (located at approximately 30-mile intervals along any of the HSR alternatives), including radio towers where required, and HMF from public view through the use of landscaping or solid walls/fences. This will consist of context-appropriate landscaping of a type and scale that does not draw attention to the station. Plant species will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The	✓		Post-construction/Operation	Reporting	Annually	Contractor	Contractor	Post Construction/ Operations	Landscaping and maintenance will be provided by the Contractor for its scope of work until substantial completion of the work at which time the Authority shall assume responsibility for landscaping or assign the responsibility to other third parties.	Impact AVR#4: Lower visual quality in the Rural Valley/Agricultural Landscape Unit. Impacts on the existing visual character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
				✓								Impact AVR#4: Lower visual quality in the Rural San Joaquin Valley Landscape Unit. Impacts on the existing visual

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		landscaping will be continuously maintained and appropriate irrigation systems will be installed within the landscaped areas. Walls will be constructed of cinder-block or similar material and will be painted a neutral color to blend in with the surrounding context. If a chain-link or cyclone fence is used, it will include slats in the fencing. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable period as agreed between the Authority and local jurisdiction. Figure 3.16-66 shows a power substation in an urban environment that is partially screened by landscaping and fencing. None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.										character and quality of the site and its surroundings, as seen by nearby rural residents due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.	
			✓										Impact AVR#4: Lower visual quality in Wasco, and Shafter Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
					✓								Impact AVR#4: Lower visual quality in the Shafter Town Landscape Units. Impacts on the existing visual character and quality of the site and its surroundings due to at-grade and elevated structures, HSRs, road overcrossings, or other prominent project features.
				✓	✓								Impact AVR#4: Traction Power Stations would alter visual character or block views. The Preferred Alternative

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												would require the placement of Traction Power Distribution Stations of varying sizes at approximately 5-mile intervals along the alignment, which would potentially alter the visual character of adjacent lands and/or block views toward areas beyond the alignment.
AVR-MM#2i	Install Decorative Parapet Design at Kern River Crossing. Consistent with Mitigation Measure AVR-MM#2a.	During final design of the elevated viaduct over the Kern River and the Kern River Parkway Bike Trail, the Authority will consult with the City of Bakersfield to design a decorative parapet that fits with the viaduct's visual context. Reveals or recessed surfaces and motifs reflecting the natural environment of the Kern River shall be used on the outside surface of the parapet. The parapet and box girder shall be designed as a unified visual composition.		✓	Final Design	Consultation with City of Bakersfield, Preparation of Final Design	Once	Authority	Authority	Consultation with City and Preparation of Final Design	Incorporation of agreed decorative design elements into final design	Impact AVR#4: Change to visual quality as a result of the elevated viaduct over the Kern River and the Kern River Parkway Bike Trail.
3.17 Cultural Resources												
CUL-MM #1	Complete Inventory for Archaeological Resources and Comply with the Stipulations Regarding the Treatment of Archaeological Resources in the PA and MOA	The contractor will complete the following management steps for currently inaccessible areas once permission to enter has been obtained: <ul style="list-style-type: none"> ▪ The contractor will complete an inventory and evaluation report for archaeological resources. ▪ This work will be led or supervised by cultural resources specialists who 	✓		Pre-construction	Reporting	Weekly	Contractor	Contractor	Pre-construction/weekly reporting or as dictated by the Archaeological Treatment Plan (ATP)	PA/ MOA	Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities Construction of the HSR would result in possible substantial effects on unknown archaeological deposits or

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		<p>meet the SOI's professional qualification standards provided in 36 C.F.R. Part 61.</p> <ul style="list-style-type: none"> ▪ All newly identified resources will be mapped and described on DPR forms. Mapping will be completed by recording data with GPS hardware through which data can be imported and managed in Geographic Information Systems. Mapping of previously identified resources will be limited to updates of existing records where necessary to describe the current boundaries of the resource and any change in condition that has occurred after the first recordation. ▪ The contractor will evaluate the eligibility of identified archaeological and built environment resources for listing on the CRHR. ▪ Under delegated authority provided in the PA and MOA the contractor will also evaluate identified archaeological resources for the NRHP. ▪ For archaeological resources that are NRHP eligible the contractor will assess the potential for adverse effects within the meaning of 36 C.F.R. Part 800.5(a)(1). For CRHR eligible resources the contractor shall assess the potential for significant impacts by applying the criteria in CEQA Guidelines 										<p>paleontological resources from ground-disturbing construction operations associated with the project, or in areas where PTE has not been granted.</p>

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		15064.5(b). <ul style="list-style-type: none"> ▪ 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). ▪ For archaeological resources the Authority shall also determine if the resource is a unique archaeological site. 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 21083.2. 										
CUL-MM #2	Conduct Archaeological Training	Before the start of ground-disturbing activities within the APE, a qualified professional archaeologist who meets the SOI Standards for Archaeology will develop a training program and printed material to be presented to construction personnel. The purpose of this training and accompanying materials will be to familiarize construction personnel with the relevant legal (Section 106/NEPA/CEQA) context for	✓		Pre-construction	Reporting	Monthly	Contractor	Contractor	Prior to ground-disturbing activities/monthly reporting	Worker Environmental Awareness Program training ATP MOA An Unanticipated Discoveries Plan is a part of the ATP and has been developed, in coordination with the consulting parties, to detail the specific	Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities Construction of the HSR would result in possible substantial effects on unknown archaeological deposits or paleontological resources from

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		cultural resources of the project and with the types of cultural sites, features, and artifacts that could be uncovered during construction activities. These training sessions will be conducted before commencing construction within the APE or and will be repeated as needed as construction crews and supervisors change.									procedures to be followed if archaeological materials are found during construction. Implement an ADRP if the circumstances warrant an ADRP. The Authority will provide the ADRP, as an element of the treatment plan prepared for the section, to the MOA signatories and MOA concurring parties for review and comment.	ground-disturbing construction operations associated with the project, or in areas where PTE has not been granted.
CUL-MM #3	Conduct Archaeological Monitoring in Areas of Sensitivity, Halt Work in the Event of a Discovery	<p>Prior to ground-disturbing construction the Authority will include a cultural resources discovery plan in the contract conditions of the Contractor, identifying the following steps to be taken in the event of the inadvertent discovery of cultural resources:</p> <ul style="list-style-type: none"> An archaeological monitor will be present to observe construction at geographic locations that are sensitive for unidentified cultural resources. Such locations may consist of construction areas near identified cultural resources (within a 200-foot radius around the known boundaries of identified resources) and where ground-disturbing construction will occur within 1,500 feet of major water features, or in other areas of identified sensitivity based on inventory work to be completed when permission to enter is granted. 	✓		Construction	Reporting	Daily Logs (during active monitoring)	Contractor/Authority	Contractor	Daily logs (during active monitoring)	ATP/MOA	Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities Construction of the HSR would result in possible substantial effects on unknown archaeological deposits or paleontological resources from ground-disturbing construction operations associated with the project, or in areas where PTE has not been granted.

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		<ul style="list-style-type: none"> ▪ In the event of an archaeological resource discovery, work will cease 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. A qualified archaeologist will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. These steps shall 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 the resource is eligible for the CRHR an archaeological resource 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 mitigation The Authority shall adopt a data recovery plan as required under CEQA Guidelines § 15126.4(b)(3)(C). ▪ The California State Lands Commission (CSLC) will be notified 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 										

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		regulations promulgated by CSLC with respect to cultural resources in submerged lands. The project proponent will also comply with the PA. Performance tracking of this mitigation measure is based upon successful implementation and approval of the documentation by the SHPO and appropriate consulting parties.										
CUL-MM #4	Comply with State and Federal Law for Human Remains	Discoveries of human remains on private and state agency lands in California are governed by California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98. Native American remains discovered on federal lands are governed by NAGPRA (25 US Code Section 3001). 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 Native American Heritage Commission to identify an 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	✓		Pre-construction/Construction/Post-construction	Monitoring and reporting	No reporting necessary unless remains are identified	Qualified Professional Archaeologist	Qualified Professional Archaeologist, in coordination with the Authority, SHPO and appropriate consulting agencies	If remains are identified during construction, Weekly reporting	ATP/MOA	Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities. Construction of the HSR would result in possible substantial effects on unknown archaeological deposits or paleontological resources from ground-disturbing construction operations associated with the project, or in areas where PTE has not been granted.
				✓								Impact CUL #1: Potential Adverse Effects on Archaeological Resources Due to Construction Activities: Human Remains

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		<p>location shall be recorded with the Native American Heritage Commission and relevant information center of the California Historical Resources Information System.</p> <p>If human remains are part of an archaeological site the Authority and contractor shall, in consultation with the MLD and other stakeholders, consider preservation in place as the first option, in the order of priority called for in CEQA Guidelines Section 15126.4(b)(3).</p> <p>In consultation with the relevant Native American stakeholders the Authority may conduct scientific analysis on the human remains if called for under a data recovery plan and amenable to all stakeholders. California and the Authority will work with the most likely descendant, 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 approval of the documentation by the SHPO and appropriate consulting parties.</p>										
CUL-MM#5	Conduct Additional Testing and Data Recovery	When access is obtained, conduct surveys, testing, and evaluation pursuant to the ATP. Follow treatments and data recovery, as required.	✓		Pre-construction/Construction	Reporting	Weekly	Contractor	Contractor	Pre-construction surveys and Construction/weekly reporting or as dictated by the ATP and the MOA	PA	Impact Cul#1: Potential Adverse Effects on Archaeological Resources due to Construction Activities Construction of the HSR would result in

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												possible substantial effects on unknown archaeological deposits or paleontological resources from ground-disturbing construction operations associated with the project, or in areas where PTE has not been granted.
				✓								Impact CUL #1: Potential Adverse Effects on Archaeological Resources Due to Construction Activities: Unidentified Archaeological Resources
				✓								Impact CUL #1: Potential Adverse Effects on Archaeological Resources Due to Construction Activities: Human Remains
Historic Architectural Resources												
CUL-MM#6	Complete Inventories for Historic Architectural Resources	Because design of the project is currently only at 15%, it may be necessary to conduct additional inventories for historic architectural resources as the design is finalized. The Authority, under delegated responsibility under the PA and MOA, shall complete inventory and evaluate historic architectural properties for the NRHP. The Authority will also evaluate historic architectural	✓		Pre-construction/ Construction	Reporting	Weekly	Contractor	Contractor	Pre-construction surveys and Construction/weekly reporting or as dictated by the BETP and the MOA	PA / Historic Structure Report (HSR) and the relocation plan	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation,

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Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		resources to determine if they are historical resources (CRHR-eligible). For identified NRHP historic properties the Authority will assess the potential for adverse effects by applying the effects criteria in 36 C.F.R. Part 800.5(a)(1). For CRHR historic resources the Authority shall assess the potential for significant impacts by applying the criteria in CEQA Guidelines 15064.5(b).										staging, heavy-equipment usage and movement, drilling,
CUL-MM #7	Avoid and/or Monitor Adverse Construction Vibration Effects	The BETP will describe the methodology for the avoidance of adverse vibration effects and how such avoidance will be monitored and implemented during construction of the project. Implementation of avoidance measures will be monitored to ensure that damaging vibration levels are avoided during construction adjacent to the historic properties identified as requiring this treatment.	✓		Pre-construction/Construction	Reporting	Weekly	Contractor	Contractor	Pre-construction surveys and Construction/weekly reporting or as dictated by the BETP and the MOA	PA/Historic Structure Report (HSR) and the relocation plan	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.
CUL-MM #8	Implement Protection and/or Stabilization Measures	The BETP will identify historic properties/historical resources that may require treatment, protection and/or stabilization before the start of construction of the project. Treatment will be developed in consultation with the landowner or land-owning agencies as well as the SHPO and the MOA	✓		Pre-construction/Construction	Reporting	Weekly	Contractor	Contractor	Pre-construction surveys and Construction/weekly reporting or as dictated by the BETP and the MOA	BETP PA Historic Structure Report (HSR) and the relocation plan	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		signatories, as required by the PA. Such measures will include, but will not be limited to, vibration monitoring of construction in the vicinity of 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. For buildings that would be moved, treatment will include stabilization before, during, and after relocation; protection during temporary storage; and relocation at a new site and during subsequent rehabilitation.										historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.
CUL-MM #10	Minimize Adverse Effects through Relocation of Historic Structures	A BETP will identify historic properties/historical resources that could be relocated to help avoid their destruction and minimize the direct adverse effect of their physical damage or alteration. The development of the plan for relocation and the implementation of relocation will take place before construction. The relocation of the historic properties/historical resources will take into account the historic site and layout (i.e., the orientation of the buildings to the cardinal directions) and their potential re-use. The properties subject to relocation will be documented in detailed recordation that includes photography. This documentation may consist of preparation of updated recordation forms (DPR 523), or may be consistent with the	✓		Pre-construction/Construction/Post-Construction	Reporting	Weekly (during physical relocation)	Contractor	Contractor	Pre-construction surveys and Construction/weekly reporting or as dictated by the BETP and the MOA	BETP/Relocation Plan, PA HABS/HAER/HALS/MOA	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		HABS, the Historic American Engineering Record (HAER), or the Historic American Landscape Survey (HALS) programs; or other recordation methods stipulated in the MOA and described in the BETP. The relocation plan will provide for stabilization of the structures before, during, and after the move, as well as inadvertent damage.										
CUL-MM #11	Minimize Adverse Operational Noise Effects	A BETP will identify the historic properties/historical resources that will be subject to treatment to minimize the indirect adverse effects caused by the operational noise of the HSR project. Properties subject to this mitigation will be treated in consultation with the landowner or land-owning agencies and the CEQA lead agency (i.e., the Authority). Preliminary project design options, such as noise walls, have been developed to help reduce noise impacts and follow FRA methodologies for noise abatement.	✓		Pre-construction/Construction/Post-Construction	Reporting	Ongoing	Contractor	Contractor	Pre-construction and Construction	BETP PA Historic American Building Survey (HABS)/Historic American Engineering Record (HAER)/ Historic American Landscape Survey (HALS) programs, MOA	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.
CUL-MM #12	Prepare and Submit Additional Recordation and Documentation	A BETP will identify specific historical resources that would be physically altered, damaged, relocated, or destroyed by the project that will be documented in detailed recordation that includes photography. This documentation may consist of preparation of updated recordation forms (DPR 523), or may be consistent with the	✓		Pre-construction/Construction	Reporting	Monthly	Contractor, Authority to coordinate with SHPO	Contractor	Prior to construction/monthly reporting	BETP/ Photographs and nomination document, HABS/HAER/HALS/MOA	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation,

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		HABS, the Historic American Engineering Record (HAER), or the Historic American Landscape Survey (HALS) programs; a Historic Structure Report; or other recordation methods stipulated in the MOA and described in the BETP. The recordation undertaken by this treatment would focus on the aspect of integrity that would be affected by the project for each historic property subject to this treatment. For example, historic properties in an urban setting that would experience an adverse visual effect would be photographed to capture exterior and contextual views; interior spaces would not be subject to recordation if they would not be affected. Consultation with the SHPO and the consulting parties will be conducted for the historic architectural resources to be documented. Recordation documents will follow the appropriate guidance for the recordation format and program selected. Copies of the documentation will be provided to the consulting parties and offered to the appropriate local governments, historical societies and agencies, or other public repositories, such as libraries. The documentation will also be offered in printed and electronic form to any repository or organization to which the SHPO, the Authority, and the local agency with jurisdiction over		✓								staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements. Impact CUL #2: Potential Adverse Effects on Historic Architectural [Built] Resources Due to Construction Activities: Introduction of Visual Elements: MR #00A, MR #00B, MR #042, MR #075.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		the property, through consultation, may agree. The electronic copy of the documentation may also be placed on an agency or organization's website.										
CUL-MM #13	Prepare Interpretive or Educational Materials	<p>Based on the finalization of design and the completed inventory, the BETP will identify historic properties and historical resources that will be subject to historic interpretation or preparation of educational materials. Interpretive and educational materials will provide information regarding specific historic properties or historical resources and will address the aspect of the significance of the properties that would be affected by the project. Interpretive or educational materials could include, but are not limited to: brochures, videos, websites, study guides, teaching guides, articles or reports for general publication, commemorative plaques, or exhibits.</p> <p>Historic properties and historical resources subject to demolition by the project will be the subject of informative permanent metal plaques that will be installed at the site of the demolished historic property or at nearby public locations. Each plaque will provide a brief history of the subject property, its engineering/architectural features and characteristics, and the reasons for and the date of its demolition.</p> <p>The interpretive or educational materials will utilize images,</p>	✓		Post-construction	Reporting	Annual	Authority	Authority, in consultation with the SHPO and appropriate consulting parties	Post-construction/annual reporting	<p>BETP</p> <p>Photographic documentation</p> <p>Plan for repairs to historic properties</p>	<p>Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.</p> <p>Impact CUL #2: Potential Adverse Effects on Historic Architectural [Built] Resources Due to Construction Activities: Introduction of Visual Elements: MR #00A, MR #00B, MR #042, MR #075.</p>
				✓								

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		narrative history, drawings, or other material produced for the mitigation described above, including the additional recordation prepared, or other archival sources. The interpretive or educational materials should be advertised, and made available to, and/or disseminated to the public. The interpretive materials may be made available in physical or digital formats, at local libraries, historical societies, or public buildings.										
CUL-MM #14	Plan Repair of Inadvertent Damage	Based on the completed inventory, the BETP will provide a plan for the repair of inadvertent damage to historic properties or historical resources be developed before project construction. The plan will consist of a general protocol for inadvertent damage to historic architectural resources and a listing of specific properties that should be the subject of an individual plan because of their immediate proximity to the project. Inadvertent damage from the project to any of the historic properties or historical resources near construction activities will be repaired in accordance with the SOI's Standards for Rehabilitation. Inadvertent damage will consist of any damage that results in a significant impact to a historical within the meaning of CEQA Guidelines Section 15064.5(b)(2) or adverse effects to historic properties within the meaning of 36	✓		Pre-construction/Construction/Post-construction	Reporting	Monthly	Authority	Authority, in consultation with the SHPO and appropriate consulting parties	Monthly reporting	BETP, Historic American Building Survey (HABS)/Historic American Engineering Record (HAER)/ Conformance with SOI's Standards of Rehabilitation, Plans for repairs to historic properties	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		<p>C.F.R. Part 800.5(a)(1). The plan may utilize photographic documentation prepared for the other mitigation measures (such as the additional recordation) as the baseline condition for assessing damage. The plan will include the protocols for notification, coordination, and reporting to the SHPO and the landowner or land-owning agencies. Before it can be implemented, the repair plan will be submitted for review and comment to the SHPO to verify conformance with the SOI's Standards for Rehabilitation.</p> <p>This mitigation measure is consistent with best practices within the professional historic preservation community and is commensurate with treatment of historic properties in similar-scale transportation projects. This type of mitigation measure has proven to be effective in achieving the stewardship goals of Section 106 and CEQA review. Performance tracking of this treatment is described in the BETP.</p>										
CUL-MM #15	Visual Screening	Based on the finalization of design and the completed inventory, the BETP will identify historic properties and historical resources that will be subject to visual screening planting. Visual screening will consist of plant material that will minimize the view of the project from the property subject to mitigation. This treatment will minimize adverse effects on historic	✓		Construction/Post-construction	Reporting	Annual	Authority	Authority	Post-construction/annual reporting	BETP Photographic documentation Visual Screening Plan	Impact CUL#2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		properties/historical resources to the extent possible. Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed if needed. Visual screen planting may be undertaken in the form of boundary planting on the affected property, planting at affected viewpoints, and/or planting on project property as appropriate. This treatment will be developed in consultation with the landowner or land-owning agencies, as well as the SHPO and the MOA signatories, as required by the PA. The visual screen planting treatment will include preparation of a planting plan that utilizes evergreen tree or shrub species and will take into account both the growth rate and ultimate height and density for the selected species to ensure that the visual screen can be accomplished effectively.										equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements.
3.18 Regional Growth												
No significant impacts on Regional Growth have been identified.												
3.19 Cumulative Impacts												
CUM-N&V-MM#1	Consult with agencies regarding construction activities.	To minimize the potential overlapping noise-generating construction activities within the same area, the Authority	✓	✓	Pre-Construction/ Construction	Notify and consult with departments/agencies	Monthly	Contractor/Authority	Contractor	Monthly, record keeping, and reporting	Meetings with departments/agencies	Impact CUM-N&V: Cumulative noise and vibration impacts of the HSR

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		would consult with local city and county planning departments and other agencies as determined necessary. Consultation would entail notifying the departments/agencies regarding the anticipated HSR construction schedule and would allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HSR alignment, to the extent feasible.										alternatives and other past, present, and reasonably foreseeable projects during construction
CUM-SO-MM#1	Consult with agencies regarding construction activities.	To minimize the potential cumulative effects of overlapping construction activities within the same area, the Authority would consult with the local city and county planning departments and other agencies as determined necessary, to notify the departments/agencies regarding the anticipated HSR construction schedule and allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HSR alignment, to the extent feasible, in order to limit the overlap of community disruption.	✓	✓	Pre-Construction/Construction	Notify and consult with departments/agencies	Monthly	Contractor/Authority	Contractor	Monthly, record keeping, and reporting	Meetings with departments/agencies	Impact CUM-SO: Construction and operation of the HSR project and other past, present, and reasonably foreseeable projects would result in division and/or disruption of communities in the cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield, as well as unincorporated communities in Kings and Kern counties.
CUM-SO-MM#2	Public outreach.	For areas with potentially overlapping construction schedules for the HSR and other projects, the Authority would continue to undertake environmental justice outreach prior to construction, as described in Mitigation Measure SO-6: Continue	✓	✓	Pre-Construction/Construction	Public outreach activities	Monthly	Contractor/Authority	Contractor	Monthly, record keeping, and reporting	Meetings with departments/agencies	Impact CUM-SO: Construction and operation of the HSR project and other past, present, and reasonably foreseeable projects would result in division and/or

Table 1
Fresno to Bakersfield (Including Locally Generated Alternative) Mitigation Monitoring and Reporting Program

Mitigation Measure	Title	Mitigation Text	North of Poplar Ave	South of Poplar Ave	Phase	Implementation Action	Reporting Schedule	Implementation Party	Reporting Party	Implementation Text	Implementation Mechanism	Impact # and Impact Text
		outreach to disproportionately and negatively impacted environmental justice communities of concern. The Authority would obtain feedback from the affected neighborhoods regarding these project construction schedules to address community concerns.										disruption of communities in the cities of Fresno, Hanford, Corcoran, Wasco, Shafter, and Bakersfield, as well as unincorporated communities in Kings and Kern counties.
CUM-VQ-MM#1	Consult with agencies on HSR project design.	Prior to construction, the Authority would consult with local city and county planning departments to provide information about the HSR project design. This would allow for local plans and proposed development projects that could be adversely affected by the HSR project to be modified and potential visual impacts to high-sensitivity viewers to be reduced, as determined feasible by project applicants/planning departments.	✓	✓	Pre-Construction/Construction	Notify and consult with departments/agencies	Monthly	Contractor/Authority	Contractor	Monthly, record keeping, and reporting	Meetings with departments/agencies	Impact CUM-VQ: Cumulative visual effect of the HSR in combination with other past, present, and reasonably foreseeable future projects

EXHIBIT D – CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD SECTION
CALIFORNIA STATE LANDS COMMISSION
STATEMENT OF FINDINGS

1.0 INTRODUCTION

The California State Lands Commission (Commission), acting as a responsible agency under the California Environmental Quality Act (CEQA), makes these findings comply with CEQA as part of its discretionary approval to authorize issuance of a General Lease - Public Agency Use lease, to the California High-Speed Rail Authority (Authority), for use of sovereign land associated with the proposed California High-Speed Train Project Fresno to Bakersfield Section (Project). (See generally Pub. Resources Code, § 21069; State CEQA Guidelines, § 15381.)¹ The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions. (Pub. Resources Code, §§ 6301, 6306, 6009, subd. (c).) All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust.

The Commission is a responsible agency under CEQA for the Project because the Commission must approve a lease for the Project to go forward and because the Authority, as the CEQA lead agency, has the principal responsibility for approving the Project and has completed its environmental review under CEQA. The Authority analyzed the environmental impacts associated with the Project in a Final Environmental Impact Report (EIR) (State Clearinghouse [SCH] No. 2009091126) and, in May 2014, certified the EIR and adopted a Mitigation Monitoring Program (MMP) and Findings. After certifying the EIR, the Authority also prepared a Supplemental EIR and certified it on October 16, 2018, where a new Locally Generated Alternative was analyzed for the Fresno to Bakersfield Project Section, which did not involve lands under the Commission's jurisdiction.

The Project involves Construction, use, and maintenance of a new electric-powered high-speed, steel-wheel-on-steel-rail train system and steel truss bridge crossing over the Kings River, Kings County.

The Authority determined that the Project) could have significant environmental effects on the following environmental resources:

- Transportation
- Air Quality and Global Climate Change

¹ CEQA is codified in Public Resources Code section 21000 et seq. The State CEQA Guidelines are found in California Code of Regulations, title 14, section 15000 et seq.

- Noise and Vibration
- Electromagnetic Fields and Electromagnetic Interference
- Public Utilities and Energy
- Biological Resources and Wetlands
- Hydrology and Water Resources
- Geology, Soils, and Seismicity
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics, Communities, and Environmental Justice
- Station Planning, Land Use, and Development
- Agricultural Lands
- Parks, Recreation, and Open Space
- Aesthetics and Visual Resources
- Cultural and Paleontological Resources
- Regional Growth

Of the 17 resources areas noted above, Project components within the Commission's jurisdiction (i.e., crossing over the Kings River) could have significant environmental effects on 4 of the resource areas, as follows:

- Air Quality and Global Climate Change (AQ)
- Noise and Vibration (N&V)
- Biological Resources and Wetlands (BIO)
- Cultural and Paleontological Resources (CUL)

In certifying the Final EIR and approving the Project, the Authority imposed various mitigation measures (MMs) for Project-related significant effects on the environment as conditions of Project approval and concluded that Project-related impacts would be substantially lessened with implementation of these MMs such that the impacts would be less than significant for most resources areas.

- However, even with the integration of all feasible mitigation, the Authority concluded in the EIR that some of the identified impacts would remain significant. As a result, the Authority adopted a Statement of Overriding Considerations to support its approval of the Project despite the significant and unavoidable impacts (Attachment D-1 (2018) and Attachment D-2 (2014)). The Authority determined that, after mitigation, the Project may still have significant impacts on Noise and Vibration (N&V), Socioeconomics, Communities, and Environmental Justice (SO), and Station Planning, Land Use, and Development (LU). Because similar impacts are not significant for the Project being built over the Kings River, these significant impacts are outside the jurisdiction and approval authority of the Commission, and a Statement of Overriding Considerations is not required by the Commission.

As a responsible agency, the Commission complies with CEQA by considering the EIR and reaching its own conclusions on whether, how, and with what conditions to approve

a project. In doing so, the Commission may require changes in a project to lessen or avoid the effects, either direct or indirect, of that part of the project which the Commission will be called on to carry out or approve. In order to ensure the identified mitigation measures and/or Project revisions are implemented, the Commission adopts the Mitigation Monitoring Program (MMP) as set forth in Exhibit C as part of its Project approval.

2.0 ADMINISTRATIVE RECORD OF PROCEEDINGS AND CUSTODIAN OF THE RECORD

These Findings are supported by substantial evidence contained in the EIR and other relevant information provided to the Commission or existing in its files, all of which is contained in the administrative record. The administrative record is located at the California State Lands Commission, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825. The custodian for the administrative record is the California State Lands Commission Division of Environmental Planning and Management.

3.0 FINDINGS

The Commission's role as a responsible agency affects the scope of, but not the obligation to adopt, findings required by CEQA. Findings are required under CEQA by each "public agency" that approves a project for which an EIR has been certified that identifies one or more significant impacts on the environment (Pub. Resources Code, § 21081, subd. (a); State CEQA Guidelines, § 15091, subd. (a).) Because the EIR and Supplemental EIR where a new Locally Generated Alternative was analyzed for the Fresno to Bakersfield Project Section, which did not involve lands under the Commission's jurisdiction certified by the Authority for the Project identify potentially significant impacts that fall within the scope of the Commission's approval, the Commission makes the Findings set forth below as a responsible agency under CEQA. (State CEQA Guidelines, § 15096, subd. (h); *Riverwatch v. Olivenhain Mun. Water Dist.* (2009) 170 Cal.App.4th 1186, 1202, 1207.

While the Commission must consider the environmental impacts of the Project as set forth in the EIR, the Commission's obligation to mitigate or avoid the direct or indirect environmental impacts of the Project is limited to those parts which it decides to carry out, finance, or approve (Pub. Resources Code, § 21002.1, subd. (d); State CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f)-(g).) Accordingly, because the Commission's exercise of discretion involves only issuing a General Lease- Public Agency Use lease for this Project, the Commission is responsible for considering only the environmental impacts related to lands or resources subject to the Commission's jurisdiction. With respect to all other impacts associated with implementation of the Project, the Commission is bound by the legal presumption that the EIR fully comply with CEQA.

The Commission has reviewed and considered the information contained in the Project EIR. All significant adverse impacts of the Project identified in the EIR relating to the Commission's approval of a General Lease – Public Agency Use, which would allow the

construction, use, and maintenance of a new electric-powered high-speed, steel-wheel-on-steel-rail train system, and steel truss bridge crossing, are included herein and organized according to the resource affected.

These Findings, which reflect the independent judgment of the Commission, are intended to comply with CEQA's mandate that no public agency shall approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects unless the agency makes written findings for each of those significant effects. Possible findings on each significant effect are:

- (1) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
- (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the Commission. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- (3) Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.²

A discussion of supporting facts follows each Finding.

- Whenever Finding (1) occurs, the mitigation measures that lessen the significant environmental impact are identified in the facts supporting the Finding.
- Whenever Finding (2) occurs, the agencies with jurisdiction are specified. These agencies, within their respective spheres of influence, have the responsibility to adopt, implement, and enforce the mitigation discussed.

The mitigation measures are briefly described in these Findings; more detail on the mitigation measures is included in the Final EIR.

A. SUMMARY OF FINDINGS

Based on public scoping, the proposed Project will have No Impact on the following environmental issue areas:

- Transportation
- Electromagnetic Fields and Electromagnetic Interference
- Public Utilities and Energy
- Hydrology and Water Resources
- Geology, Soils, and Seismicity
- Hazardous Materials and Wastes

² See Public Resources Code section 21081, subdivision (a) and State CEQA Guidelines section 15091, subdivision (a).

- Safety and Security
- Station Planning, Land Use, and Development
- Agricultural Lands
- Parks, Recreation, and Open Space

The EIR subsequently identified the following impacts as Less Than Significant:

- Air Quality and Global Climate Change (AQ)
- Noise and Vibration (N&V)
- Biological Resources and Wetlands (BIO)
- Socioeconomics, Communities, and Environmental Justice (SO)
- Station Planning, Land Use, and Development (LU)
- Aesthetics and Visual Resources (AVR)
- Cultural and Paleontological Resources (CUL)

For the remaining potentially significant effects, the Findings are organized by significant impacts within the EIR issue areas as presented below.

B. POTENTIALLY SIGNIFICANT IMPACTS

The impacts identified in Table 1 were determined in the Final EIR to be potentially significant absent mitigation. After application of mitigation, however, several impacts were determined to be less than significant. For the full text of each MM, please refer to Exhibit C, Attachment C-1.

Even with the integration of all feasible mitigation, the Authority concluded in the EIR that the other identified potentially significant impacts will remain significant. As seen in Table 1, none of the impacts under the Commission’s jurisdiction were determined by the Authority to remain significant and unavoidable after applying the mitigation.

Table 1 – Significant Impacts by Issue Area

Environmental Issue Area	Impact Numbers	
	Less Than Significant with Mitigation	Significant and Unavoidable
Air Quality and Global Climate Change (AQ)	Impact AQ #1, Impact AQ #2,	
Noise and Vibration (N&V)	Impact N&V #3	
Biological Resources and Wetlands (BIO)	Impact BIO #2, Impact BIO #3, Impact BIO #6, Impact BIO #7, Impact BIO #8	
Cultural and Paleontological Resources (CUL)	Impact CUL #1, Impact CUL #3,	

C. IMPACTS REDUCED TO LESS THAN SIGNIFICANT LEVELS WITH MITIGATION

The impacts identified below were determined in the Final EIR to be potentially significant absent mitigation; after application of mitigation, however, the impacts were determined to be less than significant.

1. AIR AIR QUALITY AND GLOBAL CLIMATE CHANGE (AQ)

CEQA FINDING NO. AQ #1 AND AQ #2

Impact: **Impact AQ #1: Regional Air Quality Impacts during Construction**

Impact AQ #2: Compliance with Air Quality Plans

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in exceeding or contributing to an exceedance of any air quality standard or contributing substantially to an existing or projected air quality violation is considered a significant impact.

Implementation of MM(s) AQ-MM #2, and AQ-MM #4 has been incorporated into the Project to reduce this impact to a less than significant level.

- **AQ-MM#2:** Reduce Criteria Exhaust Emissions from On-Road Construction Equipment
- **AQ-MM#4:** Reduce Criteria Exhaust Emissions from Construction Equipment

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

2. Noise and Vibration (N&V)

CEQA FINDING NO. N&V #3

Impact: **Impact N&V #3: Moderate and Severe Noise Impacts from Project Operation to Sensitive Receptors**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in severe impacts to sensitive receptors in locations where train speeds and operations are high.

Implementation of MM(s) MM-N&V #4 through MM-N&V #6 has been incorporated into the Project to reduce this impact to a less than significant level.

- **N&V-MM #4:** Vehicle Noise Specification
- **N&V-MM #5:** Special Trackwork at Crossovers and Turnouts
- **N&V-MM #6:** Additional Noise and Vibration Analysis Following Final Design

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

3. Biological Resources and Wetlands (BIO)

CEQA FINDING NO. BIO #2

Impact: **Impact BIO #2: Effects on Special-Status Wildlife**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting habitat with potential to support special-status reptiles and amphibians.

Implementation of MM(s) BIO-MM #22, BIO-MM #23, MM-BIO #31 through MM-BIO #34, MM-BIO #40 through MM-BIO #42, and MM-BIO #58 has been incorporated into the Project to reduce this impact to a less than significant level.

- **BIO-MM #22:** Conduct Pre-construction Surveys for Special-Status Reptile and Amphibian Species
- **BIO-MM #23:** Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance, and Relocation
- **MM-BIO #31:** Bird Protection
- **MM-BIO #32:** Conduct Protocol and Pre-construction Surveys for Swainson's Hawks
- **MM-BIO #33:** Swainson's Hawk Nest Avoidance and Monitoring
- **MM-BIO #34:** Monitor Removal of Nest Trees for Swainson's Hawks

- **MM-BIO #40:** Conduct Pre-construction Surveys for Special-Status Bat Species
- **MM-BIO #41:** Bat Avoidance and Relocation
- **MM-BIO #42:** Bat Exclusion and Deterrence
- **MM-BIO #58:** Compensate for Loss of Swainson’s Hawk Nesting Trees

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

CEQA FINDING NO. BIO #3

Impact: **Impact BIO #3: Effects on Special-Status Plant Communities**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting habitat with potential to support special-status plant communities and riparian areas.

Implementation of MM(s) MM-BIO#47 through MM-BIO#49, MM-BIO#61 through MM-BIO#63, and MM-BIO#65 has been incorporated into the Project to reduce this impact to a less than significant level.

- **MM-BIO #47:** Restore Temporary Riparian Impacts
- **MM-BIO #48:** Restore Temporary Impacts on Jurisdictional Waters
- **MM-BIO #49:** Monitor Construction Activities within Jurisdictional Waters
- **MM-BIO #61:** Compensate for Permanent Riparian Impacts
- **MM-BIO #62:** Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan
- **MM-BIO #63:** Compensate for Permanent and Temporary Impacts on Jurisdictional Waters

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

CEQA FINDING NO. BIO #6

Impact: **Impact BIO #6: Project Effects on Special-Status Wildlife Species**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting potential habitat for special-status reptiles and amphibian species.

Implementation of MM(s) BIO-MM #23, BIO-MM #31 through BIO-MM #34, BIO-MM #40 through BIO-MM #42, BIO-MM #48, BIO-MM #49, BIO-MM #58, and BIO-MM #63 has been incorporated into the Project to reduce this impact to a less than significant level.

- See **BIO-MM #23, BIO-MM #31 through BIO-MM #34, BIO-MM #40 through BIO-MM #42, BIO-MM #48, BIO-MM #49, BIO-MM #58, and BIO-MM #63** above

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

CEQA FINDING NO. BIO #7

Impact: **Impact BIO #7: Project Effects on Habitats of Concern**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting special-status plant communities and riparian areas.

Implementation of MM(s) BIO-MM #47 through BIO-MM #49, BIO-MM #61 through BIO-MM #63, and BIO-MM #52 has been incorporated into the Project to reduce this impact to a less than significant level.

- See **BIO-MM #47 through BIO-MM #49, BIO-MM #61 through BIO-MM #63** above
- **BIO-MM #52: Construction in Wildlife Movement Corridors**

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

CEQA FINDING NO. BIO #8

Impact: **Impact BIO #8: Project Effects on Wildlife Movement Corridors**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting the wildlife movement corridors and habitat linkages.

Implementation of MM(s) MM BIO#52 has been incorporated into the Project to reduce this impact to a less than significant level.

- See **MM BIO#52** above

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

4. Cultural and Paleontological Resources (CUL)**CEQA FINDING NO. CUL #1**

Impact: **Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting unknown or unrecorded archaeological resources.

Implementation of MM(s) CUL-MM #2, CUL-MM #3, and CUL-MM #4 has been incorporated into the Project to reduce this impact to a less than significant level.

- **CUL-MM #2:** Conduct Archaeological Training
- **CUL-MM #3:** Conduct Archeological Monitoring in Areas of Sensitivity, Halt Work in the Event of an Archaeological Discovery
- **CUL-MM #4:** Comply with State and Federal Law for Human Remains

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

CEQA FINDING NO. CUL #3

Impact: **Impact CUL #3: Potential Adverse Effects on Paleontological Resources due to Construction Activities**

Finding(s): (1) Changes or alterations have been required in, or incorporated into, the project that mitigate or avoid the significant environmental effect as identified in the EIR.

FACTS SUPPORTING THE FINDING(S)

Activities proposed as part of the Project have the potential to result in affecting unknown or unrecorded paleontological resources.

Implementation of MM(s) MM CUL#17 and MM CUL#18 has been incorporated into the Project to reduce this impact to a less than significant level.

- **CUL-MM #17:** Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan
- **CUL-MM #18:** Halt Construction When Paleontological Resources Are Found

LEVEL OF SIGNIFICANCE AFTER MITIGATION. With the mitigation described above, this impact is reduced to a less than significant level.

D. FINDINGS ON ALTERNATIVES

As explained in *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1000:

When it comes time to decide on project approval, the public agency's decisionmaking body evaluates whether the alternatives [analyzed in the EIR] are actually feasible.... At this final stage of project approval, the agency considers whether [s]pecific economic, legal, social, technological, or other considerations...make infeasible the mitigation measures or alternatives identified in the environmental impact report.' Broader considerations of policy thus come into play when the decisionmaking body is considering actual feasibility than when the EIR preparer is assessing potential feasibility of the alternatives [citations omitted].

The eight alternatives analyzed in the EIR and Supplemental EIR represent a reasonable range of potentially feasible alternatives that could reduce one or more significant impacts of the Project. These alternatives include:

- 1) No Project Alternative
- 2) Hanford Area Alternatives
- 3) Corcoran Area Alternatives
- 4) Allensworth Alternatives
- 5) Wasco-Shafter Alternatives

- 6) Station Alternatives
- 7) May 2014 Project (Supplemental EIR Alternative)
- 8) Preferred Alternative

As presented in the EIR and Supplemental EIR, the alternatives were described and compared with each other and with the Preferred Alternative.

Under State CEQA Guidelines section 15126.6, subdivision (e)(2), if the No Project Alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative among the other alternatives. Based on the analysis contained in the EIR and Supplemental EIR, the Preferred Alternative, is considered the environmentally superior alternative because the environmental impacts associated with its implementation would be the lowest of all the alternative scenarios examined and this alternative would meet all Project objectives.

The Authority independently reviewed and considered the information on alternatives provided in the EIR and Supplemental EIR and in the record. The EIRs reflect the Authority's independent judgment as to alternatives. The Authority found that the Project provides the best balance between the Project goals and objectives and the Project's benefits. The seven CEQA alternatives proposed and evaluated in the EIR and Supplemental EIR were rejected as being infeasible for reasons provided in the Authority's Findings Regarding Alternatives (Attachment D-1 (2014) and Attachment D-2 (2018)).

Based upon the objectives identified in the Final EIR and Supplemental EIR and the detailed mitigation measures imposed upon the Project, the Commission has determined that the Project should be approved, subject to such mitigation measures provide in Exhibit C, Mitigation Monitoring Program.

ATTACHMENT D-1

California High-Speed Rail Authority

**Findings, Findings Regarding Alternatives, and
Statement of Overriding Considerations (2018)**

California High-Speed Rail Authority

Fresno to Bakersfield *Section*

Final Supplemental Environmental Impact Report

CEQA Findings of Fact and Statement
of Overriding Considerations

October 2018



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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMD	Air Quality Management District
Authority	California High-Speed Rail Authority
BETP	Built Environment Treatment Plan
BMP	best management practices
BRMP	Biological Resources Management Plan
C.F.R.	Code of Federal Regulations
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CMMP	Comprehensive Mitigation and Monitoring Plan
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	Carbon dioxide equivalents
dBA	A-weighted decibel
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERA	environmentally restricted area(s)
ESA	environmentally sensitive area(s)
F-B LGA	Fresno to Bakersfield Locally Generated Alternative
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GC	general conformity
GHG	greenhouse gas
HMF	heavy maintenance facility
HSR	high-speed rail
HST	high-speed train
LEDPA	least environmentally damaging practicable alternative
LOS	level of service
MOA	Memorandum of Agreement
MOIF	maintenance of infrastructure facility
MT	metric tons
NO _x	nitrogen dioxide
PA	Programmatic Agreement

PM ₁₀	particulate matter less than 10 microns in diameter (but larger than 2.5 microns)
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PRMMP	Paleontological Resource Monitoring and Mitigation Plan
PRS	paleontological resources specialist
RRP	Restoration and Revegetation Plan
RTP	regional transportation plan
SB	Senate Bill
SEL	sound exposure level
SHPO	State Historic Preservation Office
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	short-lived climate pollutant
SO ₂	sulfur dioxide
SR	State Route
SWRCB	State Water Resources Control Board
TM	technical memoranda
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VERA	Voluntary Emission Reduction Agreement
VMT	vehicle miles traveled
VOC	volatile organic compound
WEAP	Worker Environmental Awareness Program

1 INTRODUCTION

These California Environmental Quality Act (CEQA) Findings of Fact and Statement of Overriding Considerations are intended to fulfill the responsibilities of the California High-Speed Rail Authority (Authority) under CEQA for its approval for the Fresno to Bakersfield Locally Generated Alternative of the Fresno to Bakersfield Section of the California High-Speed Rail (HSR) System. CEQA provides that no public agency shall approve a project or program, as proposed, if it would result in significant environmental effects as identified in an EIR, unless it adopts and incorporates feasible mitigation to avoid and reduce such effects and adopts appropriate findings.

Section 15091 of the CEQA Guidelines provides as follows:

- a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
 - 1) Changes or alterations have been required in, or incorporated into, the project, which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
 - 2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
 - 3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

CEQA Guidelines Section 15093 further provides:

- a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

These Findings include a description of the Preferred Alternative for the portion of the Fresno to Bakersfield Section from just north of Poplar Avenue in Kern County south to the intersection of 34th Street and L Street including the F Street Station, findings concerning potentially significant environmental impacts and mitigation to address such impacts, a discussion of cumulative and growth-inducing impacts, and a statement of overriding considerations.

The custodian of the documents and other materials that constitute the record of proceedings upon which these CEQA findings of fact and statement of overriding considerations are based is the California High-Speed Rail Authority, 770 L Street, Suite 620 MS-1, Sacramento, California 95814, (916) 324-1541.

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2 PROJECT DESCRIPTION

2.1 Fresno to Bakersfield Section Background

The Authority has responsibility for planning, designing, constructing, operating, and maintaining an electric-powered HSR System in California. When completed, the nearly 800-mile train system will provide new passenger rail service to more than 90 percent of the state's population. More than 200 weekday trains will serve the statewide intercity travel market.¹ The HSR system will be capable of operating speeds of up to 220 miles per hour, with state-of-the-art safety, signaling, and automated train control systems collectively known as the enhanced Automatic Train Control system, to include all positive train control functions and to comply with the requirements of Code of Federal Regulations Title 49, Part 236 Subpart I. The system will connect and serve the major metropolitan areas of California, extending from San Francisco and Sacramento in the north to San Diego in the south (Figure 1). The Authority is the CEQA lead agency.

Following the completion of a programmatic review of the California HSR system, the Authority and Federal Railroad Administration (FRA) initiated project-level environmental impact reports/environmental impact statements (EIR/EIS) for nine independent project sections of the California HSR System, including the Fresno to Bakersfield Section. The Authority published a Notice of Preparation on September 29, 2009, and the FRA published a Notice of Intent in October 2009. Following public scoping, the Authority and the FRA published a Draft EIR/EIS in August 2011. Based on public and agency comments, the Authority and the FRA developed new alignment alternatives and analyzed their potential impacts in a Revised Draft EIR/Supplemental EIS published for public review in July 2012. In April 2014, the Authority and the FRA published the Fresno to Bakersfield Section Final EIR/EIS.

In the Fresno to Bakersfield Section Final EIR/EIS, the Authority and FRA identified a Preferred Alternative consisting of portions of the "BNSF Alternative" in combination with the "Corcoran Bypass," "Allensworth Bypass," and "Bakersfield Hybrid" alternatives (Figure 2). Following publication of the Final EIR/EIS, the Authority certified the Fresno to Bakersfield Section Final EIR/EIS and approved the 2014 Preferred Alternative south from Fresno to 7th Standard Road, the northern city limits of Bakersfield. Based on an analysis of potential project impacts and substantive agency and public comments including comments filed after issuance of the Final EIS, FRA issued a Record of Decision on June 27, 2014, approving the 2014 Preferred Alternative in its entirety from the Fresno Station to the Bakersfield Station at Truxtun Avenue.

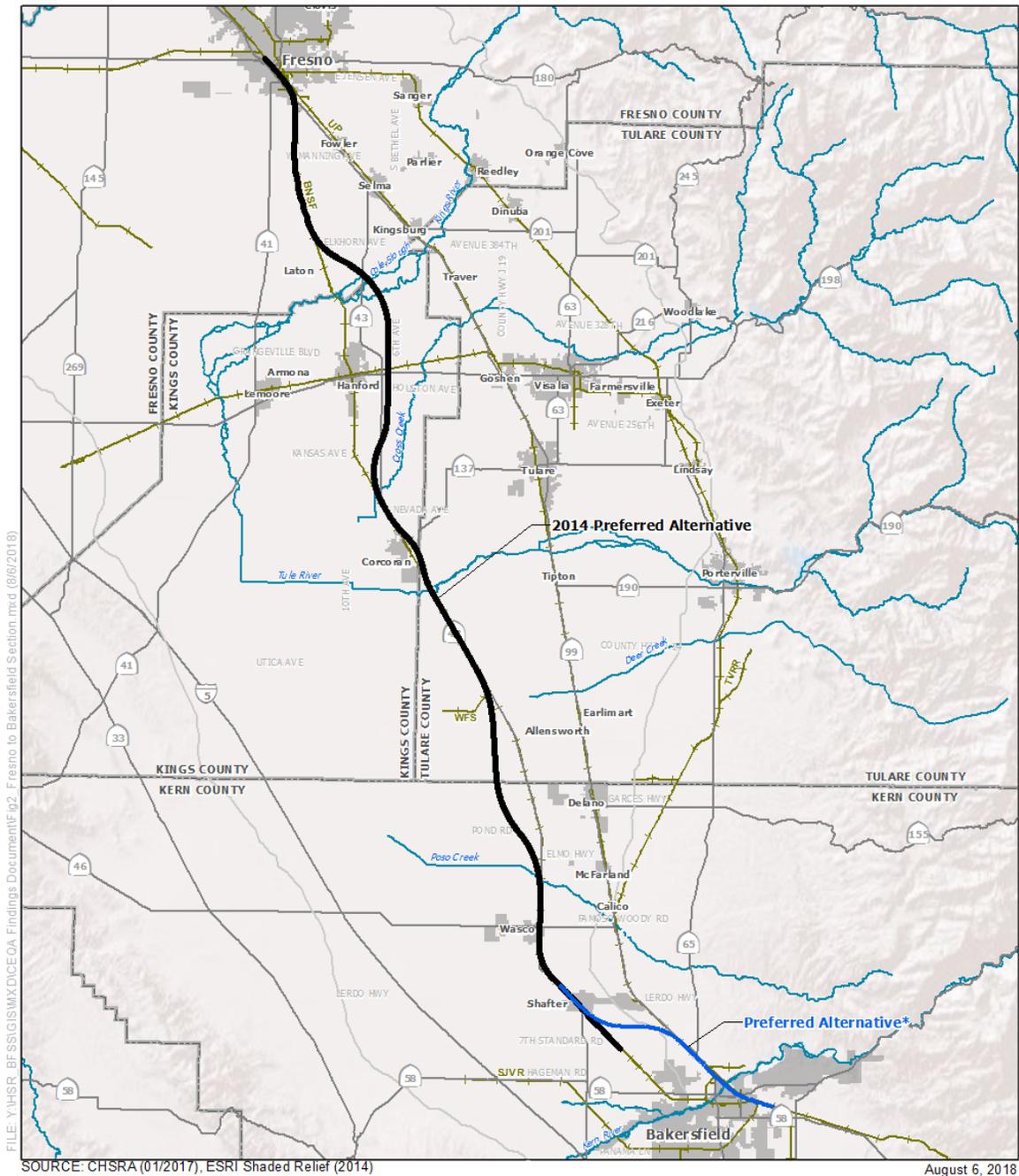
¹ "Intercity rail passenger transportation" is defined at 49 U.S.C. 24102(4) as "rail passenger transportation except commuter rail passenger transportation." An intercity passenger rail service consists of a group of one or more scheduled trains (roundtrips) that provide intercity passenger rail transportation between bona fide travel markets (not constrained by state or jurisdictional boundaries), generally with similar quality and level-of-service specifications, within a common (but not necessarily exclusive or identical) set of identifiable geographic markets (*Federal Register* Volume 74, No 119, June 23, 2009). Similarly, "commuter rail passenger transportation" is defined at 49 U.S.C. 24102(3) as "short-haul rail passenger transportation in metropolitan and suburban areas usually having reduced fare, multiple ride, and commuter tickets and morning and evening peak period operations."

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Figure 1 California HSR System Initial Study Corridors

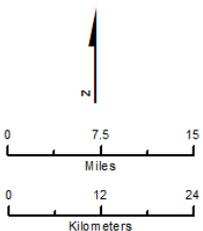
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SOURCE: CHSRA (01/2017), ESRI Shaded Relief (2014)

August 6, 2018



- Fresno to Bakersfield Section**
- 2014 Preferred Alternative
 - Preferred Alternative*
 - * (As considered in this Findings Document)
 - Stream/River
 - Canal/Aqueduct
 - Existing rail line
 - County boundary
 - Community/urban area

Figure 2 Fresno to Bakersfield Section

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2.1.1 Fresno to Bakersfield Locally Generated Alternative Background

The Fresno to Bakersfield Section Final EIR/EIS considered the impacts associated with three alternative alignments through Bakersfield, and ultimately the Authority and FRA selected the Bakersfield Hybrid as the Preferred Alternative through Bakersfield. On June 5, 2014, the City of Bakersfield filed a state lawsuit challenging the Authority's May 7, 2014 approvals under CEQA. The City claimed that the 2014 Preferred Alternative identified in the Fresno to Bakersfield Section Final EIR/EIS would severely impact the City's ability to utilize existing city assets, including its corporation yard, senior housing, and parking facilities at the Rabobank Arena, Theater and Convention Center; would render unusable one of the city's premier health facilities; and would affect the Bakersfield Commons project, a retail/commercial/residential development.

In a Settlement Agreement signed December 19, 2014, between the City of Bakersfield and the Authority, the two agencies agreed to work together to develop and study a Fresno to Bakersfield Locally Generated Alternative (F-B LGA) to address Bakersfield's concerns and meet the Authority's design requirements. The F-B LGA described and analyzed in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS evolved from this mutual cooperation and subsequent public input. The Authority has also collaborated with the City of Shafter and Kern County in developing the F-B LGA.

The Authority and the FRA prepared the Draft Supplemental EIR/EIS in accordance with CEQA and National Environmental Policy Act to reflect those elements of the Fresno to Bakersfield Section project that have evolved, most notably through the development of the F-B LGA as a new alternative. The Authority determined that preparation of a Supplemental EIR was appropriate in order to evaluate the F-B LGA where "only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation." (CEQA Guidelines, Section 15163[a].) Accordingly, the Draft Supplemental EIR/EIS was prepared to supplement the Fresno to Bakersfield Section Final EIR/EIS for purposes of evaluating the F-B LGA. The Draft Supplemental EIR/EIS was circulated for public review and comment from November 9, 2017, through January 16, 2018.

For purposes of understanding the potential impacts of the F-B LGA, the Draft Supplemental EIR/EIS compares the F-B LGA to the complementary portion of the Preferred Alternative that was identified in the Fresno to Bakersfield Section Final EIR/EIS. That portion, identified as the May 2014 Project in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS, consists of the portion of the BNSF Alternative from Poplar Avenue to Hageman Road and the Bakersfield Hybrid Alternative from Hageman Road to Oswell Street. The May 2014 Project included a station that would be constructed at the corner of Truxtun and Union Avenues/State Route (SR) 204 as well as a maintenance of infrastructure facility (MOIF) that would be located along the May 2014 Project alignment between Riverside Street and Orange Street in Shafter.

The Authority has prepared a Final Supplemental EIR in accordance with CEQA. The Final Supplemental EIS and Supplemental Record of Decision are expected to be published subsequently. The Final Supplemental EIR constitutes the second part of the Final Supplemental EIR for the Fresno to Bakersfield Section and is intended to be a companion to the Draft Supplemental EIR/EIS. The Draft Supplemental EIR/EIS for the Fresno to Bakersfield Section constitutes the first part of the Final Supplemental EIR and is hereby incorporated by reference and bound separately. The Draft Supplemental EIR/EIS includes a detailed description of the project and detailed impact analysis across numerous resource areas. The Final Supplemental EIR does not replicate the detailed analysis of the Draft Supplemental EIR/EIS, but rather includes a revised summary, comments and additions to the Draft Supplemental EIR/EIS, a list of comments received on the Draft Supplemental EIR/EIS, and responses to those comments.²

² In many cases these Findings of Fact and Statement of Overriding Considerations refer to underlying detailed impact analyses and accordingly include a reference to a page or section of the Draft Supplemental

The Authority has concluded that recirculation of the Draft Supplemental EIR is not required here. (CEQA Guidelines, Section 15088.5.)

2.1.2 Description of the Preferred Alternative – Fresno to Bakersfield Locally Generated Alternative

As shown in Figures 2 and 3, the Fresno to Bakersfield Preferred Alternative from just north of Poplar Avenue in Kern County south to the intersection of 34th Street and L Street including the F Street Station, as described in the Final Supplemental EIR, is the F-B LGA (herein referenced as the Preferred Alternative). The Preferred Alternative Station would be located at the intersection of F Street/SR 204 (Figure 4) and would be designed per the *High-Speed Train (HST) Station Area Development: General Principals and Guidelines* (Authority 2008).

The Preferred Alternative does not include a preferred heavy maintenance facility (HMF) site. The Authority, along with the FRA, anticipate considering the HMF sites evaluated in the Merced to Fresno Final EIR/EIS along with the five HMF sites evaluated in the Fresno to Bakersfield Final EIR/EIS prior to making the determination on one or more preferred sites, and prior to making a final HMF decision. The impacts of an HMF are, therefore not addressed further in these Findings.

2.1.3 Impact Avoidance and Minimization Measures

The Authority has developed impact avoidance and minimization measures, in consultation with appropriate agencies to meet the CEQA requirements. The Preferred Alternative incorporates avoidance and minimization measures and Best Management Practices (BMP) identified in the Final Supplemental EIR and described in detail in a series of technical reports that accompany the environmental document. As a result of applying these measures, the Preferred Alternative will avoid potential adverse environmental impacts in several resource areas, including electromagnetic interference/electromagnetic fields, public utilities and energy, geology and soils, hazardous materials and wastes; and station planning, land use, and development. In addition, the Preferred Alternative's compliance with the regulatory requirements, including permitting and coordination with regulatory agencies for many project-related activities, provide additional assurance that potential adverse environmental impacts will not occur. Representative agencies include the United States (U.S.) Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), and the U.S. Environmental Protection Agency (USEPA) with jurisdiction under the Federal Endangered Species Act and the Clean Water Act, respectively. Like the mitigation measures described in Technical Appendix 2-G of the Final Supplemental EIR, the avoidance and minimization measures and compliance with regulatory requirements are a condition of project approval and must be implemented by the Authority during design, construction, and operation of the Preferred Alternative through its own actions, those of its contractors, and actions taken in cooperation with other agencies and entities.

EIR/EIS. Such cross-references to the Draft Supplemental EIR/EIS are intended to also incorporate any modifications to the Draft Supplemental EIR/EIS that are made in the Final Supplemental EIR.

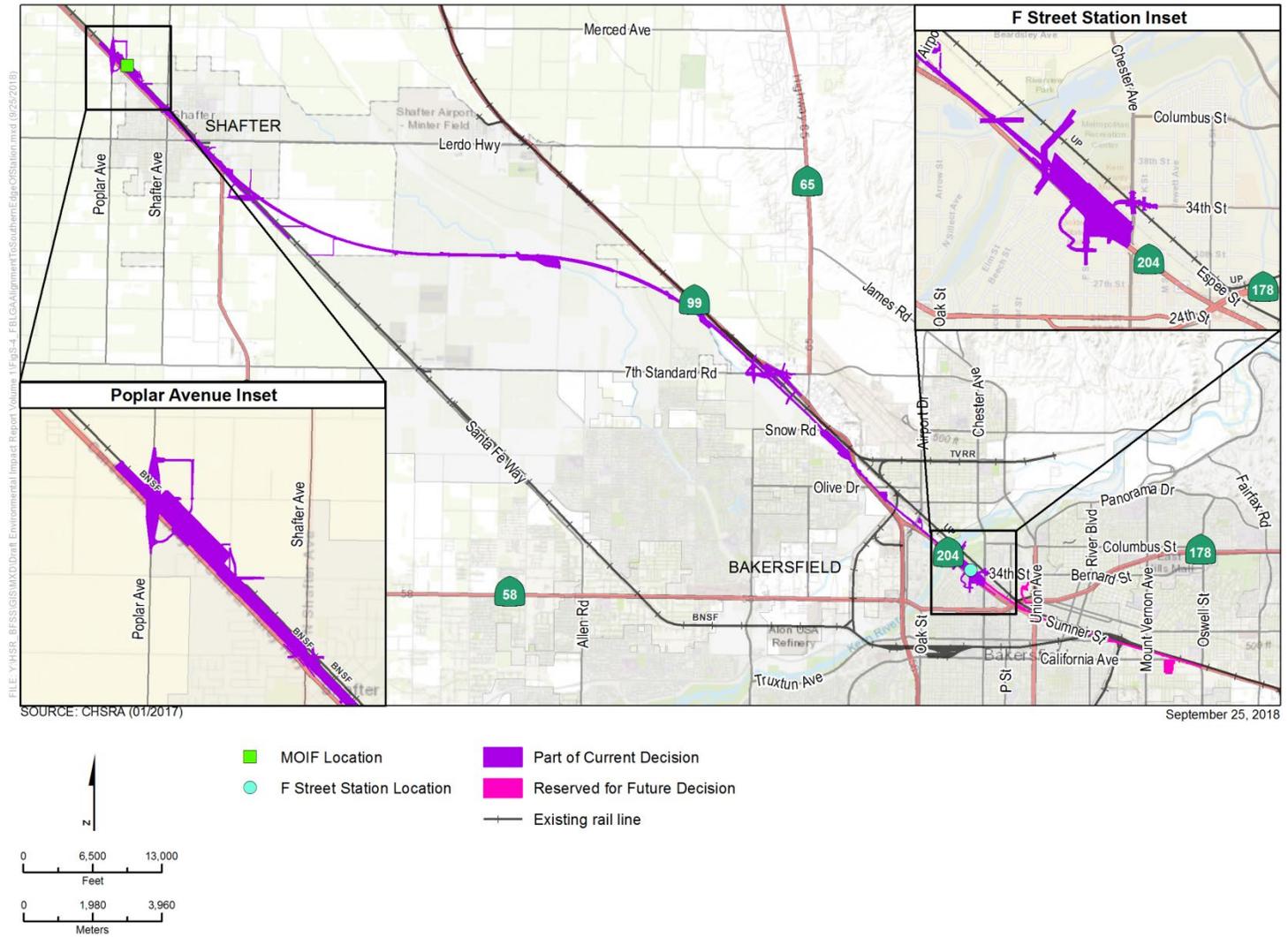
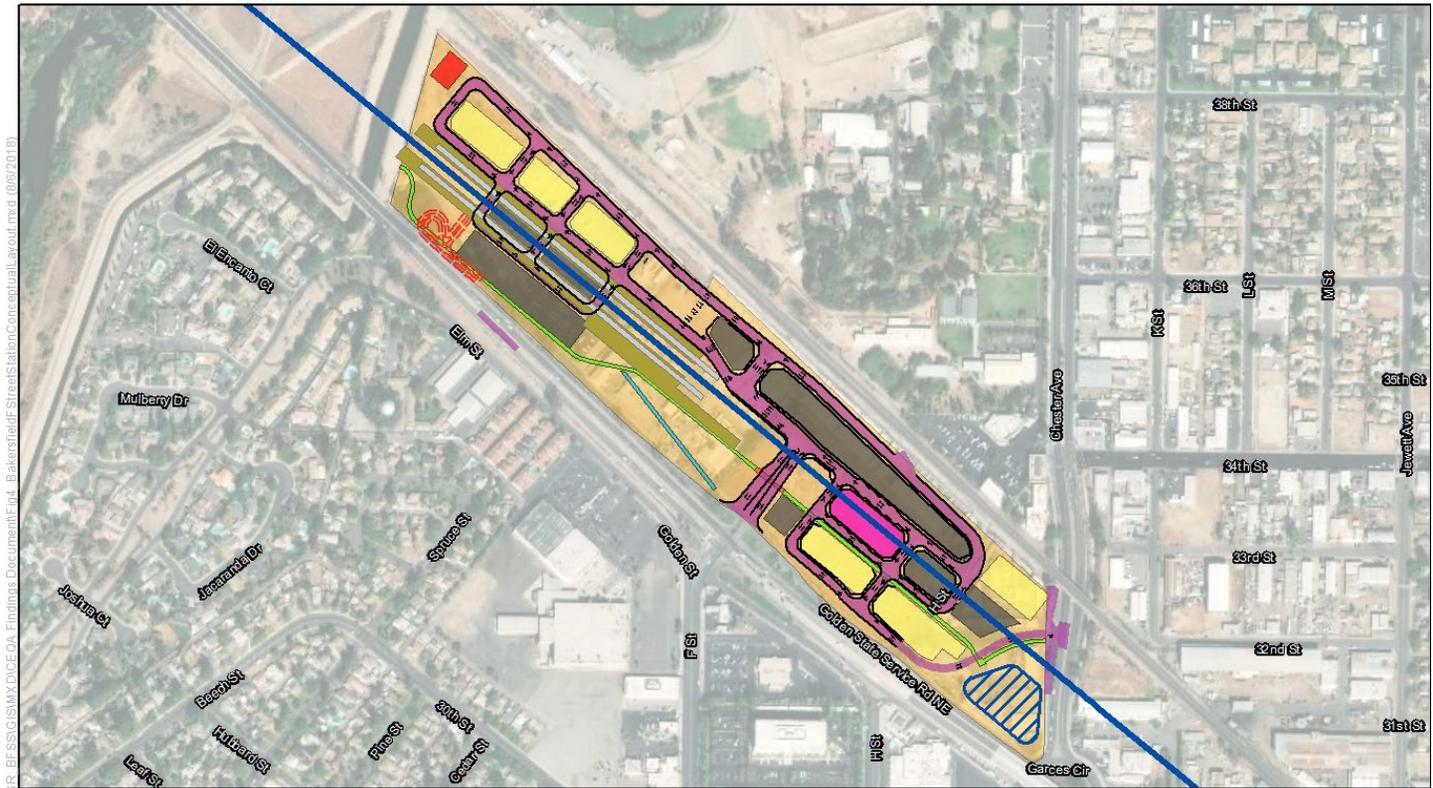


Figure 3 Preferred Alternative and Associated Features

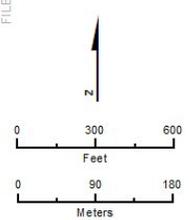
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FILE: Y:\HSR_BFSS\GIS\MXD\CEQA_Findings Document\CEQA_Bakersfield Street Station Conceptual Layout.mxd (8/6/2018)

SOURCE: CHSRA (01/2017); NAIP (06/2016)

August 6, 2018



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| <p>Preferred Alternative</p> <ul style="list-style-type: none"> — Elevated Structure F Street Station Footprint F Street Station Roadways | <p>F Street Station Buildings and Structures</p> <ul style="list-style-type: none"> Landscaped Stormwater Retention Area Platform Station Area ADA Accessible Path Bike/Pedestrian Bridge | <ul style="list-style-type: none"> Bike/Pedestrian Path Emergency Vehicle Access Surface Parking Area Parking Structure Area Emergency Generator Transit Center |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Figure 4 Bakersfield F Street Station

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The applicable regulatory requirements and impact avoidance and minimization measures that are considered a part of the Preferred Alternative are described for the following issue areas in more detail in the corresponding chapters of the Draft Supplemental EIR/EIS and are also listed in Appendix 2-H of the Draft Supplemental EIR/EIS:

- Transportation – Sections 3.2.1 and 3.2.5
- Air Quality and Global Climate Change – Sections 3.3.1 and 3.3.7
- Noise and Vibration – Sections 3.4.1 and 3.4.5
- Electromagnetic Fields and Electromagnetic Interference – Sections 3.5.1 and 3.5.5
- Public Utilities and Energy – Sections 3.6.1 and 3.6.5
- Biological Resources and Wetlands – Sections 3.7.1 and 3.7.5
- Hydrology and Water Resources – Sections 3.8.1 and 3.8.5
- Geology, Soils, Seismicity, and Paleontological Resources – Sections 3.9.1 and 3.9.5
- Hazardous Materials and Wastes – Sections 3.10.1 and 3.10.5
- Safety and Security – Sections 3.11.1 and 3.11.5
- Socioeconomics and Communities – Sections 3.12.1 and 3.12.5
- Station Planning, Land Use, and Development – Sections 3.13.1 and 3.13.5
- Agricultural Lands – Sections 3.14.1 and 3.14.5
- Parks, Recreation, and Open Space – Sections 3.15.1 and 3.15.5
- Aesthetics and Visual Resources – Sections 3.16.1 and 3.16.5
- Cultural Resources – Sections 3.17.1 and 3.17.5
- Regional Growth – Section 3.18.1
- Cumulative Impacts – Section 3.19.1

These impact avoidance and minimization measures are an enforceable component of the project and their implementation will be monitored and reported on in conjunction with project monitoring.

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3 FINDINGS ON SPECIFIC IMPACTS AND MITIGATION MEASURES

The environmental effects of the Preferred Alternative and the F Street Station location (Figure 2) that would be potentially significant are described in Chapter 3 of Volume 1 of the Draft Supplemental EIR/EIS, as augmented by the Final Supplemental EIR (as described in footnote 2 above). These impacts are set forth and summarized below for the Preferred Alternative, along with mitigation measures the Authority adopts, that will avoid or substantially lessen those potentially significant or significant impacts. The impact and mitigation measure findings below depend upon and therefore incorporate by reference the full analysis and conclusions contained within the Final Supplemental EIR (which incorporates the Draft Supplemental EIR/EIS).

Also set forth in these Findings are those impacts that the Authority finds cannot with certainty be avoided or reduced to a less-than-significant level even with the adoption of all feasible mitigation measures proposed in the Draft Supplemental EIR/EIS. In adopting these Findings and mitigation measures, the Authority also adopts a Statement of Overriding Considerations. The Statement of Overriding Considerations describes the economic, social, and other benefits of the Preferred Alternative that will render these significant unavoidable environmental impacts acceptable.

The Authority is not required to make findings or adopt mitigation measures or policies as part of this decision for impacts that are less than significant or beneficial. The resource areas that include one or more, less-than-significant impacts without mitigation, or beneficial impacts, include:

- Transportation
- Air Quality and Global Climate Change
- Noise and Vibration
- Electromagnetic Fields and Electromagnetic Interference*
- Public Utilities and Energy*
- Hydrology and Water Resources
- Geology, Soils, Seismicity, and Paleontological Resources
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics and Communities
- Station Planning, Land Use, and Development*
- Agricultural Lands
- Parks, Recreation, and Open Space
- Aesthetics and Visual Resources
- Cultural Resources
- Regional Growth*
- Cumulative Impacts

Resource areas for which all impacts in the Draft Supplemental EIR/EIS were identified as less than significant without mitigation or beneficial are designated by an asterisk (*) and are not discussed further in this Findings document.

3.1 Transportation (Section 3.2 in the Draft Supplemental EIR/EIS)

As described in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS, transportation impacts associated with construction of the Preferred Alternative and F Street Station (i.e., the impacts will end when construction ends) will be less than significant (Draft Supplemental EIR/EIS Section 3.2 Transportation Impact TR #1, Impact TR #5, Impact TR #7, Impact TR #8, and Impact TR #9). This conclusion is supported, in part, by the Impact Avoidance and Minimization Measures that the Authority has incorporated into the Preferred Alternative, consistent with and in furtherance of the Fresno to Bakersfield Section Final EIR/EIS commitments. In adopting the resolution of approval of the Preferred Alternative, the Authority

confirms that the Impact Avoidance and Minimization Measures identified in the Draft Supplemental EIR/EIS are applicable.

For operational impacts (i.e., impacts that are permanent due to re-direction of existing traffic because of permanent network road changes required by the Preferred Alternative and impacts that are permanent due to traffic generated at the F Street Station), all impacts will be reduced to less-than-significant levels with the implementation of mitigation.

3.1.1 Impact TR # 11: Changes in Vehicle Movements and Flow on Highways and Roadways

The Preferred Alternative would result in crossing over or shifting existing roads and road closures along the alignment to accommodate the HSR alignment. Specifically, the road modifications and closures would result in increased volume-to-capacity ratios at roadway segments and worsening level of service and/or delay at affected intersections in the City of Shafter and Kern County. (Impacts on the local roadway network due to the F Street Station are discussed under Impact TR #13 below.) Traffic operations associated with these roadway and intersection modifications would have a significant impact.

(a) ROADWAY SEGMENT IMPACTS OF THE PREFERRED ALTERNATIVE

Roadway segment analysis of AM and PM peak hours used the traffic impact criteria described in Section 3.2.2.6 of the Draft Supplemental EIR/EIS. Roadway segment scenarios are evaluated and compared for Existing Conditions, Future No Project (year 2035), and Future with Project (year 2035). Because the significance criteria focuses on roadways that are predicted to operate at level of service (LOS) E and F under project conditions, or are already operating at LOS E and F under pre-project conditions, only the roadways that meet those criteria were evaluated. All other roadways are and would continue to operate at LOS D or better under project conditions, are not significantly impacted, do not require mitigation, and were not evaluated. All roadways evaluated are included in the Fresno to Bakersfield Section: Transportation Technical Report (Authority and FRA 2017a).

An impact is considered significant for roadway segments that result in an increase in the volume to capacity ratio of 0.04 or more with project-related traffic if operating without project-related traffic at LOS E or F. An impact is also considered significant under CEQA if the addition of project-related traffic results in a reduction in LOS below LOS D. Because traffic on these roadway segments listed below would experience an unacceptable increase in traffic under one of the two above criteria, the impact would be significant.

(b) INTERSECTION IMPACTS OF THE PREFERRED ALTERNATIVE

An impact is considered a significant impact under CEQA if:

- For intersections (signalized and unsignalized), the addition of project-related traffic results in a reduction in LOS below D;
- For signalized intersections that are projected to operate at LOS E or F under baseline conditions, the addition of project-related traffic increases average delay at an intersection by 4 seconds or more;
- For unsignalized intersections projected to operate at LOS E or F under baseline conditions, the addition of project-related traffic increases delay by 5 seconds or more (measured as average delay for all-way stop and for worst movement for a multi-way stop intersection), and if the intersection satisfies one or more traffic signal warrants for more than one hour of the day.

With the addition of project-related roadway network infrastructure modifications, the study intersections included in Table 1 would experience a decrease in operational functionality that could violate one of the criteria above. The following mitigation measures for the significantly impacted intersections listed in Table 1 would be effective by providing improvements to mitigate impacted signalized and unsignalized intersections by returning the intersection to LOS D (if the intersection was operating at LOS D or better pre-project) or to the pre-project condition (if the

intersection was operating at LOS E or F pre-project). Impacts associated with reduction in signalized and unsignalized intersection LOS will be reduced to a less-than-significant impact with implementation of the following measures:

TR-MM #3: Add Signal to Intersection to Improve LOS/Operation. Add traffic signals to affected non-signalized intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.

TR-MM #8: Add New Lanes to Roadway. Add additional roadway lanes to improve LOS and intersection operations.

TR-MM #9: Restripe Roadway Segment. Restripe specific roadway segments in the vicinity of the proposed HSR station locations to improve LOS and roadway segment operation.

TR-MM #10: Convert Intersection Stop Control. Convert intersection stop-control from a two-way stop to an all-way stop.

Table 1 Mitigation Measures for Intersection Impacts in the City of Shafter and Kern County

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
26 – SR 43/Ash Avenue	TR MM #8: Add new lanes to roadway. Add additional roadway lanes to improve LOS and intersection operation. TR MM #9: Restripe roadway segment. Restripe specific roadway segments in the vicinity of the proposed HSR station locations to improve LOS and roadway segment operation.	Table 3.2-21 Intersections Future (2035) Plus Project Levels of Service Summary – City of Shafter	Add a two-way left-turn lane on SR 43.
32 – Beech Avenue/Riverside Street	TR MM #10: Convert intersection stop control. Convert intersection stop-control from a two-way stop to an all-way stop.	Table 3.2-21 Intersections Future (2035) Plus Project Levels of Service Summary – City of Shafter	Convert to all-way stop control.
13 – Dole Court/Snow Road	TR MM #10: Convert intersection stop control. Convert intersection stop-control from a two-way stop to an all-way stop.	Table 3.2-23 Intersections Future (2035) Plus Project Levels of Service Summary – Kern County	Convert to all-way stop control.
14 – Norris Road/Snow Road	TR MM #3: Add signal to intersection to improve LOS/operation. Add traffic signals to affected non-signalized intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.	Table 3.2-23 Intersections Future (2035) Plus Project Levels of Service Summary – Kern County	Install a traffic signal at the intersection.

The study roadway segment included in Table 4 would experience a decrease in operational functionality that could violate one of the criteria above. The following mitigation measure for the significantly impacted roadway segments listed below would be effective by providing improvements to mitigate impacted roadway segments by returning the roadway to LOS D (if the roadway segment was operating at LOS D or better pre-project) or to the pre-project condition (if the roadway segment was operating at LOS E or F pre-project). Impacts associated with reduction in roadway segment LOS will be reduced to a less-than-significant impact with implementation of TR-MM #8.

Table 2 Mitigation Measures for Roadway Segment Impacts in the City of Shafter and Kern County

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
41 – Central Valley Highway (SR 43), north of E Los Angeles Avenue	TR-MM#8: SR 43 north of E. Los Angeles Avenue: Widen SR 43 from 2 to 4 lanes.	Table 3.2-18 Future (2035) Plus F-B LGA Roadway Segment Analysis – City of Shafter	Widen the roadway to provide one additional lane in each direction prior to Bakersfield Station opening.

Impacts associated with roadway segment and intersection improvements surrounding the Preferred Alternative will be reduced to a less-than-significant impact with Mitigation Measures TR-MM #3, TR-MM #8, TR-MM #9, and TR-MM #10. The Authority finds that Mitigation Measures TR-MM #3, TR-MM #8, TR-MM #9, and TR-MM #10 have been required in the project and that implementation of these mitigation measures will reduce the traffic operations impacts of the project at roadway segments and intersections in the City of Shafter and Kern County to less than significant.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in Section 8-A-2 in Technical Appendix 8-A of the Draft Supplemental EIR/EIS.

3.1.2 Impact TR # 13: Impacts on the Local Roadway Network due to Station Activity Existing Plus Project Conditions and Future (2035) Plus Project Conditions

For traffic congestion operational impacts³ (i.e., impacts that are permanent due to re-direction of existing traffic because of network road changes required by the alignment construction and impacts that are permanent due to traffic generated at the F Street Station operation for HSR), as described in Section 3.2.2.2 of the Draft Supplemental EIR/EIS, the traffic analysis was performed using a dual baseline approach. In accordance with CEQA requirements, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project. Those conditions, in turn, “will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant” (CEQA Guidelines §15125[a]). The HSR would not commence operations before approximately year 2025 and would not reach full operation before approximately year 2035; therefore, use of only existing conditions as a baseline for traffic LOS would be misleading. Background traffic conditions can reasonably be expected to

³ SB 743 (2013) required changes to the CEQA Guidelines to include alternative direction to the traditional LOS/delay metric for evaluating transportation impacts. “Upon certification of the guidelines..., automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment [under CEQA], except in locations specifically identified in the guidelines, if any.” Because the Guidelines are not in effect yet, the Authority makes these Findings related to LOS/delay but does not waive the benefit of SB 743 and the amended Guidelines once they become operative.

change over time between now and years 2025/2035. For this reason, the LOS traffic analysis uses a dual baseline approach and compares LOS traffic impacts for all intersections and roadway segments against both existing conditions and background (i.e., No Project) conditions as they are expected to be in year 2035. A detailed description of the baseline operational analysis is included in Section 3.2.3.2 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a, pages 3.2-6 through 3.2-8).

For a project like the HSR project that will take years from alignment construction start to full HSR station operation, the dual baseline analysis framework is useful. By combining the analytics of the two approaches (see Fresno to Bakersfield Section: Transportation Analysis Technical Report [Authority and FRA 2014b] and Fresno to Bakersfield: Transportation Technical Report [Authority and FRA 2017a]) incorporated herein by reference, one can distinguish traffic impacts that could occur (a) in the near term due to alignment construction only (which can create impacts due to permanent re-direction of existing traffic due to permanent re-configuration of the existing street network) from (b) impacts that will not occur until the future due to background cumulative traffic growth coupled with HSR station traffic from (c) impacts that might occur at the same intersection at both points in time. With these distinctions, mitigation measures can be selected from the appropriate baseline scenario and assigned to each affected intersection and segment along with the required mitigation timing based on when the impact will occur. Mitigation for (a) impacts described above would be based on the Existing Plus Project baseline and would be required concurrent with alignment construction. Mitigation for (b) impacts described above would be based on the Future [2035] Plus Project baseline and would be required prior to the associated station opening. Mitigation for (c) impacts described above would be based on the both baselines, and would be required concurrent with alignment construction (e.g., adding a signal) then again prior to the associated station opening (e.g., adding turn lanes to the now-signalized intersection). This is detailed in the tables that follow and also in the Mitigation Monitoring and Reporting Program that accompanies these Findings.

The combining analytical effort mentioned in the preceding paragraph resolved and normalized an inherent limitation of the dual baseline approach for a project like HSR that could cause near-term impacts from one part (alignment construction) and future impacts from another part (station operation). The inherent limitation of the existing-plus-project approach is that it assumes that the HSR station (with all of its associated vehicle traffic) becomes fully operational at maximum ridership effectively overnight, when that event will not occur until 2035; it also ignores that background traffic will grow and the roadway network will change based on programmed and funded regional transportation plan (RTP) projects. It therefore presents a hypothetical scenario. See the Fresno to Bakersfield Section Final EIR/EIS pages 3.2-6 to 3.2-8. The inherent limitation of the Future [2035]-plus-project approach is that it can mask that portion of the HSR project (i.e., alignment construction that will permanently re-direct existing traffic) that would occur in the very near term which could cause traffic impacts. By combining the analytics of the two approaches, the Authority resolved these inherent limitations. That effort involved additional sensitivity modeling, based on the existing dual-baseline information, to determine which intersections and segments would be impacted by construction of the alignment alone and which intersections and segments would be impacted by construction of the alignment plus HSR station traffic. These Findings and associated Mitigation Monitoring and Reporting Program reflect the product of that work and require only the mitigation that is necessary to mitigate the actual impacts when they occur and when from which aspect of the project.

With the addition of the HSR project-generated traffic and the addition of project-related roadway network infrastructure modifications, the study intersections included in Table 3 would experience a decrease in operational functionality that could violate one of the criteria above. The following mitigation measures for the significantly impacted intersections listed below would be effective by providing improvements to mitigate impacted signalized and unsignalized intersections by returning the intersection to LOS D (if the intersection was operating at LOS D or better pre-project) or to the pre-project condition (if the intersection was operating at LOS E or F pre-project). Impacts associated with reduction in signalized and unsignalized intersection LOS will be

reduced to a less-than-significant impact with implementation of the following mitigation measures:

TR MM #3: Add Signal to Intersection to Improve LOS/Operation. Details regarding TR-MM #3 are described above.

TR MM #4: Restripe Intersections. Restripe specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.

TR MM #5: Revise Signal Cycle Length. Revise signal cycle length at specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation in consultation with the local appropriate jurisdictions.

TR MM #6: Widen Approaches to Intersections. Widen approaches to allow for additional turning or through-lanes to improve LOS and intersection operation.

TR MM #7: Add Exclusive Turn Lanes to Intersections. Add exclusive turn lanes at specific intersections to improve LOS and intersection operation.

TR MM #8: Add New Lanes to Roadway. Details regarding TR-MM #8 are described above.

TR MM #9: Restripe Roadway Segment. Details regarding TR-MM #9 are described above.

TR-MM #10: Convert Intersection Stop Control. Details regarding TR-MM #10 are described above.

Table 3 Mitigation Measures for Intersection Impacts Near the Bakersfield F Street Station

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
7- Mohawk Street/Hageman Road	TR MM #3: Add signal to intersection to improve LOS/operation. Add traffic signals to affected non-signalized intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.	Table 3.2-28 Existing Plus Project F-B LGA Bakersfield Station Area Intersection Analysis Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service	Install a traffic signal at the intersection.
8 – Mohawk Street/Rosedale Highway	TR MM #4: Restripe intersections. Restripe specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.	Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service	Add a second westbound left-turn lane. This improvement already exists but is currently closed due to construction activity at the intersection.
12 – SR 99 Southbound Ramps/Olive Drive	TR MM #3: Add signal to intersection to improve LOS/operation. Add traffic signals to affected non-signalized intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.	Table 3.2-28 Existing Plus Project F-B LGA Bakersfield Station Area Intersection Analysis	Install a traffic signal at the intersection.

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
22 – Oak Street/Rosedale Highway-24th Street	<p>TR MM #6: Widen approaches to intersections. Widen approaches to allow for additional turning or through-lanes to improve LOS and intersection operation.</p> <p>TR MM #7: Add exclusive turn lanes to intersections. Add exclusive turn lanes at specific intersections to improve LOS and intersection operation.</p>	<p>Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service</p>	<p>Widen the eastbound approach to provide one exclusive left-turn lane, three exclusive through lanes, and one exclusive right-turn lane.</p>
26 – Oak Street/Truxtun Avenue	<p>TR MM #5: Revise signal cycle length. Revise signal cycle length at specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation in consultation with the local appropriate jurisdiction.</p>	<p>Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service</p>	<p>Re-time the signal in the a.m. and p.m. peak hours.</p>
36 – F Street/24th Street	<p>TR MM #5: Revise signal cycle length. Revise signal cycle length at specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation in consultation with the local appropriate jurisdiction.</p>	<p>Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service</p>	<p>Re-time the signal in the p.m. peak hour.</p>

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
37 – F Street/23rd Street	<p>TR MM #5: Revise signal cycle length. Revise signal cycle length at specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation in consultation with the local appropriate jurisdiction.</p> <p>TR MM #6: Widen approaches to intersections. Widen approaches to allow for additional turning or through-lanes to improve LOS and intersection operation.</p> <p>TR MM #7: Add exclusive turn lanes to intersections. Add exclusive turn lanes at specific intersections to improve LOS and intersection operation.</p> <p>TR MM #8: Add new lanes to roadway. Add additional roadway lanes to improve LOS and intersection operation.</p>	<p>Table 3.2-28 Existing Plus Project F-B LGA Bakersfield Station Area Intersection Analysis</p> <p>Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service</p>	<p>Widen the eastbound approach to provide one exclusive left-turn lane, two exclusive through lanes, and one shared through/right-turn lane.</p> <p>Re-time the signal in the a.m. and p.m. peak hours.</p>
60 – M Street/SR 204/28th Street	<p>TR MM #6: Widen approaches to intersections. Widen approaches to allow for additional turning or through-lanes to improve LOS and intersection operation.</p> <p>TR MM #7: Add exclusive turn lanes to intersections. Add exclusive turn lanes at specific intersections to improve LOS and intersection operation.</p>	<p>Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service</p>	<p>Widen the northbound approach to provide an exclusive left-turn lane and shared through/right-turn lane at the intersection.</p>

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
89 – Union Avenue/California Avenue	TR MM #5: Revise signal cycle length. Revise signal cycle length at specific intersections surrounding the proposed HSR station locations to improve LOS and intersection operation in consultation with the local appropriate jurisdiction.	Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service	Re-time the signal in the p.m. peak hour.
101 – Beale Avenue/Jefferson Street-SR 178 Westbound Ramps	TR MM #3: Add signal to intersection to improve LOS/operation. Add traffic signals to affected non-signalized intersections surrounding the proposed HSR station locations to improve LOS and intersection operation.	Table 3.2-29 Future (2035) Plus Project F-B LGA Bakersfield Station Area Intersection Levels of Service	Install a traffic signal at the intersection.

With the addition of the HSR project-generated traffic and the addition of project-related roadway network infrastructure modifications, the study roadway segments included in Table 4 would experience a decrease in operational functionality that could violate one of the criteria above. The following mitigation measure for the significantly impacted roadway segments listed below would be effective by providing improvements to mitigate impacted roadway segments by returning the roadway to LOS D (if the roadway segment was operating at LOS D or better pre-project) or to the pre-project condition (if the roadway segment was operating at LOS E or F pre-project). Impacts associated with reduction in roadway segment LOS will be reduced to a less-than-significant impact with implementation of TR-MM #9.

Table 4 Mitigation Measures for Roadway Segment Impacts Near the Bakersfield F Street Station

Location Affected	Mitigation Measure(s)	Draft Supplemental EIR/EIS Table	Specific Actions Recommended
3 – F Street, between 30th Street and 24th Street	TR MM #9: Restripe roadway segment. Restripe specific roadway segments in the vicinity of the proposed HSR station locations to improve LOS and roadway segment operation.	Table 3.2-27 Future (2035) Plus Project F-B LGA Bakersfield Station Area Roadway Segment Analysis	Convert center two-way left-turn lane to a dedicated northbound through lane.
64 – 30th Street between F Street and H Street	TR MM #9: Restripe roadway segment. Restripe specific roadway segments in the vicinity of the proposed HSR station locations to improve LOS and roadway segment operation.	Table 3.2-26 Existing Plus Project F-B LGA Bakersfield Station Area Roadway Segment Analysis Table 3.2-27 Future (2035) Plus Project F-B LGA Bakersfield Station Area Roadway Segment Analysis	Eliminate on-street parking to convert 30th Street from 2-lane Collector to 4-Lane Collector.

Mitigation Measures TR-MM #3 through TR-MM #5 generally would involve little to no physical disturbance that could cause any impacts. Modifying signal phasing and revising signal cycle length is done electronically to the existing signals. Restriping intersections generally involves painting existing pavement. Adding signals to existing intersections generally would be done within the existing pavement or disturbed graded right-of-way. For these reasons, impacts from these mitigation measures would be less than significant.

Impacts may occur as a result of implementing Mitigation Measures TR-MM #6 and TR-MM #7; the locations of these Mitigation Measures are listed in Table 3. The development footprint mitigation measures to be implemented were overlaid over the existing inventory of agricultural, biological, geological, historical and cultural, recreation, and public utility resources, and over the socioeconomic and hazardous material data used for analysis in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS to ensure that the potential impacts have been adequately analyzed. No significant impacts were determined to occur as a result of the construction and implementation of the mitigation measures described above.

The Authority finds that Mitigation Measures TR-MM #3 through TR-MM #10 have been required in the project and that implementation of these mitigation measures will reduce the intersection and roadway segment impacts associated with the Preferred Alternative to less than significant.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in Section 8-A-2 in Technical Appendix 8-A of the Draft Supplemental EIR/EIS.

3.2 Air Quality and Global Climate Change (Section 3.3 in the Draft Supplemental EIR/EIS)

Once operational, the Preferred Alternative would have a beneficial effect on air quality and greenhouse gas (GHG) emissions (See Impacts AQ #10 and AQ #11 in Section 3.3 of the Fresno to Bakersfield Section Draft Supplemental EIR/EIS). Although construction of the Preferred Alternative would result in air quality impacts, with implementation of the mitigation measures

required for the Preferred Alternative, each of these impacts would be reduced to less-than-significant levels. Further assuring that the Preferred Alternative's air quality and GHG impacts will not be significant are the Impact Avoidance and Minimization Measures, which are consistent with and in furtherance of the Fresno to Bakersfield Section Final EIR/EIS commitments. In adopting the resolution of approval of the Preferred Alternative, the Authority confirms that the Project Design Features identified in the Fresno to Bakersfield Section Final EIR/EIS are part of the Preferred Alternative.

3.2.1 Impact AQ # 1: Regional Air Quality Impacts during Construction

Direct emissions from the construction phase of the Preferred Alternative would exceed the general conformity (GC) applicability thresholds for volatile organic compound (VOC) and nitrogen dioxide (NO_x) in certain calendar years in which construction would occur (see Table 3.3-9 in Section 3.3 of the Draft Supplemental EIR/EIS). Purchase of offset emissions through a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD) (Mitigation Measure AQ-MM #4) for VOC and NO_x would offset and reduce VOC and NO_x emissions to below the GC applicability thresholds. Construction emissions would exceed the mass emission SJVAPCD CEQA thresholds for VOC, carbon monoxide (CO), NO_x, particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}) in some construction years. Therefore, construction emissions of these pollutants may cause significant impacts on air quality under CEQA. There is no mass emission CEQA threshold for SO₂ from SJVAPCD; however, sulfur dioxide (SO₂) emissions are expected to be less than significant based on the emission results as shown in Table 3.3-9 of Section 3.3 of the Draft Supplemental EIR/EIS. To reduce impacts to less than significant under CEQA, the following mitigation measures would be implemented for the Preferred Alternative:

AQ-MM #1: Reduce Criteria Exhaust Emissions from Construction Equipment. This mitigation measure applies to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix for the current calendar year, as set forth in California Air Resources Board's OFFROAD 2011 database and no less than a 40% reduction compared to a tier 2 engine standard for NO_x emissions. The Authority will require the contractor to document efforts it undertook to locate newer equipment (such as, in order of priority, Tier 4, Tier 3, or Tier 2 equipment) and/or tailpipe retrofit equivalents. The Authority will require the contractor to provide documentation to the Authority of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required California Air Resources Board (CARB) or SJVAPCD operating permit will be made available at the time of mobilization of each piece of equipment. The Authority will require the contractor to keep a written record (supported by equipment hours meters where available) of equipment usage during project construction for each piece of equipment.

AQ-MM #2: Reduce Criteria Exhaust Emission from On-Road Construction Equipment. This mitigation measure applies to all on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material-hauling trucks will consist of an average fleet mix of equipment model year 2010, or newer, but no less than the average fleet mix for the current calendar year as set forth in CARB's EMFAC 2011 database. The Authority will require the contractor will provide documentation of efforts to secure such a fleet mix. The Authority will require the contractor to keep a written record of equipment usage during project construction for each piece of equipment.

AQ-MM #4: Offset Project Construction Emissions through an SJVAPCD Voluntary Emission Reduction Agreement. This mitigation measure would address Impact AQ #1 (Common Regional Air Quality Impacts During Construction) that would exceed the GC applicability and CEQA emissions thresholds for VOC and NO_x, and the CEQA emission thresholds for PM₁₀ and PM_{2.5}. The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero for all construction years the project's actual

emissions from construction equipment and vehicle exhaust emissions of VOC, NO_x, PM₁₀, and PM_{2.5}. The agreement will provide funds for the district's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, with preference given to highly impacted communities, thus offsetting project-related impacts on air quality. Projects funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase will be provided at the beginning of the construction phase if feasible. At a minimum, funding shall be provided so that mitigation/offsets will occur in the year of impact, or as otherwise permitted by 40 C.F.R. Part 93 Section 93.163.

With onsite mitigation (i.e., AQ-MM #1 and #2), VOC, CO, NO_x, PM₁₀, and PM_{2.5} impacts would be reduced, but could remain significant under CEQA. As stated in SJVAPCD's 2015 Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a), purchase of offset emissions through a VERA with the SJVAPCD (Mitigation Measure AQ-MM #4) for these pollutants would reduce impacts to less than significant after mitigation under CEQA.

Mitigation Measure AQ-MM #1 addresses criteria exhaust emissions from construction equipment. The methodologies used to reduce emissions may result in increased fuel or energy consumption associated with emissions control equipment. The change in fuel consumption would likely be small on a per-equipment basis; however, given the number of equipment pieces and the construction duration, the total fuel consumption would result in a moderate increase in volume, but still a small percentage of the total volume. If aftermarket control devices are used, such as diesel particulate filters, additional waste would be generated associated with the disposal of spent filters. These additional increases would be small in comparison to the scope of the project. Therefore, the impacts of mitigation would be less than significant under CEQA.

Implementation of Mitigation Measure AQ-MM #2 would have no impacts.

Mitigation Measure AQ-MM #4 would require offset project construction emissions through an SJVAPCD VERA agreement. The methodologies used to reduce emissions may result in increased fuel or energy consumption associated with emissions control equipment. However, it is also possible that fuel and energy consumption may decrease. The change in fuel consumption would likely be small on a per-equipment basis. If aftermarket control devices are used, such as diesel particulate filters, additional waste would be generated associated with disposal of spent filters. In comparison to the scope of the project, these additional increases would be small. Therefore, the impacts of mitigation would be less than significant under CEQA.

The Authority finds that Mitigation Measures AQ-MM #1, AQ-MM #2, and AQ-MM #4 have been required in the Preferred Alternative and that implementation of these mitigation measures will reduce the Preferred Alternative's construction VOC, NO_x, PM₁₀, and PM_{2.5} impacts to less-than-significant levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.2.2 Impact AQ #2: Compliance with Air Quality Plans

Emissions from construction of the Preferred Alternative would be temporary. However, based on the amount of construction to be completed, construction activities would involve heavy-duty construction equipment and would have the potential to cause adverse air quality impacts.

As shown in Table 3.3-9 of Section 3.3 of the Draft Supplemental EIR/EIS, VOC, CO, and NO_x emissions associated with the Preferred Alternative (when considered in conjunction with the portion of the 2014 Preferred Alternative north of Poplar Avenue) would exceed the GC applicability thresholds, while PM₁₀ and PM_{2.5} emissions would be below the GC applicability thresholds. Emissions above the mass emission thresholds set by the SJVAPCD would have the potential to conflict with or obstruct implementation of the SJVAPCD's air quality plans, which have been prepared to attain federal and state ambient air quality standards. VOC, CO, NO_x,

PM₁₀, and PM_{2.5} emissions would exceed the mass emission SJVAPCD thresholds and impede the implementation of the respective air quality plans, including plans prepared to attain federal ambient air quality standards.

VOC, NO_x, PM₁₀, and PM_{2.5} emissions associated with the Preferred Alternative (when considered in conjunction with the portion of the 2014 Preferred Alternative north of Poplar Avenue) would be greater than applicable mass emission CEQA significance thresholds, which would impede or obstruct implementation of the 8-hour SJVAPCD 2007 Ozone Plan, or the 2013 Plan for the Revoked 1-hour Ozone Standard, the 2007 PM₁₀ Maintenance Plan, and the 2015 PM_{2.5} Plan. Therefore, this impact would be significant under CEQA for VOC, NO_x, PM₁₀, and PM_{2.5} emissions. The following measures mitigate this impact:

AQ-MM #1: Reduce Criteria Exhaust Emissions from Construction Equipment. Details regarding AQ-MM #1 are described above.

AQ-MM #2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment. Details regarding AQ-MM #2 are described above.

AQ-MM #4: Offset Project Construction Emissions through an SJVAPCD VERA. Details regarding AQ-MM #4 are described above.

Implementation of these mitigation measures is not expected to result in secondary impacts.

With onsite mitigation (i.e., AQ-MM#1 and #2), VOC, CO, NO_x, PM₁₀, and PM_{2.5} impacts would be reduced, but could remain significant under CEQA. As stated in SJVAPCD 2015 Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015a), purchase of offset emissions through VERA with the SJVAPCD (Mitigation Measure AQ-MM#4) for these pollutants would reduce impacts to less than significant after mitigation under CEQA.

The Authority finds that Mitigation Measures AQ-MM#1, AQ-MM#2 and AQ-MM#4 have been required in the Preferred Alternative and that implementation of these mitigation measures will reduce the Preferred Alternative's construction VOC, CO, NO_x, PM₁₀, and PM_{2.5} impacts to less-than-significant levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.2.3 Impact AQ #3: Material-Hauling Emissions Outside of San Joaquin Valley Air Basin

As described in Section 3.3.6.3 of the Fresno to Bakersfield Section Final EIR/EIS (Authority and FRA 2014a: page 3.3-52), emissions associated with transportation of ballast materials from outside the San Joaquin Valley Air Basin (SJVAB) to the border of the air basin were evaluated for five hauling scenarios from five quarries.

The emission results demonstrated that worst-case emissions would be above the GC thresholds for NO_x (25.18 tons per year of NO_x) in the South Coast Air Basin for four of the five scenarios analyzed; in the Salton Sea Air Basin (35.76 tons per year of NO_x) for one of the five scenarios analyzed; and in the Mojave Desert Air Basin (27.20 tons per year of NO_x) for one of the five scenarios analyzed. The emissions of NO_x in the other air basins (Sacramento Valley Air Basin and San Francisco Bay Area Air Basin) would be below the GC thresholds for all scenarios. The emissions for all other pollutants would be below the GC thresholds for all scenarios in all air basins.

Under the Preferred Alternative (when considered in conjunction with the portion of the 2014 Preferred Alternative north of Poplar Avenue), emissions associated with material hauling would exceed the CEQA thresholds for NO_x for all scenarios in multiple air quality management districts or air pollution control districts. All other pollutants for these scenarios would be below the CEQA thresholds.

Under CEQA, the material-hauling emissions outside the SJVAB could exceed the South Coast Air Quality Management District (AQMD) (which includes both the South Coast Air Basin and Salton Sea Air Basin) CEQA NO_x thresholds in all five scenarios, and could exceed the Bay Area AQMD's CEQA NO_x thresholds for two of the scenarios. The material-hauling emissions could also exceed the Mojave Desert AQMD NO_x CEQA threshold for two of the scenarios. Therefore, NO_x emissions could have a significant impact in the South Coast AQMD, Bay Area AQMD, and Mojave Desert AQMD. Material-hauling emissions would be below the CEQA thresholds for all other air districts and pollutants, and would have insignificant impacts. Exceeding or contributing to an exceedance of the NO_x air quality standards applicable in those air basins, or contributing substantially to an existing or projected NO_x air quality violation in those other air basins would be considered a significant impact. The following measures mitigate this impact:

AQ-MM #2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment. Details regarding AQ-MM #2 are described above.

AQ-MM #5: Purchase Offsets and Offsite Emission Mitigation for Emissions Associated with Hauling Ballast Material in Certain Air Districts. This mitigation measure will apply if ballast material is hauled from quarries outside the San Joaquin Valley Air Basin (SJVAB) and the hauling activities result in the exceedance of applicable annual General Conformity (GC) threshold(s) or local air basin CEQA threshold(s) for NO_x. To determine whether an exceedance will occur based on actual hauling activities, the Authority shall at the beginning of each calendar year, or as soon as practicable thereafter, (1) obtain the most up-to-date information based on actual or projected contractor-specific information about hauling in the Mojave Desert Air Quality Management District (AQMD), South Coast AQMD, and Bay Area AQMD; and (2) calculate the expected NO_x emissions from hauling activities in those districts using the same methodology used in the Draft Supplemental Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The analysis methodology shall specify the location, the year in which the emissions would be released, and the quantity of emissions. If, based on that calculation, exceedance of the applicable NO_x threshold(s) is anticipated to occur in that next calendar year, the Authority will secure from the appropriate air district(s) or other appropriate source the production or generation of a sufficient quantity of NO_x offsets for that calendar year necessary to achieve conformity (in the case of exceedance of GC thresholds) and/or to offset NO_x emissions below the applicable CEQA threshold(s). At a minimum, mitigation/offsets will occur in the year of impact, or as otherwise permitted by Code of Federal Regulations (C.F.R.) Title 40, Part 93, Section 93.163.

The Mojave Desert AQMD's emission bank has 3,274 tons of NO_x credits (Mojave Desert AQMD 2016); therefore, there should be enough NO_x credits to offset approximately 6 tons per year from this project in the Mojave Desert Air Basin. The exact number of NO_x credits in the South Coast AQMD RECLAIM program is unknown, but 810.5 tons of NO_x credits were traded in 2015 and 43.3 tons of NO_x credits were traded in 2012 (South Coast AQMD 2016). Therefore, there should be enough available NO_x credits in the program to offset approximately 75 tons of NO_x per year from this project in the South Coast AQMD.

In the Bay Area AQMD, any material emissions above the district's significance threshold will be mitigated through an off-site emission mitigation program to achieve emission reduction due to material hauling in the Bay Area AQMD. Potential off-site mitigation programs include the Bay Area AQMD's Carl Moyer Memorial Air Quality Standards Attainment Program or other air district emission reduction incentive programs. Depending on the final location selected to obtain ballast material, this would amount to a maximum of 3 tons per year of NO_x credits.

Implementation of these mitigation measures is not expected to result in secondary impacts. Implementation of Mitigation Measure AQ-MM#2 would have no secondary impacts. Mitigation Measure AQ-MM#5 would require the purchase of offset and off-site emission mitigation for emissions associated with hauling ballast material. This mitigation measure would have no impacts.

The Authority finds that Mitigation Measures AQ-MM #2 and AQ-MM #5 have been required in the Preferred Alternative and that implementation of these mitigation measures will reduce the project's potential regional air quality impact related to material hauling outside the SJVAB to less-than-significant levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.2.4 Impact AQ #8: Localized Air Quality Impacts from Concrete Batch Plans

The emissions generated from operation of concrete batch plants, as related to regional emissions impacts, were included in the calculations for Impacts AQ #1 and #2.

Batch plant operation also could have localized/micro impacts. The concrete batch plants would be located along the alignment. According to Cal/EPA and CARB's Air Quality and Land Use Handbook: A Community Health Perspective (Cal-EPA and CARB 2005), emission impacts at receptors would be greatly reduced by locating a facility 1,000 feet from sensitive receptors. The air dispersion modeling and health risk analysis for fugitive dust emissions and their associated TAC constituents indicated that excess cancer risks and non-cancer health impacts would not exceed the applicable thresholds, but emissions may contribute to further exacerbation of exceedances of PM₁₀ and PM_{2.5} standards for micro-scale (i.e., localized) dust impacts to health. Based on the air dispersion modeling conducted for the concrete batch plants associated with the HSR project, the localized air quality impacts from concrete batch plants would be significant under CEQA to sensitive receptors within 1,000 feet of the batch plant. After mitigation, emissions would not substantially contribute to further exceedances of PM₁₀ and PM_{2.5} standards (see AQ-MM #3) because modeling shows that a receptor outside of 1,000 feet from the batch plant would not be exposed to concentration levels that exceed these micro-scale thresholds. The following measure mitigates this impact:

AQ-MM #3: Reduce the Potential Impact of Concrete Batch Plants. Concrete batch plants would be sited at least 1,000 feet from sensitive receptors, including daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The concrete batch plant will utilize typical control measures to reduce fugitive dust, such as water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central dust collection systems and other suitable technology, to reduce emissions to be equivalent to the USEPA AP-42 controlled emission factors for concrete batch plants.

Mitigation Measure AQ-MM #3 would reduce the localized air impact to sensitive receptors to a less-than-significant level by ensuring concrete batch plants are sited at least 1,000 feet from sensitive receptors. AQ-MM #3 would also require the utilization of typical control measures to reduce fugitive dust, which would reduce the PM₁₀ and PM_{2.5} concentrations as they relate to the National Ambient Air Quality Standards and California Ambient Air Quality Standards, to a less-than-significant level under CEQA.

Implementation of this mitigation measure is not expected to result in secondary impacts. Mitigation Measure AQ-MM #3 would reduce potential impacts from concrete batch plants. The control measures utilized at the batch plant may increase water usage and energy consumption and may generate additional waste from consumables used by the control devices. These impacts would be minor in comparison to the project operations as a whole. Therefore, the impacts of mitigation would be less than significant under CEQA.

The Authority finds that Mitigation Measure AQ-MM #3 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce the project's air quality impacts associated with the exposure of sensitive receptors to temporary substantial pollutant concentrations from the concrete batch plants required for project construction to less-than-significant levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.3 Noise and Vibration (Section 3.4 in the Draft Supplemental EIR/EIS)

Both construction and operation of the Preferred Alternative would result in noise and vibration impacts along the alignment and from the station facilities.

3.3.1 Impact N&V #1: Construction Noise

The Draft Supplemental EIR/EIS estimated the screening distances for construction noise impact using the Federal Transit Administration (FTA) construction impact noise methodology and criteria (See Table 3.4-1 in the Draft Supplemental EIR/EIS), and estimates of typical equipment noise for rail construction (See Table 3.4-9 in the Draft Supplemental EIR/EIS). The analysis assumed that construction noise reduces by 6 dB for each doubling of distance from the center of the site. For residential land use, the potential for temporary construction noise impact would be limited to locations within approximately 156 feet of the alignment (without pile driving). However, without pile driving the potential for noise impact from nighttime construction could extend to residences as far as 493 feet. If pile driving is required and is conducted simultaneously with other construction, the potential for temporary construction noise impact would be limited to locations within approximately 316 feet of the alignment. With pile driving the potential for noise impact from nighttime construction could extend to residences as far as 998 feet.

The exposure of persons or generation of noise levels in excess of standards for a severe impact established by the FTA is considered a significant impact. The standards cover temporary/periodic increases in ambient noise levels above existing levels. For residences within 156 feet of the alignment during the day, or within 493 feet during nighttime, construction impacts would be a significant impact. With pile driving, for residences within 316 feet of the alignment during the day, or within 998 feet during nighttime, construction impacts would be a significant impact. Accordingly, construction noise impacts from the project would be significant under CEQA. The following measure mitigates this impact:

N&V-MM #1: Construction Noise Mitigation Measures. During construction the contractor will monitor construction noise to verify compliance with the noise limits shown in Table 3.4-1 of the Final EIR/EIS. The contractor would be given the flexibility to meet the FRA construction noise limits in the most efficient and cost-effective manner. This would be done by either prohibiting certain noise-generating activities during nighttime hours or providing additional noise control measures to meet the noise limits. A noise-monitoring program will be developed to meet required noise limits, and the following noise control mitigation measures will be implemented as necessary, for nighttime and daytime:

- Install a temporary construction barrier near the noise source.
- Avoid nighttime construction in residential neighborhoods
- Locate stationary construction equipment as far as possible from noise-sensitive sites.
- Re-route construction traffic along roadways that will cause the least disturbance to residents.
- During nighttime work, use smart backup alarms, which automatically adjust the alarm levels based on the background noise level, or switch off back-up alarms and replace with spotters.
- Use low-noise emission equipment.
- Implement noise-deadening measures for truck loading and operations.
- Monitor and maintain equipment to meet noise limits.
- Line or cover storage bins, conveyors, and chutes with sound-deadening material.
- Use acoustic enclosures, shields, or shrouds for equipment and facilities.
- Use high-grade engine exhaust silencers and engine-casing sound insulation.

- Prohibit aboveground jackhammering and impact pile driving during nighttime hours.
- Minimize the use of generators to power equipment.
- Limit use of public address systems.
- Grade surface irregularities on construction sites
- Use moveable sound barriers at the source of the construction activity
- Limit or avoid certain noisy activities during nighttime hours.
- To mitigate noise related to pile driving, the use of an auger to install the piles instead of a pile driver would reduce noise levels substantially. If pile driving is necessary, limit the time of day that the activity can occur.
- CHSRA will establish and maintain in operation until completion of construction a toll-free “hotline” regarding the Section construction activities. CHSRA shall arrange for all incoming messages to be logged (with summaries of the contents of each message) and for a designated representative of CHSRA to respond to hotline messages within 24 hours (excluding weekends and holidays). CHSRA shall make a reasonable good faith effort to address all concerns and answer all questions, and shall include on the log its responses to all callers. CHSRA shall make a log of the in-coming messages and CHSRA’s responsive actions publicly available on its website.

Secondary impacts from these construction noise mitigation measures, including impacts on existing visual quality and construction light and glare, are discussed in Section 3.16 Aesthetics and Visual Resources of the Draft Supplemental EIR/EIS. None of the mitigation measures would result in secondary impacts.

Noise impacts would occur during construction activities and would cease after construction is complete. The Authority finds that Mitigation Measure N&V-MM #1 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce construction noise below the FTA construction noise limits; therefore, this impact would be reduced to a less-than-significant impact.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.3.2 Impact N&V #2: Construction Vibration

The exposure of persons or generation of excessive ground-borne vibration or ground-borne noise levels above the levels in Table 3.4-2 of the Draft Supplemental EIR/EIS is considered a significant impact. There is a potential for severe vibration impacts with receivers present within vibration criterion-level contours (See Table 3.4-24 of the Draft Supplemental EIR/EIS) during construction associated with pile driving and therefore construction vibration impacts would be a significant impact under CEQA. The following measure mitigates this impact:

N&V-MM #2: Construction Vibration Mitigation Measures. Building damage from construction vibration is only anticipated from impact pile driving at very close distances to buildings. If pile driving occurs more than 77 feet from fragile or historic buildings, 55 feet from residential structures, or if alternative methods such as push piling, auger piling, or cast-in-drill-hole can be used, damage from construction vibration is not expected to occur. Other sources of construction vibration do not generate high enough vibration levels for damage to occur. When a construction scenario has been established, preconstruction surveys are conducted at locations within 50 feet of pile driving to document the existing condition of buildings in case damage is reported during or after construction. The Authority will arrange for the repair of damaged buildings or will pay compensation to the property owner.

Implementation of this mitigation measure is not expected to result in secondary impacts. Although vibration impacts would occur during construction activities, the construction activities are considered temporary as they would cease after completion.

The Authority finds that Mitigation Measure N&V-MM #2 has been required in the Preferred Alternative and that implementation of this mitigation measure would reduce the project's construction vibration impacts to less-than-significant levels under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project. It should be noted that the language for Mitigation Measure N&V-MM #2 has been edited slightly to conform with the Preferred Alternative; therefore, while the finding would be consistent for the May 2014 Project, Mitigation Measure N&V-MM #2 for the May 2014 Project would be consistent with the text documented on Page 3.4-56 of the Fresno to Bakersfield Section Final EIR/EIS.

3.3.3 Impact N&V #3: Moderate and Severe Noise Impacts from Project Operation to Sensitive Receptors

The Draft Supplemental EIR/EIS assessed noise impacts from operation of the HSR on noise-sensitive land uses by comparing existing, measured noise levels with future noise levels predicted for the project. The future noise levels with HSR were developed following the FRA Guidance manual, as described in Section 3.4 of the Draft Supplemental EIR/EIS and as further documented in the F-B LGA Noise and Vibration Technical Report (Authority and FRA 2017b).

The exposure of persons or generation of noise levels in excess of standards for a severe impact established by the FRA for high-speed ground transportation and the FTA for transit projects (See Figure 3.4-1 of the Draft Supplemental EIR/EIS) is considered a significant impact. These standards cover both permanent and temporary/periodic increases in ambient noise levels in the project vicinity above levels existing without the project. In locations with sensitive receptors where train speeds and operations are high, severe noise impacts would be a significant impact. As shown in Table 3.4-20 of the Draft Supplemental EIR/EIS, the Preferred Alternative would result in significant impacts from operations at approximately 4,752 noise sensitive receptors, prior to mitigation. This is a significant impact under CEQA. The following measures mitigate this impact:

N&V-MM #3: Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines. To determine the appropriate mitigation measures for properties experiencing severe noise impacts, noise mitigation guidelines would be applied as follows:

- Prior to operation of the HSR, the Authority will install sound barriers where they can achieve between 5 and 15 A-weighted decibel (dBA) of noise reduction, depending on their height and location relative to the tracks. The primary requirements for an effective sound barrier are that the barrier must (1) be high enough and long enough to break the line-of-sight between the sound source and the receiver, (2) be of an impervious material with a minimum surface density of 4 pounds per square foot, and (3) not have any gaps or holes between the panels or at the bottom. Because many materials meet these requirements, aesthetics, durability, cost, and maintenance considerations usually determine the selection of materials for sound barriers (examples are shown in Figure 3.4-14 of the Final EIR/EIS; diagrams and placement information can be found in Volume III Section H: Record Set PEPD Design Submission Sound Barrier Plans of the Final Supplemental EIR). Depending on the situation, sound barriers can become visually intrusive. Typically, the sound barriers style is selected with input from the local jurisdiction to reduce the visual effect of barriers on adjacent lands uses. For example, sound barriers could be solid or transparent, and made of various colors, materials, and surface treatments.
- The minimum number of affected sites should be at least 10, and the length of a sound barrier should be at least 800 feet. The maximum sound barrier height would be 14 feet for at-grade sections; however, all sound barriers would be designed to be as low as possible to achieve a substantial noise reduction. Berm and berm/wall combinations are the preferred types of sound barriers where space and other environmental constraints permit. On aerial structures, the maximum sound barrier height would also be 14 feet, but

barrier material would be limited by engineering weight restrictions for barriers on the structure. Sound barriers on the aerial structure will still be designed to be as low as possible to achieve a substantial noise reduction. Sound barriers on both aerial structures and at-grade structures could consist of solid, semitransparent, or transparent materials.

- The Authority will work with the communities to identify how the use and height of sound barriers would be determined using jointly developed performance criteria. Other solutions may result in higher numbers of residual impacts than reported herein. Options may be to reduce the height of sound barriers and combine barriers with sound insulation or to accept higher noise thresholds than the FRA's current noise thresholds.
- If sound walls are not proposed or do not reduce sound levels to below a severe impact level, building sound insulation can be installed. Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction is a mitigation measure that can be provided when the use of sound barriers is not feasible in providing a reasonable level (5 to 7 dBA) of noise reduction. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where sound barriers are not feasible or desirable and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to windows, by sealing holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air conditioning so that windows do not need to be opened. Performance criteria would be established to balance existing noise events and ambient roadway noise conditions as factors for determining mitigation measures.
- If sound walls or sound installation is not effective, the Authority can acquire easements on properties severely affected by noise. Another option for mitigating noise impacts is for the authority to acquire easements on residences likely to be impacted by HSR operations in which the homeowners would accept the future noise conditions. This approach is usually taken only in isolated cases where other mitigation options are infeasible, impractical, or too costly.

Table 3.4-27 of the Draft Supplemental EIR/EIS shows the reasonableness of each feasible noise barrier. Of the six noise barriers evaluated, all noise barriers were determined to be feasible and reasonable because the barrier would provide a noise level reduction of 5 dBA or more and the cost to construct the barriers would not exceed \$55,000 per benefited receiver. Table 3.4-27 also shows the height, approximate length, number of benefited receivers, total construction cost, the number of unmitigated severe impacts, and number of residual impacts (with mitigation) for each barrier height. Table 3.4-28 shows the breakdown of residual severe impacts based on each land use in each category. Figure 3.4-7 through Figure 3.4-10 show the noise barrier locations.

A total of 31 receivers that would be severely impacted were not evaluated with a noise barrier because they are located in areas that do not meet the minimum number of 10 severely impacted receivers and a minimum barrier length of 800 feet. The 31 receivers consist of 28 residential land uses, 1 park, 1 Category 2 land use (which includes uses where people normally sleep such as a hotel), and 1 Category 3 land use (which include uses that are used primarily during the daytime). Therefore, these receivers would be eligible for either sound insulation or payment of property for noise easements.

N&V-MM #4: Vehicle Noise Specification. In the procurement of an HSR vehicle technology, the Authority will require bidders to meet the federal regulations (40 C.F.R. Part 201.12/13) at the time of procurement for locomotives (currently a 90-dBA-level standard), for cars operating at speeds of greater than 45 mph. Depending on the available technology, this could significantly reduce the number of impacts throughout the corridor.

N&V-MM #5: Special Track Work. Because the impacts of HSR wheels over rail gaps at turnouts increases HSR noise by approximately 6 dBA over typical operations, turnouts can be a major source of noise impact. If the turnouts cannot be moved from sensitive areas, the project can use special types of track work that eliminate the gap.

Table 3.4-29 provides additional mitigation measures that would reduce operational vibration levels when the train, railway, and railway structures are already in good condition. As shown in Table 3.4-29 mitigation would take place at the source, sensitive receptor, or along the propagation path from the source to the sensitive receptors. If mitigation measures provided in Table 3.4-29 are not feasible, the Authority would attempt to negotiate a vibration easement with property owners or the Authority would negotiate to relocate the property owner outside of the area subject to significant vibration impacts.

N&V-MM #6: Additional Noise and Vibration Analysis Following Final Design. If final design or final vehicle specifications result in changes to the assumptions underlying the noise and vibration analysis (including analysis regarding resident and business displacements), reassess noise and vibration impacts and recommendations for mitigation and provide supplemental environmental documentation, as required by law.

Traffic Noise Impacts. Several single-family homes will be subject to traffic peak-hour noise levels in excess of 66 dBA equivalent sound level. These noise levels would exceed the Caltrans Noise Abatement Criteria and potentially require the preparation of Noise Study Reports and noise abatement measures. In determining the reasonableness of abatement, FHWA highway traffic noise regulation requires, among other factors, the feasibility of the noise mitigation measure as well as the consideration of the viewpoints of the affected residents and property owners. Feasibility generally deals with considering whether it is possible to build an abatement measure, given site constraints; and whether the abatement measure provides a minimum reduction in noise levels. Feasibility also requires that all of the homes potentially affected face the roadway from which the noise emanates. As a result, noise mitigation measures would be infeasible for any home with a driveway for which access must be maintained. The noise barrier would not be continuous, and subsequently would not provide the minimum 5 dBA of noise reduction. A noise abatement measure is not feasible unless the measure achieves a noise reduction of at least 5 dBA for front-row receivers. Highway noise barriers are designed to protect areas of “frequent human use,” which generally do not include the front yards of homes. Also, Caltrans does not generally put noise barriers across the front yards of homes because they are acoustically infeasible and because most homeowners wish to maintain the views from the fronts of their homes.

Secondary impacts from sound walls including visual intrusion and view blockage are discussed in Section 3.16, Aesthetics and Visual Resources, of the Draft Supplemental EIR/EIS. None of the mitigation measures would result in secondary impacts.

Not all impacted receivers may receive noise mitigation that would reduce their impacts below the levels shown in Figure 3.4-1 of the Draft Supplemental EIR/EIS. Further, there is uncertainty about the effectiveness of mitigation measures because of the important role that local jurisdictions and communities will play in determining the use of sound barriers. Therefore, operational noise impacts from the HSR are significant and unavoidable.

The Authority finds that Mitigation Measures N&V-MM #3, N&V-MM #4, N&V-MM #5, and N&V-MM #6 have been required in the Preferred Alternative and that they will mitigate or avoid some, but not all, of the project’s significant noise impacts to sensitive noise receptors. The Authority finds that there are no other feasible mitigation measures or alternatives that could be adopted to reduce these remaining impacts to less-than-significant levels. The Authority finds that despite these otherwise significant and unavoidable impacts, specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.3.4 Impact N&V #5: Impacts from Project Vibration

The Preferred Alternative would result in vibration impacts associated with the rail corridor operation. Because the Preferred Alternative would expose persons to or generate excessive

ground-borne vibration, this would be a significant impact under CEQA. The following measure mitigates this impact:

N&V-MM #5: Special Track Work. Because the impacts of HSR wheels over rail gaps at turnouts increases HSR noise by approximately 6 dBA over typical operations, turnouts can be a major source of noise impact. If the turnouts cannot be moved from sensitive areas, the project can use special types of track work that eliminate the gap.

Table 5 below provides additional mitigation measures that would reduce operational vibration levels when the train, railway, and railway structures are already in good condition. As shown in Table 5, mitigation would take place at the source, sensitive receptor, or along the propagation path from the source to the sensitive receptors. If mitigation measures provided in Table 5 are not feasible, the Authority would attempt to negotiate a vibration easement with property owners or the Authority would negotiate to relocate the property owner outside of the area subject to significant vibration impacts.

Table 5 Potential Vibration Mitigation Procedures and Descriptions

Mitigation Procedure	Location of Mitigation	Description
Maintenance	Source	Rail condition monitoring systems with rail grinding on a regular basis. Wheel truing to re-contour the wheel, provide a smooth running surface, and remove wheel flats. Reconditioning vehicles. Installing wheel condition monitoring systems.
Location and Design of Special Trackwork	Source	Careful review of crossover and turnout locations during the preliminary engineering stage. When feasible, relocate special trackwork to a less vibration-sensitive area. Installation of spring frogs eliminates gaps at crossovers and helps reduce vibration levels.
Vehicle Suspension	Source	Rail vehicles should have a low unsprung weight, soft primary suspension, minimum metal-on-metal contact between the moving parts of the truck, and smooth wheels that are perfectly round.
Special Track Support Systems	Source	Floating slabs, resiliently supported ties, high-resilience fasteners, resilient subroadbed materials, and ballast mats all help reduce vibration levels from the track support system.
Building Modifications	Receiver	For existing buildings, if vibration-sensitive equipment is affected by train vibration, the floor upon which the vibration-sensitive equipment is located could be stiffened and isolated from the remainder of the building. For new buildings, the building foundation should be supported by elastomer pads that are similar to bridge bearing pads.
Trenches	Along Vibration Propagation Path	A trench can be an effective vibration barrier if it changes the propagation characteristics of the soil. It can be open or solid. Open trenches can be filled with Styrofoam. Solid barriers can be constructed with sheet piling, rows of drilled shafts filled with either concrete or a mixture of soil and lime, or concrete poured into a trench.
Operational Changes	Source	Reduce vehicle speed. Adjust nighttime schedules to minimize train movements during sensitive hours. Operating restrictions require continuous monitoring and may not be practical.
Buffer Zones	Receiver	Negotiate a vibration easement from the affected property owners or expand the rail right-of-way.

Mitigation Measure N&V-MM #5 would require special types of track work to eliminate gaps that would reduce noise levels generated from rail turnouts and reduce vibration levels resulting from HSR operation. This measure would be conducted within the HSR rail right-of-way and staging areas. The increase in noise and vibration would be minimal to negligible in comparison to the scope of the project. Therefore, the impacts of mitigation would be less than significant under CEQA.

The Authority finds that Mitigation Measure N&V-MM #5 has been required in the Preferred Alternative and that implementation of this mitigation measure would reduce the project's operation vibration impacts to less-than-significant levels.

Mitigation Measure N&V-MM #5 would not be required of the May 2014 Project, because sensitive receivers that would experience vibration impacts if left in place under the May 2014 Project would be displaced. Therefore, no finding would be required for Impact N&V #5 of the May 2014 Project.

3.3.5 Impact N&V #7: Noise from HSR Stationary Facilities

Long-term noise impacts associated with operation of the F Street Station, the MOIF and the TPSS would result in a significant impact under CEQA. The following measure mitigates this impact:

N&V-MM #7: Station, Maintenance of Infrastructure Facility and Traction Power Supply Station. In order to reduce the noise from the facilities, the following noise mitigation measures are recommended:

- Enclose as many of the activities within the facility as possible.
- Eliminate windows in the building that would face toward noise sensitive land uses adjacent to the facility. If windows are required to be located on the side of the facility facing noise-sensitive land uses, they should be the fixed type of windows with a sound transmission class rating of at least 35. If the windows must be operable, they should be closed during nighttime activities.
- Close facility doors where the rails enter the facility during nighttime activities.
- Locate Tracks that cannot be located within the maintenance facility should be located on the far side of the facility from adjacent noise-sensitive receivers.
- For tracks that cannot be installed away from noise-sensitive receivers, install sound barrier along the tracks in order to protect the adjacent noise-sensitive receivers.
- Locate all mechanical equipment (compressors, pumps, generators, etc.) should be located within the facility structure.
- Locate any mechanical equipment located exterior to the facility (compressors, pumps, generators, etc.) should be located on the far side of the facility from adjacent noise-sensitive receivers. If this is not possible, this equipment should be located within noise enclosures to mitigate the noise during operation.
- Point all ventilation ducting for the facility should be pointed away from the adjacent noise-sensitive receivers.

Mitigation Measure N&V-MM #7 would reduce noise levels generated from long-term operations of stationary facilities associated with the Preferred Alternative. These measures would not expand the project boundary, and the increase in noise would be minimal to negligible in comparison to the scope of the project. Therefore, the impacts of mitigation would be less than significant under CEQA.

The Authority finds that Mitigation Measure N&V-MM #7 has been required in the Preferred Alternative and that implementation of this mitigation measure would reduce the project's long-term stationary source noise impacts to less-than-significant levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4 Biological Resources (Section 3.7 in the Draft Supplemental EIR/EIS)

These Findings address impacts associated with the Preferred Alternative. Section 3.7 of the Draft Supplemental EIR/EIS describes impacts as either construction period, which examines temporary impacts, or project period, which examines permanent impacts. This categorization is carried through in these Findings.

3.4.1 Impact BIO #1: Effects on Special-Status Plant Species

Up to 16 special-status plant species have the potential to occur in and immediately adjacent to the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by construction period activities. Table 3.7-3 of the Draft Supplemental EIR/EIS presents the potential for occurrence of special-status species based on the presence of suitable habitat, the range of the species, and the proximity of known occurrences of the species.

In addition to the species that have been observed within the Special-Status Plant Study Area, special-status plant species have the potential to occur in areas of suitable habitat in parcels that have not been surveyed. These species include federally and/or state-listed species and species listed by the California Native Plant Society, all of which are considered rare in California (CEQA Guidelines, §15380). If these species occur in the construction footprint, they would be subject to the same adverse effects as those described below for species known to occur.

Direct (BIO #1) Impacts During Construction Period

Direct impacts from construction may result from permanent ground-disturbing activities, including construction of the track, access roads, road crossings, and buildings such as the traction power station that may directly impact individuals or populations of special-status plant species. These impacts may result largely from the use of heavy machinery to clear, grub, excavate, compact, or otherwise prepare the ground surface for the construction of permanent features. The construction of these features may result in the removal, destruction, covering, or unearthing of individuals, populations, or suitable habitat of the identified special-status species.

Indirect (BIO #1) Impacts During Construction Period

Indirect impacts on special-status plant species and native plant species would potentially include erosion, siltation, and runoff into natural and constructed watercourses; soil and water contamination from construction equipment leaks; construction dust affecting plants by reducing their photosynthetic capability (especially during flowering periods); and an increased risk of fire (e.g., construction equipment use and smoking by construction workers) in adjacent open spaces.

The direct and indirect impacts on special-status plant species and habitats suitable for special-status plant species during construction are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #1 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Management Plan.

BIO-MM #5: Prepare and Implement a Biological Resource Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM #9: Equipment Staging Areas.

BIO-MM #11: Vehicle Traffic.

BIO-MM #13: Work Stoppage.

BIO-MM #14 "Take" Notification and Reporting.

BIO-MM #15: Post-Construction Compliance Reports.

BIO-MM #16: Conduct Protocol-Level Pre-Construction Surveys for Special-Status Plant Species and Special Status Plan Communities.

BIO-MM #17: Prepare and Implement Plan for Salvage, Relocation and/or Propagation of Special Status Plant Species.

BIO-MM #47: Restore Temporary Riparian Impacts.

BIO-MM #53: Compensate for Impacts on Special-Status Plant Species.

BIO-MM #61: Compensate for Permanent Riparian Impacts.

BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.

BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.

The Authority will avoid and minimize impacts to special-status plant species from construction activities where feasible. General avoidance/minimization measures will be implemented in order to track mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects to reduce impacts on special-status plant species (BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist and Project Biological Monitor(s); BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program).

Measure BIO-MM #4 (Prepare and Implement a Weed Control Plan and Annual Vegetation Management Plan) will minimize or avoid the spread of noxious and invasive weeds during construction, and BIO-MM #6 (Prepare and Implement a Restoration and Revegetation Plan) will restore temporarily disturbed uplands following construction activities.

During final design, the Mitigation Manager, or its designee (Project Biologist, Regulatory Specialist (Waters), Project Botanist) will prepare and implement BIO-MM #5 (Prepare and Implement a Biological Resources Management Plan) which will help the long-term perpetuation of biological resources within the temporarily disturbed areas, as well as protect adjacent targeted habitats. The Project Biologist, Regulatory Specialist (Waters), and Project Botanist will also delineate ESAs and environmentally restricted areas (ERA) (BIO-MM #7) prior to the start of ground-disturbing activities, including special-status plant populations to protect these areas from impacts during construction. Additional avoidance measures to be implemented prior to construction avoid impacts to special-status plant species (see BIO-MM #9 Equipment Staging Areas and BIO-MM #11: Vehicle Traffic). Agency personnel may visit the site to ensure compliance with avoidance/minimization measures (BIO-MM #2: Regulatory Agency Access). In the event of an accidental removal or injury to a federal or state-listed plant species, the Contractor's employees will be required to notify U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) and identify any corrective measures to aid in preventing future impacts (BIO-MM #14: "Take" Notification and Reporting). Post-construction compliance reports consistent with agency protocols to document compliance with these measures will be submitted at regular intervals (BIO-MM #15: Post-Construction Compliance Reports).

To avoid and minimize impacts on special-status plant species in areas of suitable habitat where floristic surveys could not be conducted, BIO-MM #16 (Conduct Protocol-Level Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities) would identify the locations of all special-status plant species in areas not previously surveyed. Based on the results, BIO-MM #17 (Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species) can be fully implemented throughout the project area to further avoid or minimize direct and indirect impacts to special-status plants.

Since avoidance, minimization (BIO-MM #16), rectification, or reduction (BIO-MM #17) of direct and indirect impacts will not reduce the significance of these impacts by themselves, mitigation will also be secured by the Authority through compensatory mitigation BIO-MM #53 (Compensate for Impacts on Special-Status Plant Species). In conjunction with final design and the permitting process, in compliance with the project's Biological Opinion, the Authority will mitigate at a 1:1 ratio at a USFWS-approved site.

By avoiding, minimizing, rectifying, and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plant species will be reduced.

There would be no secondary impacts from these mitigation measures. By avoiding, minimizing, and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plant species will be reduced. The Authority finds that the above listed mitigation measures have been required in the Preferred Alternative and that implementation of these measures will substantially lessen the direct and indirect impacts to special-status plant species and their habits by reducing the impact to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.2 Impact BIO #2: Effects on Special-Status Wildlife

Wildlife habitat and land cover types in the footprint of the Preferred Alternative have the potential to support a variety of special-status wildlife species. Construction activities have the potential to disturb the life cycles of these special-status species. Up to 41 special-status wildlife species have the potential to occur in and near the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by construction period activities. As indicated in Table 3.7-4 of the Draft Supplemental EIR/EIS, the potential for occurrence is identified as no potential, low, moderate, or high. The presence of and potential for special-status wildlife species to occur in a particular habitat is linked to the physical characteristics of the landscape and the species' known geographic range.

Direct (BIO #2) Impacts during Construction Period

Direct impacts associated with the Preferred Alternative on special-status wildlife species (including amphibians, reptiles, fish, birds, and mammals) and native fauna will disturb suitable habitats (e.g., destruction, alteration, degradation, fill, or pollution of suitable habitat) that have potential to support special-status wildlife species. As a result of construction activities, the Preferred Alternative may result in adverse effects on special-status wildlife species through harassment, disturbance, injury, nest abandonment or death of individuals. These impacts may occur to all life stages (i.e., eggs, young, juveniles or adults).

Direct impact may occur as a result of permanent conversion of occupied habitat to project infrastructure, direct strike during operation and maintenance, trampling, or crushing.

Indirect (BIO #2) Impacts during Construction Period

Construction period indirect impacts associated with the Preferred Alternative on special-status wildlife species (including amphibians, reptiles, fish, birds, and mammals) and native fauna may result from increased noise, light, and ground disturbance. These impacts may indirectly result in water quality degradation, hydrological modifications, habitat degradation (through soil

compaction, or alteration of vegetation cover), introduce nonnative invasive (noxious) weeds, and in some cases may result in mortality of individuals. Specifically, the indirect impacts may result in reduced reproductive success, decreased survivorship of these species and their food, abandonment of refugia (e.g., burrows), temporary shifts in foraging patterns or territories (displacement), and increased mortality or predation. These impacts may occur to all life stages (i.e., eggs, young, juveniles or adults).

The direct and indirect impacts on special-status wildlife species and their suitable habitats during construction are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #2 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program (WEAP).

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Control Plan.

BIO-MM #5: Prepare and Implement a Biological Resources Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in field).

BIO-MM #8: Wildlife Exclusion Fencing.

BIO-MM #9: Equipment Staging Areas.

BIO-MM #10: Monofilament Netting.

BIO-MM #11: Vehicle Traffic.

BIO-MM #12: Entrapment Prevention.

BIO-MM #13: Work Stoppage.

BIO-MM #14: "Take" Notification and Reporting.

BIO-MM #15: Post Construction Compliance Reports.

BIO-MM #22: Conduct Pre-Construction Surveys for Special Status Reptile and Amphibian Species.

BIO-MM #23: Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance and Relocation.

BIO-MM#26: Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard.

BIO-MM#27: Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard.

BIO-MM#28: Blunt-Nosed Leopard Lizard Avoidance.

BIO-MM #29: Conduct Pre-Construction Surveys and Delineate Active Nest Exclusion Areas of Other Breeding Birds.

BIO-MM #30: Conduct Pre-Construction Surveys and Monitoring for Raptors.

BIO-MM #31: Bird Protection.

BIO-MM #32: Conduct Protocol and Pre-Construction Surveys for Swainson's Hawks.

- BIO-MM #33: Swainson's Hawk Nest Avoidance and Monitoring.**
- BIO-MM #34: Monitor Removal of Nest Trees for Swainson's Hawks.**
- BIO-MM #35: Conduct Protocol Surveys for Burrowing Owl.**
- BIO-MM #36: Burrowing Owl Avoidance and Minimization.**
- BIO-MM #37: Conduct Pre-Construction Surveys for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.**
- BIO-MM #38: Implement Avoidance and Minimization Measures for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.**
- BIO-MM #40: Conduct Pre-construction Surveys for Special-Status Bat Species.**
- BIO-MM #41: Bat Avoidance and Relocation.**
- BIO-MM #42: Bat Exclusion and Deterrence.**
- BIO-MM #43: Conduct Pre-construction Surveys for American Badger and Ringtail.**
- BIO-MM #44: American Badger and Ringtail Avoidance.**
- BIO-MM #45: Conduct Protocol Level Pre-Construction Surveys for San Joaquin Kit Fox.**
- BIO-MM #46: Minimize Impacts on San Joaquin Kit Fox.**
- BIO-MM #51: Install Flashing or Slats within Security Fencing.**
- BIO-MM #52: Construction in Wildlife Movement Corridors.**
- BIO-MM #57: Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel.**
- BIO-MM #58: Compensate for Loss of Swainson's Hawk Nesting Trees.**
- BIO-MM #59: Compensate for Loss of Burrowing Owl Active Burrows and Habitat.**
- BIO-MM #60: Compensate for Destruction of San Joaquin Kit Fox Habitat.**
- BIO-MM #61: Compensate for Permanent Riparian Impacts.**
- BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.**
- BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.**
- BIO-MM #66: Implement Avoidance and Minimization Measures for BVLOS.**
- BIO-MM #67: Compensate for Impacts on BVLOS.**

AVR-MM #1b: Minimize Light Disturbance during Construction. Where construction lighting will be required during nighttime construction, the contractor will be required to shield such lighting and direct it downward in such a manner that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage offsite.

Impacts to special-status wildlife species from construction activities will be avoided and minimized where feasible. General avoidance/minimization measures, as described above under Impact BIO #1, will be implemented in order to track mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects. Many of the mitigation measures described in Impact BIO #1 have the same or similar ability to reduce impacts to special-status wildlife species.

As such, they are not repeated here except for those measures that are unique to Impact BIO #2.

To minimize entanglement of special-status wildlife species, the erosion control materials will not include plastic mono-filament netting (BIO-MM #10: Mono-Filament Netting). Wildlife exclusion barriers will keep wildlife out of the construction work area as specified and designed through consultation with USFWS and/or CDFW (BIO-MM #8: Wildlife Exclusion Fencing). In areas that have the potential to entrap wildlife, entrapment prevention measures will be enacted (BIO-MM #12: Entrapment Prevention). These measures may include covering holes, providing escape ramps or covering culverts.

To further avoid impacts to special-status wildlife species, work will stop in the event a special-status wildlife species enters the construction footprint in an area where construction is occurring (BIO-MM #13: Work Stoppage). Work will be suspended until the individual leaves voluntarily or is relocated using USFWS-and/or CDFW-approved techniques or methods.

To minimize impacts from light during nighttime construction, lighting will be directed so that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage off-site (AVR-MM #1b: Minimize Light Disturbance during Construction).

Qualified, agency-approved Biologists (where required, or as designated by the Project Biologist) will conduct preconstruction, protocol-level and focused surveys for special-status wildlife where suitable habitat is present within the construction footprint. Conducting protocol level surveys will aid in the avoidance and minimization of impacts to special-status wildlife species by identifying the locations where each species occurs and/or has the potential to occur in order to guide the avoidance and minimization mitigation measures and implement performance standards:

- BIO-MM #22. Conduct Preconstruction Surveys for Special-Status Reptile and Amphibian Species;
- BIO-MM#26: Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard;
- BIO-MM#27: Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard;
- BIO-MM #29. Conduct Preconstruction Surveys and Delineate Active Nest Exclusion Areas for Other Breeding Birds;
- BIO-MM #30. Conduct Preconstruction Surveys and Monitoring for Raptors;
- BIO-MM #32. Conduct Preconstruction Surveys for Swainson's Hawks;
- BIO-MM #35. Conduct Protocol Surveys for Burrowing Owls;
- BIO-MM #37. Conduct Preconstruction Surveys for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse
- BIO-MM #40. Conduct Preconstruction Surveys for Special-Status Bat Species
- BIO-MM #43. Conduct Preconstruction Surveys for American Badger and Ringtail;
- BIO-MM #45. Conduct Preconstruction Surveys for San Joaquin Kit Fox.
- BIO-MM #66: Implement Avoidance and Minimization Measures for BVLOS.

The result of the surveys will identify areas where additional mitigation measures are required in order to avoid and minimize impacts on special-status wildlife species. The surveys will provide additional information that will be used to guide the placement of ESAs, ERAs, and wildlife exclusion fencing, the extent and location of construction buffers, focus monitoring efforts, and in some instance species relocation. As a result impacts on special-status species and their habitat will be avoided and minimized. These measures include BIO-MM #23 Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance and Relocation; BIO-MM #33 Swainson's Hawk Nest Avoidance and Monitoring); BIO-MM #34 Monitor Removal of Nest Trees for Swainson's Hawk; BIO-MM #36. Burrowing Owl Avoidance and Minimization; BIO-MM #38 Implement Avoidance and Minimization Measures for Nelson's Antelope Squirrel, Tipton Kangaroo Rat,

Dulzura Pocket Mouse, and Tulare Grasshopper Mouse; BIO-MM #41 Bat Avoidance and Relocation; BIO-MM #42 Bat Exclusion and Deterrence; BIO-MM #44 American Badger and Ringtail Avoidance; and BIO-MM #46 Minimize Impacts on San Joaquin Kit Fox; and BIO-MM #66: Implement Avoidance and Minimization Measures for BVLOS.

In many instances these avoidance and minimization measures follow existing natural resource agency guidelines or protocols. These include CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012); USFWS' Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS [1999] 2011); and USFWS' Survey Protocol for Determining Presence of the Buena Vista Lake Ornate Shrew (USFWS 2012).

Further avoidance and minimization measures for impacts to special-status bird species include engineering design of catenary systems, masts, fencing, and other structures in accordance with design standards of transmission lines, where applicable (BIO-MM #31 Bird Protection).

Where direct or indirect impacts to special-status wildlife species, cannot be sufficiently avoided, minimized, or rectified, the Authority will conduct compensatory mitigation. The compensatory mitigation may include preservation, enhancement, restoration, or creation of suitable habitats that will protect in perpetuity suitable occupied habitat for impacted species at a level commensurate to or in excess of the project's direct and indirect impacts. Applicable compensatory mitigation measures include:

- BIO-MM #57 Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel;
- BIO-MM #58 Compensate for Loss of Swainson's Hawk Nesting Trees;
- BIO-MM #59 Compensate for Loss of Burrowing Owl Active Burrows and Habitat;
- BIO-MM #60 Compensate for Destruction of San Joaquin Kit Fox Habitat;
- BIO-MM #61: Compensate for Permanent Riparian Impacts;
- BIO-MM #67: Compensate for Impacts on BVLOS.

In some instances, the compensatory mitigation follows existing natural resource agency guidelines or protocols. Examples of compensatory mitigation may include the conservation of similar vegetation communities to that of the impact area, a conservation easement, and the development and implementation of a land management plan to address the long-term sustainability of the mitigation site for special-status wildlife species. Habitat compensation may be accomplished by (1) purchasing "credits" from a USFWS-approved and/or CDFW-approved conservation bank with a service area covering the impact area; (2) acquiring appropriate properties in fee-title; or (3) establishing a conservation easement over a property. The USFWS- and CDFW-approved compensation will be consistent with the USFWS Biological Opinion (including 2018 amendment) and/or the CDFW 2081(b).

Where offsite mitigation is necessary to offset short-term temporary and/or long-term permanent residual impacts that have not been sufficiently avoided, reduced, rectified, or minimized to a less-than-significant level, the Authority will identify suitable habitat restoration, enhancement, and preservation sites to compensate for the residual impacts on special-status wildlife species (BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation). In order to minimize secondary impacts associated with the offsite compensatory mitigation, the offsite habitat restoration, enhancement, and preservation program will be designed, implemented, and monitored in ways that are consistent with the terms and conditions of the USACE Section 404 Permit, CDFW 1600 Streambed Alteration Agreement, and CESA and federal ESA as they apply to their jurisdiction and resources onsite.

There would be no secondary impacts from these mitigation measures. By avoiding, minimizing, and compensating for direct and indirect impacts to special-status wildlife, long-term effects to the future success of special-status wildlife species will be reduced. The Authority finds that the combination of the above list of mitigation measures would substantially lessen the direct and

indirect impacts to special-status wildlife species by reducing them to a less-than-significant impact under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.3 Impact BIO #3: Effects on Special-Status Plant Communities

As described in Section 3.7.4 of the Draft Supplemental EIR/EIS, habitats of concern occurring within the study area for the Preferred Alternative include special-status plant communities, jurisdictional waters, conservation areas, and protected trees. The avoidance of sensitive biological resources was an important consideration during the design and selection of the Preferred Alternative. Project design features, such as elevated sections, minimize direct effects while accommodating operation requirements.

Direct (BIO #3) Impacts during Construction Period

Construction activities within and adjacent to temporary impact areas of the construction footprint would have direct impacts on habitats of concern. These impacts would include removal or disruption (i.e., trampling and crushing) of special-status plant communities by construction vehicles and personnel. With respect to vegetation removal, it should be noted that vegetation within the HSR right-of-way would be permanently removed (as discussed under Impact BIO #7). However, habitats of concern requiring removal to accommodate construction operations (i.e., access and laydown area) would be restored after construction activities are completed (BIO-MM #47, BIO-MM #48).

Direct construction impacts on jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Construction staging areas are planned adjacent to seasonal riverine features to facilitate construction of elevated structures, and are also planned where bridges are proposed at at-grade crossings. Temporary fill would be placed during the construction of access roads and staging/equipment storage areas. This fill would result in a temporary loss of jurisdictional waters; potential impacts on the physical, chemical, and biological characteristics of aquatic substrates and food webs; and a potential increase in erosion and sediment transport into adjacent aquatic areas.

Direct construction impacts on satellite and linkage areas identified in the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998) would include the creation of temporary partial or total movement barriers to special-status species, the loss or degradation of special-status plant and wildlife species, and the loss or degradation of the lands that could support or provide habitat for these species.

Construction of the HSR project would result in the removal or modification of protected trees within the construction footprint, which could conflict with the objectives, goals, and/or provisions identified in approved local, regional, or state conservation plans.

Indirect (BIO #3) Impacts during Construction Period

Indirect impacts would include contamination of habitats of concern outside the construction footprint from construction equipment leaks; construction dust reducing photosynthetic capability; and an increased risk of fire in adjacent open spaces.

Temporary indirect construction impacts on special-status plant communities would include fragmentation and introduction of nonnative, invasive plant species. These changes would result in decreased viability and gradual loss of special-status plant communities. Fragmentation would result from the construction of temporary features, especially linear features, including access roads that bisect special-status plant communities. Construction activities could facilitate the spread of nonnative invasive plant species through introduction of seeds by construction equipment, vehicles, and personnel.

Because Project period indirect impacts on jurisdictional waters are more extensive than and tend to encompass the construction period impacts, the indirect impacts on jurisdictional waters are discussed in Impact BIO #7 in Section 3.7.4.2, Draft Supplemental EIR/EIS.

Indirect construction impacts on satellite and linkage areas identified in the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998) would include fragmentation of satellite and linkage areas where crossed by temporary construction activities (e.g., staging areas and access roads) and disturbance of natural lands within recovery areas that reduces habitat value for species recovery.

The direct and indirect impacts on habitats of concern during construction are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #3 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program (WEAP).

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Control Plan.

BIO-MM #5: Prepare and Implement a Biological Resources Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in field).

BIO-MM #9: Equipment Staging Areas.

BIO-MM #11: Vehicle Traffic.

BIO-MM #13: Work Stoppage.

BIO-MM #14: "Take" Notification and Reporting.

BIO-MM #15: Post Construction Compliance Reports.

BIO-MM #16: Conduct Protocol Level Pre-Construction Surveys for Special-Status Plant Species and Special-Status Plant Communities.

BIO-MM #17: Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species.

BIO-MM #47: Restore Temporary Riparian Impacts.

BIO-MM #48: Restore Temporary Impacts on Jurisdictional Waters.

BIO-MM #49: Monitor Construction Activities within Jurisdictional Waters.

BIO-MM #50: Mitigation and Monitoring of Protected Trees.

BIO-MM #52: Construction in Wildlife Movement Corridors.

BIO-MM #53: Compensate for Impacts on Special-Status Plant Species.

BIO-MM #61: Compensate for Permanent Riparian Impacts.

BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.

BIO-MM #63: Compensate for Permanent and Temporary Impacts on Jurisdictional Waters.

BIO-MM #64: Compensate for Impacts on Protected Trees.

BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.

Impacts on habitats of concern from construction activities will be avoided and minimized where feasible. General avoidance/minimization measures will be implemented in order to track mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects. The measures are the same as the general mitigation measure described in Impacts BIO #1 and #2 and have the same or similar ability to reduce impacts on habitats of concern. As such, they are not repeated here except for those additional measures that did not apply to Impacts BIO #1 and #2.

To avoid and minimize impacts on habitats of concern, in areas of suitable habitat where floristic surveys could not be conducted, BIO-MM #16 (Conduct Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities) would identify the locations of all special-status plant communities in areas not previously surveyed.

To reduce impacts on jurisdictional waters, protective devices will be installed and construction will be monitored (BIO-MM #49: Monitor Construction Activities within Jurisdictional Waters).

Impacts to protected trees will be reduced by conducting preconstruction surveys to evaluate the condition of protected trees, fencing protected trees that may be indirectly affected by construction activities to form ERAs, or by transplanting trees (BIO-MM #50: Mitigation and Monitoring of Protected Trees).

Where avoidance and minimization of habitats is not feasible, both temporary and permanent impacts will be mitigated through habitat restoration. To reduce impacts to these sensitive habitats, during post-construction, the Contractor will revegetate all disturbed riparian areas

(BIO-MM #47: Restore Temporary Riparian Impacts) and restore topography of jurisdictional waters using stockpiled and segregated soils and revegetate disturbed areas (BIO-MM #48: Restore Temporary Impacts on Jurisdictional Waters).

Since avoidance, minimization, rectification, or reduction of direct and indirect impacts will not alone fully mitigate all impacts on habitats of concern to a less-than-significant level, mitigation will also be secured by the Authority through compensatory mitigation. The Authority will compensate for permanent impacts on habitats of concern, as determined in consultation with the appropriate agencies (e.g., USACE, CDFW, State Water Resources Control Board [SWRCB]), through (1) purchasing "credits" from a Service-approved conservation bank with a service area covering the impact area; (2) acquiring appropriate properties in fee-title; or (3) establishing a conservation easement over a property.

Specifically, the following compensatory mitigation will mitigate for loss of habitats of concern:

- BIO-MM #61. Compensate for Permanent Riparian Impacts
- BIO-MM #63. Compensate for Permanent and Temporary Impacts on Jurisdictional Waters
- BIO-MM #64. Compensate for Impacts to Protected Trees

Compensation shall include aquatic resources restoration, establishment, enhancement, or preservation. For jurisdictional waters impacted by the Preferred Alternative, the Authority will mitigate impacts on aquatic resource at a minimum ratio of 1:1, or as determined in consultation with the appropriate agencies. For protected trees, the Authority will provide mitigation in accordance to the local regulations and laws in each jurisdiction.

Prior to the start of ground-disturbing activities, in order to ensure compliance with permit applications for USFWS, USACE, SWRCB, and CDFW, the Authority will develop a site specific Comprehensive Mitigation Monitoring Plan(s) containing performance standards (BIO-MM #62):

- Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan).
- Offsite mitigation is necessary for short-term temporary and/or long-term permanent residual impacts that have not been sufficiently avoided, reduced, rectified, or minimized to a less-than-significant level by project avoidance and minimization measures or other mitigation measures.
- The Authority will identify suitable habitat restoration, enhancement, and preservation sites to compensate for the residual impacts on habitats of concern (BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation). In order to minimize any potential mitigation impacts offsite, the offsite habitat restoration, enhancement, and preservation program will be designed, implemented, and monitored consistent with the terms and conditions of the USACE Section 404 Permit, CDFW 1600 Streambed Alteration Agreement, and CESA and federal ESA as they apply to their jurisdiction and resources onsite. There would be no significant secondary impacts from implementation of these mitigation measures. By avoiding, minimizing and compensating for direct and indirect impacts to habitats of concern, long-term effects to the future success of habitats of concern will be reduced.

The Authority finds that the combination of the above list of mitigation measures would substantially lessen the direct and indirect impacts to habitats of concern by reducing the impacts to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.4 Impact BIO #4: Construction Effects on Wildlife Movement Corridors

As described in Section 3.7.3 of the Draft Supplemental EIR/EIS, the Preferred Alternative intersects the Kern River wildlife movement corridor. Although the infrastructure would not impede movement of aquatic species, construction activities could obstruct wildlife movement and migration through the Kern River linkage for between two to five consecutive years, resulting in greater impacts to wildlife using the linkage.

Direct (BIO #4) Impacts during Construction Period

Direct impacts include the obstruction of wildlife movement because of project infrastructure, security fencing, and construction fencing.

Indirect (BIO #4) Impacts during Construction Period

Indirect impacts may occur as a result of noise, vibration, and visual or light pollution that could result in temporary shifts in use of corridors, foraging patterns or territories, nursery or rookery abandonment, and increased predation.

The direct and indirect impacts on wildlife movement corridors during the construction period are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #4 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #9: Equipment Staging Areas.

BIO-MM #51: Install Flashing or Slats within Security Fencing.

BIO-MM #52: Construction in Wildlife Movement Corridors.

BIO-MM #57: Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel.

BIO-MM #58: Compensate for Loss of Swainson's Hawk Nesting Trees.

BIO-MM #59: Compensate for Loss of Burrowing Owl Active Burrows and Habitat.

BIO-MM #60: Compensate for Destruction of San Joaquin Kit Fox Habitat.

Impacts to wildlife movement would be reduced by the Mitigation Measures which are described, in part, under Impact BIO #2. A construction avoidance and minimization plan (BIO-MM #52: Construction in Wildlife Movement Corridors) will reduce impacts to special-status wildlife by optimizing the location of wildlife movement structures, and minimizing ground-disturbance in and near identified wildlife movement corridors, particularly during the nighttime hours.

The Authority finds that the above-listed mitigation measures will substantially lessen the impacts to wildlife movement corridors during the construction period for the Preferred Alternative by reducing the impacts to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.5 Impact BIO #5: Project Effects on Special-Status Plant Species

Up to 16 special-status plant species have the potential to occur in and immediately adjacent to the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by project period activities. Table 3.7-3 of the Draft Supplemental EIR/EIS presents the potential for occurrence of special-status species based on the presence of suitable habitat, the range of the species, and the proximity of known occurrences of the species.

In addition to the species that have been observed within the Special-Status Plant Study Area, special-status plant species have the potential to occur in areas of suitable habitat in parcels that have not been surveyed. These species include federally and/or state-listed species and species listed by the California Native Plant Society, all of which are considered rare in California (CEQA Guidelines, §15380). If these species occur in the construction footprint, they would be subject to the same adverse effects as those described below for species known to occur.

Direct (BIO #5) Project Impacts

Direct impacts on special-status plant species and native plant species would result from the permanent removal of vegetation from within the Preferred Alternative footprint. Disturbance of individuals, populations, or potential suitable habitat for special-status plant species could occur during construction of permanent infrastructure, and ongoing operation and maintenance activities (e.g., routine inspection and maintenance of the HSR right-of-way).

Direct impacts include the permanent removal of special-status plant communities and land cover types that provide habitat for a number of special-status plants. Based on the habitat requirements of special-status plants, as many as 16 species have a potential to occur within the Preferred Alternative. Some areas within the Preferred Alternative were not made available for pedestrian field surveys. Therefore, inaccessible areas with potentially suitable habitat present are considered occupied by special-status plant species. For these reasons, the Preferred Alternative is assumed to have suitable habitat for special-status plant species.

Indirect (BIO #5) Project Impacts

Indirect impacts on special-status plant species and native plant species are anticipated to include erosion, sedimentation, siltation, and changes in hydrology that could affect adjacent aquatic habitats; wind erosion effects; increased risk of fire; habitat degradation through changes in habitat heterogeneity, fragmentation, and the introduction of nonnative invasive plant species; and introduction of noxious plant species.

The direct and indirect impacts on special-status plant species and habitats suitable for special-status plant species during the project period are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #5 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Management Plan.

BIO-MM #5: Prepare and Implement a Biological Resource Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM #9: Equipment Staging Areas.

BIO-MM #11: Vehicle Traffic.

BIO-MM #13: Work Stoppage.

BIO-MM #14 "Take" Notification and Reporting.

BIO-MM #15: Post-Construction Compliance Reports.

BIO-MM #16: Conduct Protocol-Level Pre-Construction Surveys for Special-Status Plant Species and Special Status Plant Communities.

BIO-MM #17: Prepare and Implement Plan for Salvage, Relocation and/or Propagation of Special Status Plant Species.

BIO-MM #47: Restore Temporary Riparian Impacts.

BIO-MM #53: Compensate for Impacts on Special-Status Plant Species.

BIO-MM #61: Compensate for Permanent Riparian Impacts.

BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.

BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.

Project impacts on special-status plant species would be similar to construction impacts; however, impacts would be permanent and would result in continued indirect impacts resulting from construction of permanent infrastructure and train operation. Impacts to special-status plant species would be reduced by the Mitigation Measures described under Impact BIO #1.

There would be no secondary impacts from these mitigation measures. By minimizing and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plant species will be reduced. The combination of these mitigation measures would lessen the direct and indirect impacts to special-status plant species to a less-than-significant impact under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.6 Impact BIO #6: Project Effects on Special-Status Wildlife Species

Up to 41 special-status wildlife species have the potential to occur in and near the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by project period activities. As indicated in Table 3.7-4 of the Draft Supplemental EIR/EIS, the potential for occurrence is identified as no potential, low, moderate, or high. The presence of and potential for special-status wildlife species to occur in a particular habitat is linked to the physical characteristics of the landscape and the species' known geographic range.

Direct (BIO #6) Project Impacts

Direct impacts to special-status wildlife species (including amphibians, reptiles, fish, birds, and mammals) and native fauna may occur as a result of permanent conversion of occupied habitat to project infrastructure, direct strike during operation and maintenance, trampling or crushing, exposure to contaminants, erosion, and sedimentation, etc. These direct impacts to individual special-status wildlife species occur within the limits of disturbance. As a result of project activities, the Preferred Alternative may result in adverse effects on special-status wildlife species through harassment, disturbance, injury, nest abandonment, or death of individuals. These impacts may occur to all life stages (i.e., eggs, young, juveniles, or adults). Ongoing operation and maintenance activities would also occur (e.g., routine inspection and maintenance of the HSR right-of-way) and would similarly involve disturbance from trampling or crushing of native vegetation by vehicle or foot traffic.

Indirect (BIO #6) Project Impacts

Project period indirect impacts on special-status wildlife species (including amphibians, reptiles, fish, birds, and mammals) and native fauna associated with the Preferred Alternative may result from increased noise, light, visual (motion) and ground disturbance.

During operation, maintenance activities could contribute to chemical runoff and pollution of adjacent habitat. Project elements including security fencing and electrical infrastructure may attract predators (e.g., raptors, coyotes) and increase prey on special-status wildlife species.

These impacts may indirectly result in water quality degradation and contamination, hydrological modifications, habitat degradation (through soil compaction, or alteration of vegetation cover), introduce nonnative invasive (noxious) weeds, and in some cases may result in mortality of individuals.

Specifically, the indirect impacts may result in reduced reproductive success, decreased survivorship of these species and their food, abandonment of refugia (e.g., burrows), temporary shifts in foraging patterns or territories (displacement), dispersal movements, changes in behavior (e.g., startle and avoidance), reduced population viability, and increased mortality or predation. These impacts may occur to all life stages (i.e., eggs, young, juveniles or adults).

The direct and indirect impacts on special-status wildlife species and native fauna during the project period are considered a significant impact under CEQA. Implementation of the following mitigation measures will reduce Impact BIO #6 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program (WEAP).

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Control Plan.

BIO-MM #5: Prepare and Implement a Biological Resources Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in field).

BIO-MM #8: Wildlife Exclusion Fencing.

BIO-MM #9: Equipment Staging Areas.

BIO-MM #10: Monofilament Netting.

- BIO-MM #11: Vehicle Traffic.**
- BIO-MM #12: Entrapment Prevention.**
- BIO-MM #13: Work Stoppage.**
- BIO-MM #14: “Take” Notification and Reporting.**
- BIO-MM #15: Post Construction Compliance Reports.**
- BIO-MM #22: Conduct Pre-Construction Surveys for Special Status Reptile and Amphibian Species.**
- BIO-MM #23: Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance and Relocation.**
- BIO-MM#26: Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard.**
- BIO-MM#27: Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard.**
- BIO-MM#28: Blunt-Nosed Leopard Lizard Avoidance.**
- BIO-MM #29: Conduct Pre-Construction Surveys and Delineate Active Nest Exclusion Areas of Other Breeding Birds.**
- BIO-MM #30: Conduct Pre-Construction Surveys and Monitoring for Raptors.**
- BIO-MM #31: Bird Protection.**
- BIO-MM #32: Conduct Protocol and Pre-Construction Surveys for Swainson’s Hawks.**
- BIO-MM #33: Swainson’s Hawk Nest Avoidance and Monitoring.**
- BIO-MM #34: Monitor Removal of Nest Trees for Swainson’s Hawks.**
- BIO-MM #35: Conduct Protocol Surveys for Burrowing Owl.**
- BIO-MM #36: Burrowing Owl Avoidance and Minimization.**
- BIO-MM #37: Conduct Pre-Construction Surveys for Nelson’s Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.**
- BIO-MM #38: Implement Avoidance and Minimization Measures for Nelson’s Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.**
- BIO-MM #40: Conduct Pre-construction Surveys for Special-Status Bat Species.**
- BIO-MM #41: Bat Avoidance and Relocation.**
- BIO-MM #42: Bat Exclusion and Deterrence.**
- BIO-MM #43: Conduct Pre-construction Surveys for American Badger and Ringtail.**
- BIO-MM #44: American Badger and Ringtail Avoidance.**
- BIO-MM #45: Conduct Protocol Level Pre-Construction Surveys for San Joaquin Kit Fox.**
- BIO-MM #46: Minimize Impacts on San Joaquin Kit Fox.**
- BIO-MM #51: Install Flashing or Slats within Security Fencing.**
- BIO-MM #52: Construction in Wildlife Movement Corridors.**
- BIO-MM #57: Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson’s Antelope Squirrel.**
- BIO-MM #58: Compensate for Loss of Swainson’s Hawk Nesting Trees.**
- BIO-MM #59: Compensate for Loss of Burrowing Owl Active Burrows and Habitat.**

BIO-MM #60: Compensate for Destruction of San Joaquin Kit Fox Habitat.

BIO-MM #61: Compensate for Permanent Riparian Impacts.

BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.

BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.

BIO-MM #66: Implement Avoidance and Minimization Measures for BVLOS.

BIO-MM #67: Compensate for Impacts on BVLOS.

AVR-MM #1b: Minimize Light Disturbance during Construction. Details regarding AVR-MM #1b are described above.

Project impacts on special-status wildlife species would be similar to construction impacts; however, impacts would be permanent and would result in continued indirect impacts resulting from construction of permanent infrastructure and train operation. Impacts to special-status wildlife species would be reduced by the Mitigation Measures described under Impacts BIO #1 and #2 (including the compensatory mitigation).

In addition to those measures, the following mitigation measures will also be implemented to avoid and minimize impacts on special-status wildlife species.

Noise impacts to special-status wildlife species present in developed areas will be minimized by the construction of sound walls (N&V-MM #3: Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines).

Before the start of operation permanent special-status reptile and mammal-proof fencing consistent with applicable permits as determined in consultation with USFWS and CDFW will be installed (BIO-MM #51: Install Flashing or Slats in Security Fencing). The installation of flashing or slats within the security fencing will prevent access to the HSR thereby reducing impacts to wildlife species and reducing injury and mortality in special-status wildlife species.

There would be no secondary impacts from these mitigation measures. By minimizing and compensating for direct and indirect impacts to special-status wildlife, long-term effects to the future success of special-status wildlife species will be reduced. The Authority finds that the combination of the above listed mitigation measures would substantially lessen the direct and indirect impacts to special-status wildlife species from project activities by reducing the impacts to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.7 Impact BIO #7: Project Effects on Habitats of Concern

As described in Section 3.7.4 of the Draft Supplemental EIR/EIS, habitats of concern occurring within the study area for the Preferred Alternative include special-status plant communities, jurisdictional waters, conservation areas, and protected trees. For purposes of the Final Supplemental EIR, special-status plant communities include “sensitive natural communities” as defined by CDFW. The avoidance of sensitive biological resources was an important consideration during the design and selection of the Preferred Alternative. Project design features, such as elevated sections, minimize direct effects while accommodating operation requirements.

Direct (BIO #7) Project Impacts

Direct impacts include the permanent conversion of habitats of concern (e.g., special-status plant communities, jurisdictional waters, conservation areas, and protected trees). Direct project impacts on habitats of concern would result from operation and maintenance, and also includes the various permanent project components (e.g., embankments, rail bed, road overcrossings, and aerial structure footings).

Impacts on special-status plant communities would include the permanent removal of vegetation from within the construction footprint, and the disturbance (i.e., trampling or crushing) of plants due to an increase of pedestrian access/activity in the area. Ongoing operation and maintenance activities would also occur (e.g., routine inspection and maintenance of the HSR right-of-way) and would similarly involve disturbance from trampling or crushing of native vegetation by vehicle or foot traffic.

The contouring and placement of fill in jurisdictional waters would result in the permanent loss of jurisdictional waters; irreversible impacts on the physical, chemical, and biological characteristics of aquatic substrates and food webs; and a potential increase in erosion and sediment transport into adjacent aquatic areas. Direct impacts on jurisdictional waters (i.e., natural and man-made features) would also include the removal or modification of local hydrology and the redirection of flow within jurisdictional waters. Permanent impacts on jurisdictional waters would occur during construction of bridges and viaducts over the Kern River, as well as man-made ditches and basins (including shading, support piers, and removal of vegetation).

The jurisdictional waters (Kern River and canal/ditches) are heavily managed by local irrigation districts, which serve public water needs, and agricultural production. The construction of the Preferred Alternative would further degrade these managed/man-made jurisdictional waters but would maintain existing agriculture-based functions and services.

Project direct impacts on federal recovery plan areas include the creation of permanent partial barriers to special-status species, the loss or degradation of special-status plant and wildlife species, and the loss or degradation of the lands that could support or provide habitat for these species.

The Draft Supplemental EIR/EIS describes that the Preferred Alternative would result in temporary and permanent impact on the Kern River linkage area identified in the Recovery Plan for Upland Species of the San Joaquin Valley. As a result of the 1.13-acre permanent impact to the Kern River, the Preferred Alternative would result in measurable loss to recovery plan areas.

Project period activities would result in the permanent removal or modification of protected trees, which could conflict with the objectives, goals, and/or provisions identified in approved local, regional, or state conservation plans. Where the alignment is located at-grade, removal or trimming of all protected trees is anticipated. In urban areas where the majority of the landscaped ornamental trees are located and where the alignment is on an elevated structure, trimming and limited removal of protected trees would occur.

Indirect (BIO #7) Project Impacts

Indirect impacts would include contamination of habitats of concern outside the construction footprint from increased erosion, sedimentation, siltation, and runoff due to alterations in topography and hydrology; wind erosion effects; an increased risk of fire in adjacent open spaces; and the introduction of noxious plant species from increased human activity/disturbance.

Permanent indirect impacts on special-status plant communities, including riparian areas, would include fragmentation and introduction of nonnative, invasive plant species. These changes would result in decreased viability and gradual loss of special-status plant communities.

Fragmentation would result from the construction of permanent features, especially linear features, including track that bisects contiguous natural areas. Project activities could facilitate the spread of nonnative, invasive plant species through introduction of seeds by construction and operation equipment, vehicles, and personnel.

Potential indirect impacts on jurisdictional waters include a number of temporary construction related impacts and permanent water-quality-related impacts: erosion, siltation, and runoff into natural and constructed water features and deposition downstream of the construction footprint.

In addition, permanent changes to jurisdictional waters within the Preferred Alternative may also result in changes in hydrology to areas outside of the footprint. For many of the man-made features these indirect impacts would be minor, and hydrologic changes would be minimal.

However, for the Kern River, the only natural feature within the Preferred Alternative, the changes may result in changes in the natural hydrological regime. Indirect impacts on seasonal riverine include the changes in water temperature through the removal of the riparian trees that provide shade, shading of open water, and reduced contribution to and ability to recycle nutrients.

Project indirect impacts on satellite and linkage areas within the USFWS Recovery Plan for Upland Species of the San Joaquin Valley, California would occur as a result of implementation of the project. These indirect impacts include fragmentation of habitats where recovery areas are crossed by permanent project elements and disturbance of natural lands, which reduces habitat value for special-status species recovery.

Direct and indirect impacts on habitats of concern during the project period are a significant impact under CEQA.

Implementation of the following mitigation measures will reduce Impact BIO #7 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #1: Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor.

BIO-MM #2: Regulatory Agency Access.

BIO-MM #3: Prepare and Implement a Worker Environmental Awareness Program (WEAP).

BIO-MM #4: Prepare and Implement a Weed Control Plan and Annual Vegetation Control Plan.

BIO-MM #5: Prepare and Implement a Biological Resources Management Plan.

BIO-MM #6: Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM #7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in field).

BIO-MM #9: Equipment Staging Areas.

BIO-MM #11: Vehicle Traffic.

BIO-MM #13: Work Stoppage.

BIO-MM #14: "Take" Notification and Reporting.

BIO-MM #15: Post Construction Compliance Reports.

BIO-MM #16: Conduct Protocol Level Pre-Construction Surveys for Special-Status Plant Species and Special-Status Plant Communities.

BIO-MM #17: Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species.

BIO-MM #47: Restore Temporary Riparian Impacts.

BIO-MM #48: Restore Temporary Impacts on Jurisdictional Waters.

BIO-MM #49: Monitor Construction Activities within Jurisdictional Waters.

BIO-MM #50: Mitigation and Monitoring of Protected Trees.

BIO-MM #52: Construction in Wildlife Movement Corridors.

BIO-MM #53: Compensate for Impacts on Special-Status Plant Species.

BIO-MM #61: Compensate for Permanent Riparian Impacts.

BIO-MM #62: Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.**BIO-MM #63: Compensate for Permanent and Temporary Impacts on Jurisdictional Waters.****BIO-MM #64: Compensate for Impacts on Protected Trees.****BIO-MM #65: Offsite Habitat Restoration, Enhancement, and Preservation.**

Project impacts on special-status plant communities, jurisdictional waters, conservation areas, and protected trees would be permanent and would result in continued indirect impacts resulting from construction of permanent project elements and train operation. Impacts to special-status plant communities, jurisdictional waters, conservation areas, and protected trees would be reduced by the Mitigation Measures described under Impacts BIO #1, #2, and #3.

There would be no significant secondary impacts from implementation of these mitigation measures. By minimizing and compensating for direct and indirect impacts to habitats of concern, long-term effects to these habitats of concern will be reduced. The Authority finds that combination of the above listed mitigation measures would substantially lessen the direct and indirect impacts to special-status plant communities, jurisdictional waters, conservation areas, and protected trees from project activities by reducing the impact to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.4.8 Impact BIO #8: Project Effects on Wildlife Movement Corridors

The Preferred Alternative incorporates a number of project design features that would facilitate wildlife movement, including elevated tracks, road overcrossings and undercrossings, and drainage facilities (as described in Chapter 2, Draft Supplemental EIR/EIS). Nevertheless, the placement of the project infrastructure, and the need for ongoing operations and maintenance activities, will cause direct and indirect impacts to wildlife movement corridors during the project period.

Direct (BIO #8) Project Impacts

The Preferred Alternative has been designed to facilitate wildlife movement; however, direct impacts on wildlife movement may occur. Direct impacts include the placement of temporary and permanent linear barriers to wildlife movement with restricted crossing opportunities. This may cause habitat shifts (toward nonnative and/or disturbed type communities) over time (through direct effects), because it could degrade linkages, which may no longer provide food, cover, or ease of travel for many species. These shifts in habitat use can result in increased competition for resources, as well as the potential for genetic isolation of populations.

Developed areas are generally barriers to natural wildlife movement and are of marginal habitat value to most special-status plant and wildlife species. Outside of the Kern River corridor, much of the project footprint has been converted to agricultural or developed urban areas. Although these areas are generally disturbed on a daily-to-seasonal basis, wildlife species that have adapted to urban and agricultural environments may be affected by the placement of barriers, but the impact would be less severe than in natural areas.

The Preferred Alternative is designed on viaduct structure in the Kern River linkage, an identified wildlife movement corridor. The viaduct structure would facilitate wildlife movement, but would incrementally affect movement patterns and linkage connectivity in the region. In urban Bakersfield, where the track is predominantly elevated, the Preferred Alternative will not impede wildlife movement. In at-grade sections, security fencing will be installed for safety and security purposes; in these sections wildlife movement will be facilitated through bridges, road overcrossings and undercrossings, culverts and other drainage facilities.

Indirect (BIO #8) Project Impacts

Implementation of the Preferred Alternative may result in indirect disruption of wildlife movement through lighting, noise, motion, and startle effects.

Indirect disturbance from HSR operation and maintenance activities (e.g., routine inspection and maintenance of HSR right-of-way) of the habitats associated with a wildlife corridor may cause habitat shifts (toward nonnative and/or disturbed type communities) over time (through indirect effects) because wildlife are no longer able to move freely between areas of natural habitat.

In at-grade crossings the noise screening distance (i.e., distance from the trackway centerline within which an impact could result) for a single-train pass-by sound exposure level (SEL) of 100 dBA would be approximately 100 feet from the track centerline (for a total width of 200 feet). At-grade crossings within rural areas where the right-of-way is less than a width of 200 feet could expose wildlife to noise levels that exceed the 100-dBA SEL threshold. Also, when the track is located on an elevated structure (e.g., over the Kern River), the screening distance for a single train passby SEL of 100 dBA would be approximately 15 feet from the track centerline. In such cases indirect effects may cause wildlife to avoid use of a habitat linkage.

Direct and indirect impacts to wildlife movement corridors during the project period are a significant impact under CEQA.

Implementation of the following mitigation measure will reduce Impact BIO #8 to less than significant. (Due to length, the text of the biological resources mitigation measures are presented separately in Attachment A to these CEQA Findings.)

BIO-MM #9: Equipment Staging Areas.

BIO-MM #51: Install Flashing or Slats within Security Fencing.

BIO-MM #52: Construction in Wildlife Movement Corridors.

BIO-MM #57: Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel.

BIO-MM #58: Compensate for Loss of Swainson's Hawk Nesting Trees.

BIO-MM #59: Compensate for Loss of Burrowing Owl Active Burrows and Habitat.

BIO-MM #60: Compensate for Destruction of San Joaquin Kit Fox Habitat.

Impacts to wildlife movement would be reduced by the Mitigation Measures which are described, in part, under Impact BIO # 2. A construction avoidance and minimization plan (BIO-MM #52: Construction in Wildlife Movement Corridors) will reduce impacts to special-status wildlife by optimizing the location of wildlife movement structures, minimizing ground-disturbance in and near identified wildlife movement corridors, particularly during the nighttime hours.

The Authority finds that the above-listed mitigation measures will substantially lessen the impacts to wildlife movement corridors during the project period from the Preferred Alternative by reducing the impacts to a less-than-significant level under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.5 Hydrology and Water Resources (Section 3.8 of the Draft Supplemental EIR/EIS)

With implementation of the recommended mitigation measures identified in the findings for Impacts HWR #4 and #8, as described below, the project would not result in any significant and unavoidable impacts under CEQA related to hydrology and water resources.

3.5.1 Impact HWR #4: Temporary Impacts on Floodplains

Construction in a floodplain could temporarily impede or redirect flood flows because of the presence of construction equipment and materials in the floodplain. The Preferred Alternative would travel through two Federal Emergency Management Agency designated floodplains: 1) an

unnamed floodplain within the city of Shafter; and 2) the Kern River floodplain. Construction activities associated with the Preferred Alternative in these Federal Emergency Management Agency designated floodplains would include the placement of fill within the unnamed floodplain in the city of Shafter and construction of viaduct structures within the Kern River floodplain. The impediment or redirection of flood flows would be a significant impact under CEQA.

Implementation of the following mitigation measure will reduce Impact HWR #4 to less than significant:

HWR-MM #1: Floodplain Protection: Construction. The following measures shall be implemented during the construction period to mitigate potential impacts to floodplains, including the following:

- Implement standard floodplain measures, including BMPs, during construction. BMPs may include preservation of existing vegetation to the maximum extent practicable, limiting the number of equipment trips across floodplain crossing, selecting equipment that exerts the least amount of ground surface pressure, use of vegetated buffers on slopes, and application of hydraulic mulch on disturbed streambanks.
- Designated construction employees and local districts shall monitor weather for heavy storms and potential flood flows. If a heavy storm or flood event is identified, construction equipment shall be relocated outside of the floodplain.

Impacts to hydrology and water resources associated with implementation of the Preferred Alternative would be less than significant after implementation of Mitigation Measure HWR-MM #1. No impacts would result from implementing Mitigation Measure HWR-MM #1. Mitigation Measure HWR-MM #1 will be implemented within the study area, and therefore does not raise the potential for impacts in any area not already analyzed for this project. The proposed mitigation measure, with proper implementation, serves only to reduce potential impacts of the project, and by nature of its design does not result in additional environmental impacts to hydrology and water resources.

The Authority finds that Mitigation Measure HWR-MM #1 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce the Preferred Alternative's hydrology and water resources impacts associated with the impediment or redirection of flood flows to less-than-significant levels under CEQA.

Impact HWR #4 of the Fresno to Bakersfield Section Final EIR/EIS did not identify a significant impact requiring mitigation. Therefore, no finding would be required for Impact HWR #4 of the May 2014 Project.

3.5.2 Impact HWR #8: Permanent Impacts on Floodplains

The Preferred Alternative would cross the levees on the northwestern and southwestern banks of the Kern River in the city of Bakersfield via a viaduct structure supported by eight octagonal, 15-foot diameter concrete columns within the Zone AE (base flood elevation determined) floodplain associated with the Kern River. The concrete columns would reduce the floodplain storage capacity, obstruct the flow of the Kern River, and increase the water surface elevation upstream of the Preferred Alternative crossing. Although the volume of fill inside the 100- and 200-year floodplain would be limited to the concrete columns, which are negligible in comparison to the size of the Kern River floodplain, Federal Emergency Management Agency regulations prevent projects from increasing the base flood elevation by greater than 1 foot in floodplains or substantially changing the floodplain limits. This would be a significant impact under CEQA.

Implementation of the following mitigation measure will reduce Impact HWR #8 to less than significant:

HWR-MM #2: Floodplain Protection: Operation. The following measures shall be implemented as part of the project to reduce impacts to floodplains:

- A Conditional Letter of Map Revision to Federal Emergency Management Agency shall be required for all construction activities inside the Kern River.
- Potential impacts and mitigation measures for the Kern River shall require coordination with the Central Valley Flood Protection Board, the United States Army Corps of Engineers, the City of Bakersfield, and County of Kern.

Impacts to hydrology and water resources associated with implementation of the Preferred Alternative would be less than significant after implementation of Mitigation Measure HWR-MM #2. No impacts would result from implementing Mitigation Measure HWR-MM #2. Mitigation Measure HWR-MM #2 will be implemented within the study area, and therefore does not raise the potential for impacts in any area not already analyzed for this project. The proposed mitigation measure, with proper implementation, serves only to reduce potential impacts of the project, and by nature of its design does not result in additional environmental impacts to hydrology and water resources.

The Authority finds that Mitigation Measure HWR-MM #2 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce the project's hydrology and water resources impacts associated with floodplains to less-than-significant levels under CEQA.

Impact HWR #8 of the Fresno to Bakersfield Section Final EIR/EIS did not identify a significant impact requiring mitigation. Therefore, no finding would be required for Impact HWR #8 of the May 2014 Project.

3.6 Geology, Soils, Seismicity, and Paleontological Resources (Section 3.9 of the Draft Supplemental EIR/EIS)

Construction of the Preferred Alternative could result in impacts to paleontological resources.

3.6.1 Impact GSSP #12: Sensitive Paleontological Resources

During construction, ground-disturbing activities could disturb sediments with high paleontological sensitivity. Depending on the depth of ground disturbance, construction could directly or indirectly adversely affect a unique paleontological resource. This is considered a potentially significant impact under CEQA. The following measures mitigate this impact:

CUL-MM#16: Engage a Paleontological Resources Specialist to Direct Monitoring during Construction. A paleontological resources specialist (PRS) will be designated for the project who will be responsible for determining where and when paleontological resources monitoring should be conducted. Paleontological resources monitors will be selected by the PRS based on their qualifications, and the scope and nature of their monitoring will be determined and directed based on the Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The PRS will be responsible for developing Worker Environmental Awareness Program training. All management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training before beginning work on the project and will be provided with the necessary resources for responding in case paleontological resources are found during construction. The PRS will document any discoveries, as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5.

CUL-MM#17: Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan. Paleontological monitoring and mitigation measures are restricted to those construction-related activities that will result in the disturbance of paleontologically sensitive sediments. The PRMMP will include a description of when and where construction monitoring will be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; and procedures for reporting the results of the monitoring and mitigation program. The monitoring program will be designed to accommodate site-specific construction of the selected option. The PRMMP will be consistent with Society of Vertebrate Paleontology

(SVP 1995) guidelines for the mitigation of construction impacts on paleontological resources. The PRMMP will also be consistent with the Society of Vertebrate Paleontology (SVP 1996) conditions for receivership of paleontological collections and any specific requirements of the designated repository for any fossils collected.

CUL-MM#18: Halt Construction When Paleontological Resources Are Found. If fossil or fossil-bearing deposits are discovered during construction, regardless of the individual making a paleontological discovery, construction activity in the immediate vicinity of the discovery will cease. This requirement will be spelled out in both the PRMMP and the WEAP. Construction activity may continue elsewhere provided that it continues to be monitored as appropriate. If the discovery is made by someone other than a Paleontological resources monitors or the PRS, a Paleontological resources monitors or the PRS will immediately be notified.

None of the mitigation measures are expected to result in secondary effects. Surficial activities such as staging and clearing usually do not affect paleontological resources because the associated disturbance does not extend deep enough to impact paleontological sensitive sediment, but construction activities that may impact paleontological resources include excavation, heavy equipment usage and movement at depth, and drilling. However, with monitoring efforts during construction activities, the preparation and implementation of a monitoring and mitigation plan, and procedures to halt work in the case of the discovery of paleontological resources, construction impacts to significant paleontological resources will be substantially lessened or avoided, and reduced to a less-than-significant level with implementation of CUL-MM #16, CUL-MM #17, and CUL-MM #18.

The Authority finds that Mitigation Measures CUL-MM #16, CUL-MM #17, and CUL-MM #18 have been required in the Preferred Alternative and that implementation of these measures will substantially lessen or avoid the potentially significant impact of construction on paleontological resources; this impact is less than significant with implementation of these mitigation measures.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.7 Hazardous Materials and Wastes (Section 3.10 of the Draft Supplemental EIR/EIS)

With implementation of the recommended mitigation measure identified in the finding for Impact HMW # 4, the Preferred Alternative would not result in any significant and unavoidable impacts related to hazardous materials and waste. This conclusion is further supported by the Impact Avoidance and Minimization Measures that the Authority has included as part of the Preferred Alternative, consistent with and in furtherance of the Statewide Program EIR/EIS commitments (see Draft Supplemental EIR/EIS Appendix 2-H). These avoidance and minimization measures would minimize impacts due to hazardous materials as they relate to the proper transport, storage, use and disposal of hazardous materials, preparation of plans to handle unforeseen spills or undocumented contamination to reduce the exposure of workers and the public and the spread of contaminants, and specific investigation of properties before acquisition to remove or avoid contaminated areas to reduce exposure of workers and the public to hazardous material. In adopting the resolution of approval of the project, the Authority confirms that the Impact Avoidance and Minimization Measures are part of the Preferred Alternative.

3.7.1 Impact HMW #4: Temporary Hazardous Material and Waste Activities in the Proximity of Schools

During construction, demolition, and excavation activities, the project would potentially emit hazardous air emissions or handle extremely hazardous wastes above threshold quantities referenced in Public Resources Code section 21151.4 and described in Health and Safety Code Section 25532(j). Nine schools are located in the vicinity (0.25 mile) of potential construction activities for the Preferred Alternative (Draft Supplemental EIR/EIS, Table 3.10-2). Potentially hazardous materials and items containing potentially hazardous materials would be used in

railway construction. Demolition of existing structures within the construction footprint could require the removal of asbestos containing materials and lead-based paint from the project site.

Because the project would comply with the above Public and Health and Safety codes, as well as all other federal, state, and local regulations related to the transport, handling, and disposal of hazardous waste, the effect of HSR construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would have a less-than-significant impact.

The effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision during construction would largely be minor because of the generally small quantities of materials transported or used at any given time and because of the precautions required by existing State and federal regulations. However, in the most unlikely and extreme case, such a release could be a significant impact under CEQA. The following measure mitigates this impact:

HMW-MM #1: Limit Use of Extremely Hazardous Materials near Schools during Construction. The Contractor shall not handle or store an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school. Prior to construction activities, signage will be installed to delimit all work areas within 0.25 mile of a school, informing the Contractor not to bring extremely hazardous substances into the area. The Contractor would be required to monitor all use of extremely hazardous substances.

The above construction mitigation measure for hazardous materials and wastes is consistent with California Public Resources Code Section 21151.4 and would be effective in reducing the impact to a less-than-significant level.

The installation of signage to alert contractors of the presence of nearby schools will result in negligible visual impacts because they will be similar to other traffic signs in school areas. No other secondary impacts would occur in other areas. For this reason, the impacts of this mitigation measure would be less than significant.

The Authority finds that Mitigation Measure HMW-MM#1 has been required in the Preferred Alternative and that implementation of this mitigation measure will substantially reduce or avoid the project's impacts associated with temporary hazardous material and waste activities in the proximity of schools; therefore, with implementation of Mitigation Measure HMW-MM#1, this impact will be reduced to less than significant under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.8 Safety and Security (Section 3.11 of the Draft Supplemental EIR/EIS)

These Findings address impacts associated with the Preferred Alternative. Section 3.11 of the Draft Supplemental EIR/EIS describes impacts as either construction period, which examines temporary impacts, or project period, which examines permanent impacts. This categorization is carried through in these Findings.

3.8.1 Impact S&S #7: Risk of Fire and Explosions

The Preferred Alternative includes project elements that have a potential risk of fire and related hazards, including station facilities, passenger vehicles, maintenance facilities with fuel storage, traction power and paralleling stations, and the Operational Control Center. These elements have electrical equipment and/or combustible materials and represent a fire and explosion risk. The Preferred Alternative project design would include a number of layered safety and security systems, including closed-circuit television, access control, intrusion protection, fire warning and suppression systems, such as sprinklers, as well as emergency exits and notification systems,

consistent with the requirements of the National Fire Protection Association Safety Code and Standard for Fixed Guideway Transit and Passenger Rail Systems, the California Building Standards Code, and the International Building Code.

The Preferred Alternative occupies parcels that have been identified by the Authority as potential safety and security concerns, specifically with the potential for fire and explosions that could impact the HSR operation. Parcels of concern are the Halliburton Facility (34722 7th Standard Road), the Rain-for-Rent Facility (3404 State Road), and the Golden Empire Gleaners Facility (1326 30th Street), all of which are in the City of Bakersfield.

However, in the event that operations at the three facilities result in fire or explosion, such an event would result in a significant impact under CEQA. The following measures mitigate this impact:

S&S-MM #2: Risk of Fire and Explosions Haliburton Facility (Site Specific). The following site-specific mitigation shall be implemented based on the Authority's Policy for Elevated Structures to allow continued use of the Halliburton Facility with development of the F-B LGA over a portion of the facility's parcel:

- The Authority shall be required to purchase the property underneath the F-B LGA viaduct, plus a 10-foot maintenance access buffer on each side of the viaduct. An easement will then be negotiated with Halliburton for its continued use of the parcel, subject to conditions set forth by the Authority. The easement negotiated with Halliburton shall include the following stipulations:
 - Relocation of all privately controlled structures such as the old office building, acid dock, and truck wash from underneath the F-B LGA viaduct;
 - Relocation of all hazardous materials from underneath the F-B LGA viaduct. This includes the diesel fuel storage tanks, the nitrogen tank, the radioactive material bunker, the acid dock, and all of the storage of hazmat totes.
 - The existing height of the barrier for the explosives bunker shall be increased to provide line of sight protection for the HSR trainway on the F-B LGA viaduct, per Bureau of Alcohol, Tobacco, Firearms, and Explosives regulatory requirements.
 - Maintenance of the space underneath the F-B LGA viaduct to remove all hazardous materials and to minimize combustible materials such as wood, debris, and vegetation.
 - Allow audits of security protocols and processes to ensure security measures continue the level of protection warranted.
 - Allow HSR security personnel access, with notice, to the grounds around the F-B LGA viaduct to ensure security measures are being followed.
 - Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would not allow hidden materials.
 - Notice must be provided to the Authority by Halliburton in the event of any missing explosives or shortage in explosives inventory.

S&S-MM #3: Risk of Fire and Explosions Rain-For-Rent Facility (Site Specific). The following site-specific mitigation shall be implemented based on the Authority's Policy for Elevated Structures to allow continued use of the Rain-for-Rent Facility with development of the F-B LGA over a portion of the facility's parcel:

- The Authority shall be required to purchase the property underneath the F-B LGA viaduct, plus a 10-foot maintenance access buffer on each side of the viaduct. An easement will then be negotiated with Rain-for-Rent for its continued use of the parcel, subject to conditions set forth by the Authority. The easement negotiated with Rain-for-Rent shall include the following stipulations:
 - Restriction against storage or temporary location of regulated quantities of hazardous materials from underneath the F-B LGA viaduct.
 - Maintenance of the space underneath the viaduct to eliminate all flammable and hazardous materials.
 - Allow the Authority to audit Rain-for-Rent security protocols and processes to ensure security measures continue the level of protection warranted.
 - Allow HSR security personnel access, with notice, to the area around the F-B LGA viaduct to ensure security measures are being followed.
 - Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would not allow hidden materials.
 - Allow only passenger cars and small trucks and vans to be parked in the employee parking under the F-B LGA viaduct on the Rain-for-Rent parcel.

S&S-MM #4: Risk of Fire and Explosions Golden Empire Gleaners Facility (Site Specific). The following site-specific mitigation shall be implemented in all subsequent property transactions for the Golden Empire Gleaners Facility:

- Upgrade of the fire alarm and suppression system to current fire code regulations, per Office of State Fire Marshall requirements and approval.
- Prohibition of regulated amounts of hazardous materials in the structure.
- Annual inspection by the Office of the State Fire Marshal.
- Public ownership and control of the entire facility. This could be Authority ownership, or City of Bakersfield ownership with restrictions on use and access of the facility to enforce the above mitigations. Note: State owned property requires additional conditions by the Office of the State Fire Marshal that must be incorporated.
- Restrict access to the facility by uncontrolled or uninspected trucks or step vans.
- Allow audits of security protocols and processes to ensure security measures continue the level of protection warranted.
- Allows HSR security personnel access, with notice, to ensure security measures are being followed.
- Allow only trucks that can be visually verified to be empty may be parked under the F-B LGA viaduct. These trucks include flatbeds and trucks with equipment that would not allow hidden materials.
- Only passenger cars and small trucks and vans can be parked in the employee parking under the structure.
- Any change of use would require reassessment and approval.

Mitigation Measures S&S-MM #2, S&S-MM #3, and S&S-MM #4 are not anticipated to have secondary impacts on the physical environment. Typical secondary impacts associated with implementation of Mitigation Measures include, but are not limited to, air resource impacts, noise impacts, and transportation/circulation impacts. Implementation of Mitigation Measures S&S-MM #2, S&S-MM #3, and S&S-MM #4 would not in themselves cause secondary impacts as these

mitigation measures are focused on allowing continued operation of the facilities similar to existing conditions during development and operation of the Preferred Alternative. For these reasons, it is expected that secondary impacts due to implementation of the above identified mitigation measures would be less than significant under CEQA.

The Authority finds that the combination of the above listed mitigation measures would substantially lessen or avoid the Preferred Alternative's impacts associated with safety and security; therefore, with implementation of Mitigation Measures S&S-MM #2, S&S-MM #3, and S&S-MM #4, this impact will be reduced to less than significant under CEQA.

Impact S&S #7 of the Fresno to Bakersfield Section Final EIR/EIS did not identify a significant impact requiring mitigation. Mitigation Measures S&S-MM #2, S&S-MM #3, and S&S-MM #4 are specific to facilities located along the Preferred Alternative alignment and are not located along the May 2014 Project alignment. Therefore, no finding would be required for Impact S&S #7 of the May 2014 Project.

3.8.2 Impact S&S #10: Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities

The Bakersfield F Street Station would introduce new passengers into the area, which could increase the demand for fire and ambulance services. This station would have onsite security patrols, so no increased demand for police protection at the station is anticipated. However, there is potential for an impact on emergency response times, which is considered a significant impact. The following measure mitigates this impact:

S&S MM #1: Monitor Response of Local Fire, Rescue, and Emergency Service Providers to Incidents at Stations and Provide a Fair Share Cost of Service. The Authority, annually, during construction/post-construction and operational activities, would monitor response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of cost of service. Upon approval of the Fresno to Bakersfield Section, the Authority will monitor service levels in the vicinity of the Fresno, Kings/Tulare, and Bakersfield stations to determine baseline service demands. "Service levels" consist of the monthly volume of calls for fire and police protection, as well as city- or fire protection district-funded EMT/ambulance calls that occur in the station site service areas. Prior to operation of the stations for HSR service, the Authority will enter into an agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services above the average baseline service demand level for the station and HMF service areas (as established during the monitoring period). The fair share will be based on projected passenger use for the first year of operations, with a growth factor for the first 5 years of operation. This cost-sharing agreement will include provisions for ongoing monitoring and future negotiated amendments as the stations are expanded or passenger use increases. Such amendments will be made on a regular basis for the first 5 years of station operation, as will be provided in the agreement. To make sure that services are made available, impact fees will not constitute the sole funding mechanism, although impact fees may be used to fund capital improvements or fixtures (i.e., police substation, additional fire vehicle, on-site defibrillators, etc.) necessary to service delivery. After the first 5 years of operation, the Authority will enter into a new or revised agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services. The fair share will take into account the volume of ridership, past record and trends in service demand at the stations and HMF site, new local revenues derived from station area development, and any services that the Authority may be providing at the station.

No secondary effects are anticipated with the above mitigation measure. If the only need for mitigation is the provision of additional emergency response equipment, this mitigation measure will result in no impacts. If the project requires funding of additional public-service facilities, such as a police substation, mitigation may result in impacts on the physical environment. Those impacts would include emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and

cultural resources that may be present on the site of new structures. Any new or expanded government facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts.

For this reason, it is expected that impacts of mitigation would be less than significant. The Authority finds that Mitigation Measure S&S-MM #1 has been required in the project and that implementation of this mitigation measure will substantially reduce the impact on emergency services response times in the project area. With mitigation, this impact is less than significant.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.9 Socioeconomics and Communities (Section 3.12 of the Draft Supplemental EIR/EIS)

Under CEQA, economic and social impacts resulting from a project are not environmental impacts (CEQA Guidelines, § 15064, subd. (e)). The Authority has nevertheless incorporated several impact avoidance and minimization measures into the Preferred Alternative, consistent with, and in furtherance, of the Statewide Programmatic EIR/EIS environmental commitments and mitigation measures (see Appendix 2-H of the Draft Supplemental EIR/EIS). In adopting the resolution of approval of the project, the Authority confirms that the impact avoidance and minimization measures identified in Appendix 2-H are part of the Preferred Alternative.

Although economic and social impacts are not environmental impacts within the meaning of CEQA, where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project (CEQA Guidelines, Section 15131, Economic and Social Effects). Furthermore, if the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant (Ibid). The following sets forth the Authority's determination whether the physical change is significant, as determined by the significance criteria listed in Section 3.12.2.5 of the Draft Supplemental EIR/EIS and the requirements set forth in CEQA Guidelines Section 15064 subdivision (e) regarding social and economic impacts.

3.9.1 Impact SO #6: Disruption to Community Cohesion or Division of Existing Communities from Project Operation

As explained in the Draft Supplemental EIR/EIS, under CEQA, the effect of a project on a neighborhood or community is significant if a project would create a new physical barrier that isolates one part of an established community from another and potentially results in a physical disruption to community cohesion. Community impacts are, therefore typically considered less than significant under CEQA unless they divide an existing community. The Preferred Alternative has the potential to result in disruption to community cohesion and division of existing rural communities during operations. The following measures mitigate this impact:

SO-MM #1: Implement Measures to Reduce Impacts Associated with the Division of Residential Neighborhoods. The California High-Speed Rail Authority (Authority) will minimize impacts associated with the F-B LGA in the rural residential areas around the community of Oildale as well as in urban residential areas in Shafter and Bakersfield by conducting special outreach to affected homeowners and residents to fully understand their special relocation needs. The Authority will make every effort to locate suitable replacement properties that are comparable to those currently occupied by these residents, including constructing suitable replacement facilities if necessary.

In cases where residents wish to remain in the immediate vicinity, the Authority will take measures to purchase vacant land or buildings in the area, and consult with local authorities over matters such as zoning, permits, and moving of homes and replacement of services and utilities, as appropriate. Before land acquisition, the Authority will conduct community

workshops to obtain input from those homeowners whose property would not be acquired, but whose community would be substantially altered by construction of high-speed rail (HSR) facilities, including the loss of many neighbors, to identify measures that could be taken to mitigate impacts on those who remain (including placement of sound walls and landscaping, and potential uses for remnant parcels that could benefit the community in the long term).

SO-MM #3: Implement Measures to Reduce Impacts Associated with the Displacement of Key Community Facilities. The Authority will minimize impacts resulting from the disruption to key community facilities including the Golden Empire Transit District, Valley Oaks Charter School, Bakersfield Department of Motor Vehicles, the Golden Living Center (a nursing facility).

The Authority will consult with the appropriate respective parties before land acquisition to assess potential opportunities to reconfigure land use and buildings and/or relocate affected facilities, as necessary, to minimize the disruption of facility activities and services, and also to ensure relocation that allows the community currently served to continue to access these services.

Because many of these community facilities are located in Hispanic communities, the Authority will continue to implement a comprehensive Spanish-language outreach program for these communities as land acquisition begins. This program will facilitate the identification of approaches that would maintain continuity of operation and allow space and access for the types of services currently provided and planned for these facilities. Also, to avoid disruption to these community amenities, the Authority will ensure that all reconfiguring of land uses or buildings, or relocating of community facilities is completed before the demolition of any existing structures.

SO-MM #5: Develop Measures to Minimize the Potential for Physical Deterioration. The Authority will work with the communities on the design of project features consistent with Technical Memorandum 200.6, Aesthetic Guidelines for Non-Station Structures (Authority 2008). The guidelines for station and non-station structures allow for contextual design responses to site-specific or unique conditions, or "context sensitive solutions." Context sensitive solutions mean structural aesthetics must respond to local settings with concern for the human scale, building scale, and the vantage points from which the structures will be viewed. Included in the Authority's design principles is the requirement that the structures enhance local environments and community context. Landscaping will be used to visually integrate project structures into the local context with plantings that recreate the natural setting into which they are placed. The aesthetic design of project structures, in combination with landscape and urban design that serve the local community can create a positive contribution to the surrounding visual context and minimize the potential for physical deterioration.

Mitigation Measure SO-MM #1 includes plans to conduct outreach activities in affected communities and to consult with property owners; these activities will result in no impacts on the physical environment.

Mitigation Measure SO-MM#3 will require the reconfiguration of land or construction of replacement structures for community facilities impacted by the Preferred Alternative. Potential impacts on the physical environment from this mitigation would result from construction activities, including emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and cultural resources that may be present on the site of new structures. Any new facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts to a less-than-significant level.

Modifications to areas underneath the elevated guideway and along the edges of the right-of-way under Mitigation Measure SO-MM #5 could result in potential impacts on the physical environment. The intention of this mitigation measure is to lessen the aesthetic impacts from the

introduction of new structures by improving the visual quality of the surroundings. Creating gardens and trails and planting trees will require temporary use of excavation equipment and other landscaping tools. Impacts of this mitigation measure could include noise, emissions, and fugitive dust from construction-related activities. Any new recreation facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate analysis under CEQA, including measures to mitigate impacts to a less-than-significant level.

The Authority finds that Mitigation Measures SO-MM #1, SO-MM #3, and SO-MM #5 have been required in the Preferred Alternative and that implementation of these measures will reduce the impact to a less-than-significant level.

Mitigation Measure SO-MM #3 identifies displaced facilities located along the Preferred Alternative alignment that are not located along the May 2014 Project alignment. Therefore, the facility-specific text would not apply to the May 2014 Project; however, the general text of SO-MM #3 would apply to the May 2014 Project and would include the specific facilities listed in Table 3.12-18 of the Fresno to Bakersfield Section Final EIR/EIS. This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in the Socioeconomics and Communities Section of Technical Appendix 8-A of the Draft Supplemental EIR/EIS.

3.9.2 Impact SO #12: Displacement of Community Facilities

The Preferred Alternative has the potential to displace community facilities. The Preferred Alternative would displace three community facilities, all of which are located in Bakersfield's metropolitan area. These facilities would include the Golden Empire Transit District, Valley Oaks Charter School (one of the buildings), and the Bakersfield Department of Motor Vehicles. The following measure mitigates this impact:

SO-MM #3: Implement Measures to Reduce Impacts Associated with the Displacement of Key Community Facilities. Details regarding SO-MM #3 are described above.

Mitigation Measure SO-MM #3 will require the reconfiguration of land or construction of replacement structures for community facilities impacted by the HSR. Potential impacts on the physical environment from this mitigation would result from construction activities, including emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and cultural resources that may be present on the site of new structures. Any new facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts. For this reason, it is expected that impacts of mitigation would be less than significant.

The Authority finds that Mitigation Measure SO-MM #3 has been required in the project and that implementation of this mitigation measure will reduce the project's impacts to the community facilities to less-than-significant levels.

Mitigation Measure SO-MM #3 identifies displaced facilities located along the Preferred Alternative alignment that are not located along the May 2014 Project alignment. Therefore, the facility-specific text would not apply to the May 2014 Project; however, the general text of SO-MM #3 would apply to the May 2014 Project and would include the specific facilities listed in Table 3.12-18 of the Fresno to Bakersfield Section Final EIR/EIS. This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in the Socioeconomics and Communities Section of Technical Appendix 8-A of the Draft Supplemental EIR/EIS.

3.10 Agricultural Lands (Section 3.14 of the Draft Supplemental EIR/EIS)

Much of the Preferred Alternative alignment passes through rural lands in Kern County between Shafter and Bakersfield. Implementation of the Preferred Alternative would result in the conversion of agricultural land to nonagricultural use, would divide lands under agricultural use

resulting in parcel severance, and would convert lands under Williamson Act or Farmland Security Zone contracts, potentially voiding those contracts.

3.10.1 Impact AG #4: Permanent Conversion of Agricultural Land to Nonagricultural Use

The Preferred Alternative would permanently convert approximately 372 acres of Important Farmland to non-agricultural use to construct HSR infrastructure and ancillary facilities. Important Farmland includes farmland classified as prime, unique, statewide important, and locally important as shown on maps prepared for the Department of Conservation's Farmland Mapping and Monitoring Program. Included within this acreage are remnant parcels identified to be unlikely to continue to support agricultural use due to their size, shape, access, location, or other factors. The permanent conversion of Important Farmland to non-agricultural use is a significant impact under CEQA. The following measures mitigate this impact:

AG-MM #1: Identify and Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. The Authority has entered into an agreement with the DOC California Farmland Conservancy Program to implement its agricultural land mitigation for the HST project in the Merced to Fresno and Fresno to Bakersfield sections. The Authority will fund the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers in the Fresno to Bakersfield section. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio of not less than 1:1 for lands that are permanently converted to agricultural use by the project. In addition, the Authority will provide an additional increment of Important Farmland mitigation acreage, above the 1:1 minimum ratio, at a level consistent with the terms of a settlement agreement the Authority reached with agricultural interests in *County of Madera, et al. v. California High-Speed Rail Authority*. This approach will provide consistency in calculating the total amount of acres of agricultural conservation easements across the Central Valley.

The California Farmland Conservancy Program will work with local, regional, or statewide entities whose purpose includes the acquisition and stewardship of agricultural conservation easements. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements. These will include, but are not limited to, provisions to ensure that the easements will conform to the requirements of Public Resources Code Section 10252 and to prioritize the acquisition of willing seller easements on lands that are adjacent to other protected agricultural lands or that would support the establishment of greenbelts and urban separators.

AG-MM #2: Conserve Additional Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland) for Indirect Impacts Adjacent to HSR Permanently Fenced Infrastructure. The Authority will fund the purchase of agricultural conservation easements from willing sellers through the California Farmland Conservancy Program at a ratio of not less than 0.5:1 for Important Farmland within a 25-foot-wide area adjacent to permanently fenced HSR infrastructure, but only to the extent that such acreage is not otherwise subject to mitigation under AG-MM #1. The Authority shall document implementation of this measure through issuance of a compliance memorandum.

Although implementation of AG-MM #1 and AG-MM #2 will not avoid the significant impact of converting Important Farmland to HSR project use, the Authority nevertheless finds that AG-MM #1 and AG-MM #2 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that these mitigation measures will be effectively implemented

based on the strong record of success by the Department of Conservation California Farmland Conservancy Program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HSR project will cause a net loss of the Important Farmland resource in the South San Joaquin Valley, which is the State's leading agricultural production region. In light of the net loss of the Important Farmland resource, the Authority finds that the conversion of Important Farmland lands to non-agricultural use from the HSR Project cannot be mitigated to a less-than-significant level. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in the Section 3.14 of the Draft Supplemental EIR/EIS.

3.10.2 Impact AG #5: Effects on Agricultural Land from Parcel Severance

The Preferred Alternative will result in indirect impacts to Important Farmland parcels as a result of parcel severance by the HSR system (i.e., the permanent project footprint). This acreage reflects a significant impact. The following measures mitigate this impact:

AG-MM #1: Identify and Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Details regarding AG-MM #1 are described above.

AG-MM #2: Conserve Additional Important Farmland (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland) for Indirect Impacts Adjacent to HSR Permanently Fenced Infrastructure. Details regarding AG-MM #2 are described above.

With implementation of Mitigation Measures AG-MM #1 and AG-MM #2, adverse effects associated with the conversion of Important Farmland would be mitigated to less than significant. These mitigation measures identify the responsible party (Authority) to ensure that the measures are appropriately implemented. Considering that agricultural land in the San Joaquin Valley is among the most valuable in the United States, it is anticipated that while parcel ownership may change to due to severance, the larger remnant parcels would remain in agricultural use.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in the Section 3.14 of the Draft Supplemental EIR/EIS.

3.10.3 Impact AG #6: Effects on Land under Williamson Act or Farmland Security Zone Contracts, Local Zoning

The Preferred Alternative will affect land currently under Williamson Act contracts. Specifically, the Authority will acquire right-of-way needed for HSR facilities, and in the process it may split a parcel of land that is currently under a Williamson Act contract in a manner that leaves the private property owner with a privately owned remainder parcel that may be physically farmable, but is now smaller than the minimum qualifying size under County rules for Williamson Act tax benefits. The Draft Supplemental EIR/EIS conservatively identifies the potential for the Preferred Alternative to cause land (including Important Farmland) currently under a Williamson Act contract to no longer qualify for the tax benefits, and to potentially be converted to non-agricultural use, as a significant impact under CEQA. For the Preferred Alternative, there is a possible conversion of 114 acres of Williamson Act contracted land, not all of which is Important Farmland. The following measure mitigates this impact:

AG-MM #1: Identify and Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Details regarding AG-MM #1 are described above.

The Authority finds that this mitigation measure has been required in the Preferred Alternative and that it will permanently protect more than 372 acres of Important Farmland from conversion to a non-agricultural use, whereas Impact AG #6 has the potential to remove 114 acres of land under Williamson Act contracts from temporary protections provided by tax benefits. The Authority thus finds that AG-MM #1 provides three times more permanently protected acres of Important Farmland than land that may lose temporary protection under Williamson Act contracts. The Authority also finds that AG-MM #1 will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. Based on the magnitude of permanently preserved acres of Important Farmland under AG-MM #1 relative to the number of acres that potentially could lose Williamson Act contract tax benefits, and based on the fact that of those lands, not all are Important Farmland, the Authority finds that this impact is substantially lessened and reduced to a less-than-significant level.

The Authority further finds that Kern County has jurisdiction over and procedures in place to allow for a variance in minimum parcel size for Williamson Act contracts, depending on the size of the remainder parcel and its proximity to other parcels the owner may have under a separate contract, that has the potential to further minimize the significant impact of additional agricultural land conversion. The Authority finds that Kern County can and should allow for landowners to apply for and receive a variance to maintain Williamson Act contracts where the remainder parcel size falls below the county minimum and above the state's minimum parcel size, but would otherwise qualify for a variance under each county's procedures and rules.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project as augmented by additional analysis in the Section 3.14 of the Draft Supplemental EIR/EIS.

3.11 Parks, Recreation and Open Space (Section 3.15 of the Draft Supplemental EIR/EIS)

The Preferred Alternative could result in impacts to parks, recreation, and open space resources.

3.11.1 Impact PK #1: Construction Impacts on Parks, Recreation, Open Space and School District Recreation Facilities

Construction of the Preferred Alternative could cause temporary (construction-related) disturbances in areas adjacent to parks, recreational areas, open space areas, and school district recreation facilities, which could be a significant impact under CEQA. Multiple construction-related factors affect these resources, including but not limited to noise, aesthetics, and access restrictions. The following measures mitigate this impact:

AVR-MM #1a: Minimize Visual Disruption from Construction Activities. The project will adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:

- Minimize pre-construction clearing to that necessary for construction.
- Limit the removal of buildings to those that would obstruct project components.
- When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views.
- After construction, regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and

types to that which was removed based upon local jurisdictional requirements. If there are no local jurisdictional requirements, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage similar to the coverage provided by the trees that were removed for construction.

- To the extent feasible, do not locate construction staging sites within the immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days.

AVR-MM #1b: Minimize Light Disturbance during Construction. Where construction lighting will be required during nighttime construction, the contractor will be required to shield such lighting and direct it downward in such a manner that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage offsite.

N&V-MM #1: Construction Noise Mitigation Measures. Details regarding N&V-MM #1 are described in Section 3.3, above.

PP-MM #1: Temporary Restricted Access to Park Facilities During Construction. Prior to temporary restricted access to the park facilities, the contractor will ensure that connections to the unaffected park portions or nearby roadways are maintained. If a proposed linear park closure restricts connectivity, the contractor will provide alternative pedestrian and bicycle access via a temporary detour of the pedestrian walkway using existing roadways or other public rights of way. The contractor will provide detour signage and lighting and will ensure that the alternative routes meet all public safety requirements.

Although the visual degradation during construction would be more noticeable in urban areas adjacent to residences and parkways, the construction activities are considered temporary as they would cease after completion. Implementation of AVR-MM#1b would substantially lessen or avoid impacts associated with the use of nighttime lighting during construction by reducing the amount of nighttime lighting emitted by construction sites and avoiding off-site light spillage visible to viewers. There would be no secondary impacts resulting from these mitigation measures.

Mitigation Measure PP-MM #1 will require installing detour signage and lighting for alternative pedestrian and bicycle routes. These activities will result in negligible impacts on the physical environment, while improving overall park access and public safety (through the provision of clear direction and lighting). The impacts of this mitigation measure would be less than significant under CEQA.

The Authority finds that Mitigation Measures AVR-MM#1a and AVR-MM#1b have been required in the Preferred Alternative and that implementation of Mitigation Measure AVR-MM#1a will substantially lessen or avoid impacts associated with the visual disturbance during construction, and that implementation of Mitigation Measure AVR-MM#1b will substantially reduce the amount of nighttime lighting emitted; therefore, these impacts are less than significant.

Noise impacts would occur during construction activities and would cease after construction is complete. The Authority finds that Mitigation Measure N&V-MM #1 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce construction noise impacts to park, recreation, and open space facilities below the FTA construction noise limits; therefore, this impact would be reduced to a less-than-significant impact.

The Authority finds that Mitigation Measure PP-MM #1 has been required in the Preferred Alternative and that implementation of this mitigation measure will substantially reduce temporary impacts to parks, recreation, open space, and school district recreational facilities. With mitigation, this impact is less than significant.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.11.2 Impact PK #2: Project Acquisition of Parks, Recreation, and Open Space Resources

The Preferred Alternative would result in the permanent acquisition of 0.66 acre of land at the Kern River Parkway. This would be a significant impact under CEQA. At the Kern River Parkway, the Preferred Alternative would cross over areas used by pedestrians and recreationists. Footings for the columns supporting the elevated guideway would be constructed in the Kern River Parkway, but the completed guideway would span perpendicularly over the bike path of the Kern River Parkway, thereby avoiding permanent restrictions to access and use. The park lands underneath the elevated guideways would remain available for park use in accordance with the Authority's policies. As such, the recreational activities that are currently available in this section of the Kern River Parkway will continue to be available once the elevated guideways are installed. The placement of footings would not substantially impair the features of the Kern River Parkway because they would not permanently restrict access to the bike path and surrounding recreational area or change the recreational use of the area crossed by the guideway, thereby allowing for the same recreational activities to continue around the footings.

The following measure mitigates this impact:

PP-MM #3: Collect Additional Maintenance Funds. The Authority will consult with the affected jurisdiction to identify its share of funding to provide additional maintenance, labor, and repairs for the existing park areas to remedy any potential degradation of existing facilities that may result from increased facility use. Prior to project construction, the Authority will enter into an agreement with the affected jurisdiction that establishes the funding share and describes the relative roles of the Authority and the affected jurisdictions in providing continuous maintenance of existing play areas, or compensation for play areas acquired in order to accommodate the project.

The Authority finds that Mitigation Measure PP-MM #3 has been required in the Preferred Alternative and that implementation of this mitigation measure will reduce parks, recreation, and open space impacts to less than significant under CEQA.

Mitigation Measure PP-MM #3, as written above, applies specifically to the Preferred Alternative. Mitigation Measure PP-MM #3, as applicable to the May 2014 Project alignment, is documented on page 1-50 of the Fresno to Bakersfield Mitigation Monitoring and Enforcement Program. This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12 Aesthetics and Visual Resources (Section 3.16 of the Draft Supplemental EIR/EIS)

Implementation of the Preferred Alternative could result in impacts to aesthetics and visual resources during both construction and operation. Construction equipment and activities would temporarily introduce new elements to the landscape, while the operation of the HSR train would include a new and permanent feature to the landscape. In the Draft Supplemental EIR/EIS, analysis of these impacts was broken into landscape units, including Shafter Town, Rural San Joaquin County, North Bakersfield, the Kern River Landscape, and the Valley Oaks Charter School. Additional impacts would result from introduced light and glare.

3.12.1 Impact AVR #2: Construction Impacts on Existing Visual Quality

Clearing, earthmoving, and erection of project facilities would introduce new lines, forms, and colors that would typically contrast with the existing landscape forms and patterns in urban and rural areas causing a decrease in the visual unity and intactness of most existing views. This would be most noticeable in rural areas where largely pastoral scenes would be disturbed by intensive construction activities, causing a reduction in the visual quality of landscapes by one to

two levels of visual quality depending on the setting. Most construction activities would cease within 1 to 2 years at any given location. The exception to this would be concrete batch plants used to fabricate project components and some construction laydown areas that would be used for up to 5 years. Because construction could reduce the visual quality category of a landscape by one or two levels, depending upon the setting and viewer sensitivity would often be moderate or, in some cases, high, the effect of project construction on existing visual quality is significant under CEQA. The following measure mitigates this impact:

AVR-MM #1a: Minimize Visual Disruption from Construction Activities. Details regarding AVR-MM #1a are described above.

Implementation of this mitigation measure is not expected to result in secondary impacts.

Although the visual degradation during construction would be more noticeable in urban areas adjacent to residences and parkways, the construction activities are considered temporary as they would cease after completion.

The Authority finds that Mitigation Measure AVR-MM #1a has been required in the Preferred Alternative and that implementation of this mitigation measure will substantially lessen or avoid impacts associated with the visual disturbance during construction; therefore, this impact will be reduced to less than significant under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12.2 Impact AVR #3: Construction Impact from Light and Glare

Construction of the Preferred Alternative would create new sources of light and glare that may temporarily affect nighttime views. Lighting associated with nighttime construction would increase ambient light, which may adversely affect nighttime views. This may be an annoyance in urban areas, such as Shafter and Bakersfield; it may also be an annoyance in rural residential areas along the HSR alignment. Construction would not occur at night at all times; therefore, this impact would be intermittent over the construction period. Construction at any given location would typically last 1 to 2 years, although construction activities at concrete batch plants and some construction laydown areas would last for up to 5 years. Because construction light and glare could be an annoyance to viewers particularly in rural areas, reducing the visual quality category of a landscape by one level, depending upon the setting, and because viewer sensitivity would often be moderate or, in some cases, high, the impact would be significant under CEQA. The following measure mitigates this impact:

AVR-MM #1b: Minimize light disturbance during construction. Details regarding AVR-MM #1b are described above.

Implementation of this mitigation measure is not expected to result in secondary impacts.

The Authority finds that Mitigation Measure AVR-MM #1b has been required in the Preferred Alternative and that implementation of AVR-MM #1b will substantially lessen or avoid impacts associated with the use of nighttime lighting during construction this impact would be reduced to less than significant under CEQA.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12.3 Impact AVR #4: Lower Visual Quality in the Shafter Town Landscape Unit

As described in Section 3.16.4.2 of the Draft Supplemental EIR/EIS, the Preferred Alternative will result in significant visual quality impacts to the Shafter Town Landscape Unit. The Preferred Alternative would pass through a mixture of commercial, residential, industrial, and agricultural areas. The conversion of the existing, at-grade BNSF to a raised embankment with a retaining wall would degrade the intactness of views from the historic museum, which originally served as a

depot for an at-grade railway. Because of the loss of visual unity and intactness, visual quality would decline one level, from moderately high to moderate. Furthermore, visitors to the museum would have a high viewer response to the change in the property's visual landscape, which is an important part of the viewer experience. This would be a significant impact under CEQA. The following measures mitigate this impact:

AVR-MM #2d: Replant Unused Portions of Lands Acquired for the HSR. After construction is complete, the Authority will plant vegetation within lands acquired for the project (e.g., shifting roadways) that are not used for the HST or related supporting infrastructure. Plantings will allow adequate space between the vegetation and the HST alignment and catenary lines. All street trees and other visually important vegetation removed in these areas during construction will be replaced with similar vegetation that, upon maturity, will be similar in size and character to the removed vegetation. The Authority will ensure that vegetation will be continuously maintained and appropriate irrigation systems will be installed within the planting areas. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted.

AVR-MM #2f: Landscape Treatments along HSR Project Overcrossings and Retained Fill Elements of the HSR. Upon the completion of construction, the contractor will plant the surface of the ground supporting the overpasses (slope-fill overpasses) and retained fill elements with vegetation consistent with the surrounding landscape in terms of vegetative type, color, texture, and form. During final design, the Authority will consult with the affected cities and counties regarding the landscaping program for planting the slopes of the overcrossings and retained fill. Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed if needed. Where wall structures supporting the overpasses or retained fill are proposed, the structure will employ architectural details and low-maintenance trees and other vegetation to screen the structure, minimize graffiti, and reduce the effects of large walls. Surface coatings will be applied on wood and concrete to facilitate cleaning and the removal of graffiti. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable time after notification.

AVR-MM #2g: Provide Sound Barrier Treatments. The contractor will design a range of sound barrier treatments for visually sensitive areas, such as those where residential views of open landscaped areas would change or in urban areas where sound barriers would adversely affect the existing character and setting (see the description of sound barriers in Table 3.16-2 [of the Final EIR/EIS]). The Authority will develop the treatments during final design and integrate them into the final project design. The treatments will include, but are not limited to, the following:

- Sound barriers along elevated guideways may incorporate transparent materials where sensitive views would be adversely affected by solid sound barriers.
- Sound barriers will use non-reflective materials and will be of a neutral color.
- Surface design enhancements and vegetation appropriate to the visual context of the area will be installed with the sound barriers. Vegetation will be installed consistent with the provisions of AVR-MM#2f. Surface enhancements will be consistent with the design features developed under AVR-MM#2a, and will include architectural elements (i.e., stamped pattern, surface articulation, and decorative texture treatment as determined acceptable to the local jurisdiction. Surface coatings will be used on wood and concrete sound barriers to facilitate cleaning and the removal of graffiti.

AVR-MM #2h: Screen Traction Power Distribution Stations and Radio Communication Towers. Upon completion of station construction, the Authority will screen the traction power distribution facilities, including substations (located at approximately 30-mile intervals along the Preferred Alternative) and radio communications towers, from public view through the use

of landscaping or solid walls/fences. This will consist of context-appropriate landscaping of a type and scale that does not draw attention to the station. Plant species will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed within the landscaped areas. Walls will be constructed of cinder-block or similar material and will be painted a neutral color to blend in with the surrounding context. If a chain-link or cyclone fence is used, it will include wood slats in the fencing. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable period as agreed between the Authority and local jurisdiction.

None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM #2d, AVR-MM #2f, AVR-MM #2g, and AVR-MM #2h have been required in the Preferred Alternative and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within the Shafter Town Landscape Unit. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12.4 Impact AVR #4: Lower Visual Quality in the Rural San Joaquin Valley Landscape Unit

As described in Section 3.16.4.2 of the Draft Supplemental EIR/EIS, the Preferred Alternative will result in significant visual quality impacts to the Rural San Joaquin Landscape Unit. Although generally of moderate intactness and unity, this landscape often lacks variety and vividness because of the ubiquity and uniformity of orchards and vineyards. Viewers in this landscape are often agricultural workers, rural residents, and motorists on nearby roads. Of these, nearby rural residents at single, isolated homes constitute the primary high-sensitivity viewer group that would be affected by the Preferred Alternative. Rural residences would be located as close as approximately 130 feet away from HSR facilities and 340 feet from the centerline of the HSR alignment. The sensitivity of other viewer groups in this landscape unit ranges from moderate to low. The following measures mitigate this impact:

AVR-MM #2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context. During final design of the elevated guideways and the Fresno, Kings/Tulare Regional, and Bakersfield stations, the contractor partnering with the Authority will coordinate with local jurisdictions on the design of these facilities so that they are designed appropriately to fit in with the visual context of the areas near them. This will include the following activities:

- For stations: During the station design process, establish a local consultation process with the Cities of Fresno and Bakersfield, and the cities and communities surrounding the Kings/Tulare Regional Station, as necessary, to identify and integrate local design features into the station design through a collaborative, context-sensitive solutions approach. The process will include activities to solicit community input in their respective station areas. This effort will be coordinated with the station area planning process that will be undertaken by those cities under their station area planning grants.

- For elevated guideways in cities or unincorporated communities: During the elevated guideway design process, establish a process with the city or county with jurisdiction over the land along the elevated guideway to advance the final design through a collaborative, context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements that are to be incorporated into the final guideway designs. The process will include activities to solicit community input in the affected neighborhoods.

Actions taken to help achieve integration with the local design context during the context-sensitive solutions process will include the following:

- Design HST stations and associated structures such as elevators, escalators, and walkways to be attractive architectural elements or features that add visual interest to the streetscapes near them.
- Design HST station parking structures and adjacent areas to integrate visually into the areas where they would be located. Where the city has adopted applicable downtown design guidelines, the parking structures and adjacent areas will be designed to be compatible with the policies and principles of those guidelines.
- For the elevated guideways and columns, incorporate architectural elements, such as graceful curved or tapered sculptural forms and decorative surfaces, to provide visual interest. Include decorative texture treatments on large-scale concrete surfaces such as parapets and other portions of elevated guideways. Include a variety of texture, shadow lines, and other surface articulation to add visual and thematic interest. Closely coordinate the design of guideway columns and parapets with station and platform architecture to promote unity and coherence where guideways lie adjacent to stations.
- Integrate trees and landscaping into the station streetscape and plaza plans where possible to soften and buffer the appearance of guideways, columns, and elevated stations. This will be consistent with the principles of crime prevention through environmental design.
- For the stations, structures, and related open spaces: incorporate design features that provide interest and reflect the local design context. These features could include landscaping, lighting, and public art. The designs in cities and unincorporated communities will reflect the results of the context-sensitive solutions design process. During the context-sensitive solutions design process, the HST project's obligations and constraints related to planning, mitigation, engineering, performance, funding, and operational requirements will be taken into consideration.

AVR-MM #2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. During development of the final design, the Authority will work with the affected cities and counties to develop a project site and landscape design plan for the areas disturbed by the project. As a result of following these plans, the design features identified in AVR-MM #2a and the park mitigation measure PP-MM #3 will be implemented.

AVR-MM #2c: Screen At-Grade, Raised Embankments, and Elevated Guideways Adjacent to Residential Areas. Consistent with the design features developed under AVR-MM#2a, the contractor will plant trees along the edges of the rights-of-way in locations adjacent to residential areas. This will help reduce the visual contrast between the elevated guideway or raised embankment and the residential area. The species of trees to be installed will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The crowns of trees used should ultimately be tall enough so that upon maturity they will partially, or fully, block or screen views of the elevated guideway or raised embankment from adjacent at-grade areas. Trees should allow ground-level views under the crowns (with pruning if necessary) while not interfering with the 15-foot

clearance requirement for the guideway. The trees will be continuously maintained and appropriate irrigation systems will be installed within the tree planting areas.

AVR-MM #2d: Replant Unused Portions of Lands Acquired for the HSR. Details regarding AVR-MM #2d are described above.

AVR-MM #2e: Provide Offsite Landscape Screening Where Appropriate. Where onsite landscape screening measures as described under AVR-MM #2d cannot provide effective screening to significantly affected high-sensitivity receptors such as nearby rural residential areas, provide offsite screening, as appropriate, if desired by affected residential owners.

AVR-MM #2h: Screen Traction Power Distribution Stations and Radio Communication Towers. Details regarding AVR-MM #2h are described above.

None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM #2a, AVR-MM #2b, AVR-MM #2c, AVR-MM #2d, AVR-MM #2e, and AVR-MM #2h have been required in the project and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within the Rural San Joaquin Landscape Unit. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12.5 Impact AVR #4: Lower Visual Quality in the North Bakersfield Landscape Unit

As described in Section 3.16.4.2 of the Draft Supplemental EIR/EIS, the Preferred Alternative will result in significant visual quality impacts to the North Bakersfield Landscape Unit. Southwest of the community of Oil Junction, the Preferred Alternative would cross over to east side of SR 99. Beyond Airport Drive, the Preferred Alternative would cross over SR 204 and would run parallel to and east of the highway. The HSR would be constructed on an elevated viaduct throughout this landscape unit, which is characterized primarily by commercial and industrial land uses, as well as cultivated fields south of 7th Standard Road. Roadway overcrossings of the viaduct would be built at 7th Standard Road, Snow Road, SR 99, Olive Drive, State Road, and Airport Drive. Multifamily residential buildings and single-family residences along Norris Road to the west of SR 99 would have much closer and more direct views of the Preferred Alternative from a distance of at least 300 feet. The introduction of an elevated viaduct at this distance from residences would increase the industrial character of foreground views, contrasting with the residential character of the area and reducing visual intactness and unity. Visual quality would decline one level, from moderately low, to low. With the high sensitivity of residents to visual effects, the Preferred Alternative would have a significant impact to these residents under CEQA. The following measures mitigate this impact:

AVR-MM #2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context. Details regarding AVR-MM #2a are described above.

AVR-MM #2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. Details regarding AVR-MM #2b are described above.

AVR-MM #2c: Screen At-Grade, Raised Embankments, and Elevated Guideways Adjacent to Residential Areas. Details regarding AVR-MM #2c are described above.

AVR-MM #2d: Replant Unused Portions of Lands Acquired for the HSR. Details regarding AVR-MM #2d are described above.

AVR-MM #2e: Provide Offsite Landscape Screening Where Appropriate. Details regarding AVR-MM #2e are described above.

AVR-MM #2g: Provide Sound Barrier Treatments. Details regarding AVR-MM #2g are described above.

AVR-MM #2h: Screen Traction Power Distribution Stations and Radio Communication Towers. Details regarding AVR-MM #2h are described above.

None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM #2a, AVR-MM #2b, AVR-MM #2c, AVR-MM #2d, AVR-MM #2e, AVR-MM #2g, and AVR-MM #2h have been required in the Preferred Alternative and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within the North Bakersfield Landscape Unit. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

The Preferred Alternative traverses the North Bakersfield Landscape Unit and the May 2014 Project would not. Instead the May 2014 Project would traverse the Rosedale/Greenacres Landscape Unit. This Preferred Alternative would result in a significant impact on the North Bakersfield Landscape Unit, where the May 2014 Project would not. The May 2014 Project would result in a significant impact on the Rosedale/Greenacres Landscape Unit, where the Preferred Alternative would not.

3.12.6 Impact AVR #4: Lower Visual Quality in the Kern River Landscape Unit

As described in Section 3.16.4.2 of the Draft Supplemental EIR/EIS, the Preferred Alternative will result in significant visual quality impacts to the Kern River Landscape Unit. The Preferred Alternative would cross the Kern River on an elevated viaduct roughly parallel to and between SR 204 and the UPRR. This location has moderately high visual quality because of the predominance of grassland and riparian vegetation, despite the intrusion of urban elements like the SR 204 and UPRR bridges and towers supporting power lines to the east. The introduction of an elevated viaduct and HSR station visible from the Kern River Parkway Bike Trail would reduce the intactness of the visual environment, causing a decline of one level in visual quality. Because of the high sensitivity of recreational users of the Kern River Parkway Bike Trail to visual elements, this decline in visual quality would be a significant impact under CEQA. The following measures mitigate this impact:

AVR-MM #2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context. Details regarding AVR-MM #2a are described above.

AVR-MM #2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. Details regarding AVR-MM #2b are described above.

AVR-MM #2d: Replant Unused Portions of Lands Acquired for the HSR. Details regarding AVR-MM #2d are described above.

AVR-MM #2g: Provide Sound Barrier Treatments. Details regarding AVR-MM #2g are described above.

AVR-MM #2h: Screen Traction Power Distribution Stations and Radio Communication Towers. Details regarding AVR-MM #2h are described above.

AVR-MM #2i: Install Decorative Parapet Design at Kern River Crossing. Consistent with Mitigation Measure AVR-MM #2a. During final design of the elevated viaduct over the Kern River and the Kern River Parkway Bike Trail, the Authority will consult with the City of Bakersfield to design a decorative parapet that fits with the viaduct's visual context. Reveals or recessed surfaces and motifs reflecting the natural environment of the Kern River shall be used on the outside surface of the parapet. The parapet and box girder shall be designed as a unified visual composition.

None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM #2a, AVR-MM #2b, AVR-MM #2d, AVR-MM #2g, AVR-MM #2h, and AVR-MM #2i have been required in the Preferred Alternative and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within the Kern River Landscape Unit. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.12.7 Impact AVR #5: Lower Visual Quality at Valley Oaks Charter School

As part of the Preferred Alternative, a new roadway (34th Street) would cross the UPRR railway on an overpass immediately southwest of the school. Primary outdoor use areas at the Valley Oaks Charter School would have direct exposure to the concrete columns and guideway of the elevated viaduct and to the new roadway. These are all urban elements that would result in a substantial decline in visual intactness, unity, and overall visual quality. Considering the moderate viewer response onsite, the Preferred Alternative would have a significant impact under CEQA. The following measures mitigate this impact:

AVR-MM #2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context (Kings/Tulare Regional Station). Details regarding AVR-MM #2a are described above.

AVR-MM #2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. Details regarding AVR-MM #2b are described above.

AVR-MM #2d: Replant Unused Portions of Lands Acquired for the HSR. Details regarding AVR-MM #2d are described above.

AVR-MM #2e: Provide Offsite Landscape Screening Where Appropriate. Details regarding AVR-MM #2e are described above.

AVR-MM #2f: Landscape Treatments along HSR Project Overcrossings and Retained Fill Elements of the HSR. Details regarding AVR-MM #2f are described above.

AVR-MM #2g: Provide Sound Barrier Treatments. Details regarding AVR-MM #2g are described above.

None of the mitigation measure options are expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM #2a, AVR-MM #2b, AVR-MM #2c, AVR-MM #2d, AVR-MM #2e, AVR-MM #2f, and AVR-MM #2g have been required in the Preferred Alternative and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality at the Valley Oaks Charter School. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

The Preferred Alternative would result in a significant visual impact to the Valley Oaks Charter School and the May 2014 Project would not. Instead the May 2014 Project would result in a significant visual impact on Warriors for Christ Academy in Rosedale, while the Preferred Alternative would not. This finding, while for different school facilities, is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.13 Cultural Resources (Section 3.17 of the Draft Supplemental EIR/EIS)

This section sets forth the Authority's CEQA findings concerning the impacts of the Preferred Alternative on cultural resources. Because the project is also a federal undertaking, the project is subject to National Environmental Policy Act and Section 106 of the National Historic Preservation Act (NHPA), which provides considerable protection for cultural resources. The development of the management documents and treatment plans pursuant to Section 106 regulations involve extensive impact analysis, project re-design, consultation with Native Americans, and other consultation with agencies to develop a plan that provides for the best possible preservation planning and other mitigation measures for the resource present at the project site. As described below, the Section 106 process is a separate, but complementary, method for protection for cultural resources, distinct from CEQA.

As explained in the Fresno to Bakersfield Section Final EIR/EIS, a Programmatic Agreement (PA) to satisfy the requirements of Section 106 for the project has been signed by the FRA, the Authority, the Advisory Council on Historic Preservation, the State Historic Preservation Office (SHPO), and consulting parties. The PA provides an overall regulatory framework for conducting the Section 106 process throughout the HSR System and the documentation process for the Fresno to Bakersfield Section was conducted in accordance with the PA.

The PA also presents the approach for treatment of historic properties, including development of a Memorandum of Agreement (MOA) for each HSR section to address the resolution of adverse effects on historic properties, defined as those cultural objects, sites, or districts that meet the eligibility criteria for listing in the National Register of Historic Places. The MOA stipulates the treatment measures that will be applied for cultural resources impacted by the project and calls for the development of two treatment plans: an Archaeological Treatment Plan and a Built Environment Treatment Plan (BETP). The Archaeological Treatment Plan and BETP will set forth a prescriptive process by which these treatment measures will be applied to each known resource and will outline measures for the phased identification of historic properties as additional parcel access is obtained and design work is completed. The MOA and treatment plans provide specific performance standards that ensure each impact will be avoided, minimized, or mitigated to the extent possible and provide enforceable performance standards to follow the National Register of Historic Places and the Secretary of Interior's standards and guidelines when implementing the mitigation measures (see Stipulations III and VIII in the PA, Appendix 3.17-A of the Fresno to Bakersfield Section Final EIR/EIS). The Treatment Plans will conform to the principles of the Advisory Council on Historic Preservation's Treatment handbook, as well as

SHPO Guidelines. These treatment plans dictate how the requirements of Section 106 will be met and also include the mitigation measure requirements.

3.13.1 Impact CUL #1: Potential Adverse Effects on Archaeological Resources due to Construction Activities

Although the Preferred Alternative will not affect any known archaeological resources that are considered historic properties or resources, it could potentially affect unknown archaeological resources. The majority of the Preferred Alternative footprint has not been subject to inventory for archaeological resources because of lack of access to the properties. CUL-AM #2 would ensure that the PA and MOA are followed, and that a phased identification efforts are conducted as right of entry is obtained. This would reduce the potential to impact archaeological resources. The following measures mitigate this impact:

CUL-MM #4: Comply with State and Federal Law for Human Remains. Discoveries of human remains on private and state agency lands in California are governed by California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98. Native American remains discovered on federal lands are governed by NAGPRA (25 US Code Section 3001). 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 Native American Heritage Commission to identify a Most Likely Descendent. The Most Likely Descendent shall be empowered to reinter the remains with appropriate dignity. If the Most Likely Descendent 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 Native American Heritage Commission 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 Most Likely Descendent and other stakeholders, 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 stakeholders the Authority may conduct scientific analysis on the human remains if called for under a data recovery plan and amenable to all stakeholders. California and the Authority will work with the most likely descendant, 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 approval of the documentation by the SHPO and appropriate consulting parties.

CUL-MM #5: Conduct Additional Testing and Recovery. When access is obtained, conduct surveys, testing, and evaluation pursuant to the ATP. Follow treatments and data recovery, as required.

Mitigation Measures CUL-MM #4 and CUL-MM #5 would mitigate impacts to archaeological resources in the Preferred Alternative Archaeological Area of Potential Effects should they be inadvertently discovered during construction. None of the mitigation measures applicable to archaeological resources would result in adverse secondary effects or impacts.

The Authority finds that Mitigation Measures CUL-MM #4 and CUL-MM #5 have been required in the Preferred Alternative and that implementation of these measures will reduce construction impacts on archaeological resources to less than significant even if data recovery is the only feasible mitigation.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

3.13.2 Impact CUL #2: Potential Adverse Effects on Historic Architectural Resources due to Construction Activities

Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements. The

MOA for the Fresno to Bakersfield Section ensures that treatments implemented before, during, and after construction would avoid, minimize, and mitigate these impacts. Nevertheless, the construction of the Preferred Alternative would cause indirect changes to four historical properties or resources (see Draft Supplemental EIR/EIS, Table 3.17-7). Furthermore, additional built environment surveys may be necessary as project design progresses and those surveys may identify additional historical resources. A substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 is considered a significant impact. For these reasons, built environment resources may be subject to treatment for significant mitigatable or unavoidable effects. The following measures mitigate this impact:

CUL-MM #12: Prepare and Submit Additional Recordation and Documentation. A BETP will identify specific historical resources that would be physically altered, damaged, relocated, or destroyed by the project that will be documented in detailed recordation that includes photography. This documentation may consist of preparation of updated recordation forms (DPR 523), or may be consistent with the Historic American Building Survey, the Historic American Engineering Record, or the Historic American Landscape Survey programs; a Historic Structure Report; or other recordation methods stipulated in the MOA and described in the BETP. The recordation undertaken by this treatment would focus on the aspect of integrity that would be affected by the project for each historic property subject to this treatment. For example, historic properties in an urban setting that would experience an adverse visual effect would be photographed to capture exterior and contextual views; interior spaces would not be subject to recordation if they would not be affected. Consultation with the SHPO and the consulting parties will be conducted for the historic architectural resources to be documented. Recordation documents will follow the appropriate guidance for the recordation format and program selected. Copies of the documentation will be provided to the consulting parties and offered to the appropriate local governments, historical societies and agencies, or other public repositories, such as libraries. The documentation will also be offered in printed and electronic form to any repository or organization to which the SHPO, the Authority, and the local agency with jurisdiction over the property, through consultation, may agree. The electronic copy of the documentation may also be placed on an agency or organization's website.

CUL-MM #13: Prepare Interpretive or Educational Materials. Based on the finalization of design and the completed inventory, the BETP will identify historic properties and historical resources that will be subject to historic interpretation or preparation of educational materials. Interpretive and educational materials will provide information regarding specific historic properties or historical resources and will address the aspect of the significance of the properties that would be affected by the project. Interpretive or educational materials could include, but are not limited to: brochures, videos, websites, study guides, teaching guides, articles or reports for general publication, commemorative plaques, or exhibits. Historic properties and historical resources subject to demolition by the project will be the subject of informative permanent metal plaques that will be installed at the site of the demolished historic property or at nearby public locations. Each plaque will provide a brief history of the subject property, its engineering/architectural features and characteristics, and the reasons for and the date of its demolition. The interpretive or educational materials will utilize images, narrative history, drawings, or other material produced for the mitigation described above, including the additional recordation prepared, or other archival sources. The interpretive or educational materials should be advertised, and made available to, and/or disseminated to the public. The interpretive materials may be made available in physical or digital formats, at local libraries, historical societies, or public buildings.

None of the mitigation measure options is expected to result in secondary effects. Historical architectural resources would be directly or indirectly adversely affected or experience substantial adverse change from construction activities associated with the Preferred Alternative.

Execution of the treatments described in the mitigation measures above would avoid, minimize, or mitigate these adverse effects or changes, to the extent possible. Additionally, the MOA for the Fresno to Bakersfield section ensures that treatments implemented before, during, and after construction would avoid, minimize, and mitigate these impacts. The PA and MOA mandate that the BETP will set forth means to avoid, protect, or development treatment measures to minimize

The project's effects when the Authority, in consultation with the appropriate agencies, the SHPO, and other MOA signatories, determines that adverse effects cannot be avoided. The BETP will provide specific performance standards to ensure that each impact will be avoided, minimized, or mitigated to the extent possible and provide enforceable performance standards to follow the National Register of Historic Places and the Secretary of Interior's standards when implementing the mitigation measures.

The Authority therefore finds that Mitigation Measures CUL-MM #12 and CUL-MM #13 have been required in the Preferred Alternative and that implementation of these measures will reduce impacts on historic architectural resources due to construction activities to less than significant.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4 CUMULATIVE IMPACTS (SECTION 3.19 OF THE DRAFT SUPPLEMENTAL EIR/EIS)

This section presents the Authority's findings regarding the cumulative effects implementing the Preferred Alternative in combination with other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from the combination of individually minor but collectively significant projects over time (CEQA Guidelines, § 15355). Under CEQA, when a project would contribute to a cumulative impact, an EIR must discuss whether the project's incremental effect is "cumulatively considerable." Cumulatively considerable means that the project's incremental effect is significant when viewed in the context of past, present, and reasonably probable future projects. The discussion of cumulative impacts need not provide as much detail as is provided for the effects attributable to the project alone (CEQA Guidelines, § 15130, subd. [b]). As described in the Draft Supplemental EIR/EIS, the focus of the cumulative impacts analysis is on the Preferred Alternative and the regional context appropriate for each resource area, including adjacent sections of the HSR System.

4.1 Transportation

The cumulative impact analysis for transportation is based on the planned and potential project lists (Appendices 3.19-A and 3.19-B of the Draft Supplemental EIR/EIS), as well as plans/projections listed in Table 3.2-1, Regional Plans and Policies in Section 3.2, Transportation of the Fresno to Bakersfield Section Final EIR/EIS.

At a local level, the operation of the Preferred Alternative in combination with other past, present, and reasonably foreseeable projects would decrease the operating conditions below LOS D on some roadway segments and at intersections in the vicinity of the Bakersfield F Street station, causing a cumulatively significant effect on local traffic congestion. Mitigation measures for transportation that are described in Section 3.1 of these Findings (for impacts under that Future [2035] Plus Project scenario) would reduce these impacts by modifying intersections to improve level of service. These modifications will include widening approaches to intersections, adding exclusive turn lanes to intersections, and/or adding new lanes to roadways. With implementation of these measures, the contribution of the Preferred Alternative to cumulative local transportation impacts would be reduced to less than cumulatively considerable.

The Authority finds that transportation mitigation measures have been incorporated into the Preferred Alternative (see Section 3.1 of these Findings) and that implementation of these mitigation measures will reduce the project's contribution to cumulatively considerable transportation impacts to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project, which found that the cumulative effect of project construction and operation is not cumulatively considerable under CEQA.

4.2 Air Quality and Global Climate Change

Construction of the Preferred Alternative would be above the SJVAPCD's significance thresholds for regional criteria pollutants and together with other related projects, this combined impact would be cumulatively significant. In addition, some materials needed for construction of the project, such as ballast, may be sourced to areas outside of the SJVAB. As described in Impact AQ#3, Section 3.2 of these Findings, the transport of ballast construction materials from areas outside the SJVAB to the project site may result in exceedances of NO_x mass emission thresholds in other air districts, thereby contributing to cumulatively considerable air quality impacts.

As explained below, implementation of the project's required mitigation measures will reduce the project's contribution to these cumulatively considerable impacts to less-than-cumulatively-considerable levels.

As described in Section 3.19, Cumulative Impacts, of the Draft Supplemental EIR/EIS, construction of the project would not result in cumulatively significant statewide or local air quality or greenhouse gas emissions impacts. At a regional level, however, the project would have a cumulatively considerable impact on air quality.

Within the SJVAB, for criteria pollutants, the SJVAPCD has adopted a cumulative threshold of significance of 10 tons per year for ozone precursors (reactive organic gas and NO_x) and 15 tons per year for particulate matter (PM₁₀ and PM_{2.5}). The SJVAPCD has determined that projects below these significance thresholds would not have a cumulatively considerable impact on air quality in the SJVAB as they are consistent with the SJVAPCD's attainment strategy and would not prevent the District from achieving attainment. Before implementation of mitigation, the project's construction emissions would exceed the SJVAPCD's limits for reactive organic gas, NO_x, PM₁₀, and PM_{2.5}, which would be a cumulatively considerable impact. Implementation of the mitigation measures adopted for the project's air quality construction impacts, which are described in Section 3.2 of these Findings, will reduce construction emissions of these criteria pollutants to net zero. In particular, Mitigation Measure AQ-MM #4 offsets construction emissions above the SJVAPCD thresholds for ozone precursors and particulate matter through the VERA. Therefore, the project's incremental contribution would not be cumulatively considerable.

With respect to the project's air quality impacts in areas outside the SJVAB, implementation of Mitigation Measure AQ-MM #5, which requires the purchase of offsets and emission mitigation for emissions associated with hauling ballast materials, would reduce this impact to less-than-cumulatively-considerable levels.

The Authority finds that construction air quality mitigation measures have been incorporated into the project (see Section 3.2 of these Findings) and that implementation of these mitigation measures will reduce the project's contribution to cumulatively considerable construction air quality impact on regional emissions, both inside and outside the SJVAB, to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.3 Noise and Vibration

Construction of the Preferred Alternative, in conjunction with other past, present, and reasonably foreseeable projects would result in noise effects that would be limited in duration. It is possible that multiple projects in urban areas that are in close proximity to the Preferred Alternative, such as the Gossamer Grove Development in the city of Shafter, and the cluster of development sites within central and east Bakersfield, would be under construction at the same time as the HSR project. Together with the HSR project, construction of these projects could result in exceedance of significance thresholds for noise at sensitive receivers. (See Section 3.3.3.11, Noise and Vibration, of the Draft Supplemental EIR/EIS for the noise significance thresholds.) This would be a significant cumulative impact. Even after implementation of the noise mitigation measures included in Section 3.3 of these Findings, the project's contribution to this cumulative construction noise impact would be cumulatively considerable.

Furthermore, although no specific projects have been proposed in the rural areas of the project with construction schedules that overlap the HSR project, it is possible that future construction of commercial, industrial, or infrastructure projects in rural areas could overlap with HSR project construction. This would result in a significant cumulative impact. Even after implementation of the noise mitigation measures included in Section 3.3 of these Findings, the project's contribution to this cumulative construction noise impact would be cumulatively considerable.

Construction of the elevated sections of the project is likely to require pile driving. It is possible that other projects in urban areas that are in close proximity to elevated sections of the Preferred Alternative would also require pile driving. Construction of the project concurrently with such future projects could result in exceedance of significance thresholds for vibration at adjacent sensitive receivers. Even after implementation of the mitigation measures for vibration impacts

included in Section 3.3 of these Findings, this would be a significant cumulative impact and the project's contribution to this cumulative construction vibration impact would be cumulatively considerable.

Mitigation measures for the construction noise impacts of the Preferred Alternative described in Section 3.3 of these Findings, would reduce the project's contribution to cumulative construction noise impacts by activities such as installing temporary and permanent sound barriers, using low-noise emission equipment, limiting or avoiding certain noisy activities during nighttime hours, installation of building sound insulation, acquiring easements on properties severely affected by noise, and using special types of trackwork.

The following mitigation measure would reduce the potential cumulative effects of overlapping construction activities within the same area.

CUM-N&V-MM#1: Consult with agencies regarding construction activities. To minimize the potential overlapping noise-generating construction activities within the same area, the Authority would consult with local city and county planning department and other agencies as determined necessary. Consultation would entail notifying the departments/agencies regarding the anticipated HSR construction schedule and would allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HSR alignment, to the extent feasible.

However, even with implementation of mitigation measure CUM-N&V-MM#1, the construction-related contribution of the Preferred Alternative to cumulative noise and vibration impacts would remain cumulatively considerable. Additionally, during operations, even with implementation of mitigation measures for noise and vibration, cumulative effects of operational noise would remain cumulatively considerable.

Operation of the Preferred Alternative would create new long-term noise impacts. Increased vehicular traffic along existing and planned roadways would contribute to future elevated noise levels. Together with past, present, and reasonably foreseeable projects, the increased noise levels adjacent to transportation corridors would be a significant cumulative impact for sensitive receivers along the transportation corridors. Even after implementation of the mitigation measures included in Section 3.3 of these Findings, the incremental contribution of the project to the significant cumulative noise impact would be cumulatively considerable.

Additionally, during operations, even with implementation of mitigation measures for noise provided in Section 3.3 of these Findings, the project's contribution to cumulative effects of operational noise would remain cumulatively considerable. This contribution would result because there would be some sensitive receptors near the HSR alignment for which additional mitigation is not practical because construction of a sound barrier is not economically feasible and there is no practical amount of sound insulation that can be added to the structure to reduce interior noise levels to acceptable standards.

The Authority finds that noise and vibration mitigation measures, including Mitigation Measure CUM-N&V-MM#1, have been required in the project and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the project's contribution to cumulatively considerable construction noise and vibration impacts. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-cumulatively-considerable levels. To the extent that these cumulatively considerable adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.4 Biological Resources and Wetlands

A. Cumulative Construction Impacts on Special-Status Plant and Wildlife Species

Construction of the Preferred Alternative in combination with other past, present, and reasonably foreseeable projects may result in the loss of special-status plant and wildlife species within the Tulare Basin at temporary construction sites such as laydown and staging areas. Future projects within this region that are expected to contribute to the cumulative impacts associated with construction of the Preferred Alternative include, but are not limited to, the Rosedale Highway improvements in Bakersfield; the North and West Beltway constructions in Shafter; solar projects such as Lost Hills, Maricopa, Smyrna, Goose Lake, Elk Hills, and Orion; water pipelines and storage such as the Kern Water Bank Storage Project; and various industrial, commercial, and residential projects in both cities. Additionally, the construction of the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south would contribute to the net loss of special-status plant and wildlife species. These projects, including the Preferred Alternative, are located in areas containing similar habitat requirements for special-status plants and wildlife species; in particular they are located in areas which provide suitable habitat for western burrowing owl, coast horned lizard, and heartscale, which are known to occur in the area. Other special-status wildlife species such as western spadefoot toad, Swainson's hawk, Tipton kangaroo rat, and San Joaquin kit fox have potential to occur in the construction footprint of the Preferred Alternative and the footprints of other cumulative projects. Construction activities may result in the "take" of individuals in the form of mortality, injury, or harassment due to trampling, noise, dust, motion disturbance, or temporary destruction and degradation of suitable habitat. These impacts are considered cumulatively significant.

However, with implementation of the mitigation measures set for biological resources forth in Section 3.5 of these Findings, the Preferred Alternative's incremental contribution to this cumulatively significant impact would not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the Preferred Alternative that will reduce the Preferred Alternative's contribution to cumulatively considerable construction impacts to special-status plant and wildlife species to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

B. Cumulative Construction Impacts on Habitats of Concern

Construction of the Preferred Alternative in combination with other past, present, and foreseeable projects may result in the temporary destruction or degradation of special-status plant communities; impede implementation of recovery plans; temporarily place fill or increase erosion, siltation, and runoff in jurisdictional waters; and remove or modify protected trees (e.g., native oaks). Cumulative impacts to jurisdictional waters may be caused by the combined construction of numerous transportation and development projects. These projects include, but are not limited to, the solar and water storage projects listed above. Additionally, construction of the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south would contribute to the net loss of jurisdictional waters and other habitats of concern in the cumulative study area. Cumulative impacts to recovery plans, such as the Recovery Plan for Upland Species of the San Joaquin Valley, California, as well as the additional removal of protected trees as a result of past, present, and foreseeable projects, including those listed above, would be cumulatively significant. Impacts to jurisdictional waters and recovery plans would be cumulatively significant.

However, with implementation of the mitigation measures for biological resources included in Section 3.5 of these Findings, the Preferred Alternative's incremental contribution to this cumulatively significant impact would not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the Preferred Alternative that will reduce

the Preferred Alternative's cumulatively considerable construction impact to habitats of concern to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

C. Cumulative Operational Impacts on Special-Status Plant and Wildlife Species

Potential impacts on special-status species from operation of the Preferred Alternative and other past, present, and foreseeable projects include permanent habitat loss, habitat fragmentation, introduction of invasive species, and harassment due to increased noise and human disturbance. Planned and potential development projects and transportation projects, including, but not limited to, the North and West Beltways in Shafter, would contribute to significant impacts on special-status species because these projects together with the Preferred Alternative, could impact habitat with potential for special-status plant and wildlife species presence. Additionally, the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south, would contribute to the net loss of special-status plant and wildlife species. Cumulative operations impacts on special-status plant and wildlife species would be significant. Because of the large area that would be permanently occupied by HSR facilities, impacts to special-status plant and wildlife species would be substantial as a result of permanent habitat conversion and loss. Mitigation measures for the Preferred Alternative include preconstruction surveys, avoidance, habitat restoration, and offsite habitat preservation, enhancement and compensation, which would reduce the project's contribution to this impact. In the context of the loss of special-status plant and wildlife species from past, present, and reasonably foreseeable agricultural and urban development in the Tulare Basin, the contribution of the Preferred Alternative to these significant cumulative impacts would be cumulatively considerable before mitigation.

However, mitigation for the Preferred Alternative includes restoration, enhancement, and preservation of jurisdictional waters and riparian habitats to the extent that there will be no net loss of aquatic resources, functions, and services. These habitats are important for many special-status plant and wildlife species. In addition, project mitigation includes preservation of habitat occupied by special-status plant and wildlife species. This preservation in combination with restoration, enhancement, and preservation of jurisdictional waters will improve biological resources in the region over existing conditions. For these reasons, with implementation of the mitigation measures for biological resources included in Section 3.5 of these Findings, the Preferred Alternative's incremental contribution to this cumulatively significant impact to special-status plant and wildlife species will not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the Preferred Alternative that will reduce the Preferred Alternative's contribution to cumulatively considerable operational impacts to special-status plant and wildlife species to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

D. Cumulative Operational Impacts on Habitats of Concern

Several projects planned within the Tulare Basin in combination with the Preferred Alternative would have cumulative impacts on habitats of concern prior to mitigation. These projects include, but are not limited to, numerous transportation and development projects, such as the solar and water storage projects listed above. Additionally, the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south, would contribute to the net loss of jurisdictional waters and other habitats of concern in the basin. Operational impacts of these projects in association with the Preferred Alternative could include permanent fragmentation, degradation, or conversion of habitats of concern, loss of special-status plant communities, loss of recovery plan areas and the removal or modification of protected trees. The operation of the Preferred Alternative prior to mitigation in combination with

other past, present, and foreseeable projects would result in a significant cumulative impact to habitats of concern within the Tulare Basin.

However, mitigation for the Preferred Alternative includes restoration, enhancement, and preservation of jurisdictional waters and riparian habitats to the extent that there will be no net loss of aquatic resources, functions, and services. These habitats are important for many special-status plant and wildlife species. In addition, project mitigation includes preservation of habitat occupied by special-status plant and wildlife species. This preservation in combination with restoration, enhancement, and preservation of jurisdictional waters will improve biological resources in the region over existing conditions. For these reasons, with implementation of the mitigation measures for biological resources included in Section 3.5 of these Findings, the incremental contribution of the Preferred Alternative to this cumulative impact to habitats of concern will not be cumulatively considerable.

The Authority therefore finds that mitigation measures have been incorporated into the Preferred Alternative that will reduce the Preferred Alternative's contribution to cumulatively considerable operational impacts to habitats of concern to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

E. Cumulative Operational Impacts on Wildlife Movement Corridors

Past projects have significantly degraded the ability of wildlife to freely move across natural habitats, and wildlife movement would be further limited with the Preferred Alternative and other past, present, and reasonably foreseeable projects in the Tulare Basin. Planned and potential projects which could reduce the ability of wildlife to move freely across natural habitats include, but are not limited to, the Hageman Flyover and the Rosedale Highway improvements in Bakersfield, and the North and West Beltway constructions in Shafter. Additionally, the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south would contribute to blockage of wildlife movement corridors. Impacts from these projects could include the permanent blockage of corridors and/or linkages and disruption of wildlife due to increased lighting, noise, and motion. These cumulative impacts would be significant. Because the project is linear, spanning much of the southern San Joaquin Valley, its impact on wildlife movement corridors would be cumulatively considerable before mitigation.

With implementation of the mitigation measures for biological resources included in Section 3.5 of these Findings, the incremental contribution of the Preferred Alternative to cumulative impacts would be not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the Preferred Alternative that will reduce the Preferred Alternative's contribution to cumulatively considerable operational impacts to on wildlife movement corridors to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.5 Geology, Soils, Seismicity, and Paleontological Resources

Disturbance of paleontological resources during project excavation has the potential to contribute to cumulative impacts, if the disturbance results in destruction of the resource. Cumulative projects which affect the same underlying geologic formation as the Preferred Alternative could have the potential to result in similar impacts to important paleontological resources, particularly if the Quaternary fan deposits, Quaternary basin deposits, Pleistocene non-marine, or Miocene-Pleistocene Kern River Formation would be affected by grading for those projects. Impacts from the Preferred Alternative and other projects that may take place in the reasonably foreseeable future could cumulatively result in significant, adverse impacts to paleontological resources. These impacts would include the destruction of nonrenewable paleontological resources because

of earth-moving activities, and the consequent loss of their scientific data and educational potential.

With implementation of the mitigation measures for paleontological resources included in Section 3.6 of these Findings, the incremental contribution of the Preferred Alternative to this cumulative impact to paleontological resources will not be cumulatively considerable.

The Authority therefore finds that mitigation measures have been incorporated into the Preferred Alternative that will reduce the Preferred Alternative's contribution to cumulatively considerable paleontological resources impacts to less-than-cumulatively-considerable levels.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.6 Socioeconomics and Communities

A. Cumulative Construction Impacts Contributing to Division of Communities

Construction of projects under the cumulative condition in the vicinity of the Preferred Alternative would contribute to cumulative impacts associated with the division and/or disruption of communities in the cities of Shafter and Bakersfield, as well as unincorporated communities in Kern County. Some projects contribute to the disruption of existing communities, while others like the Centennial Corridor have impacts to both division and disruption of existing communities. Construction of the projects themselves would not displace any residents or impact the community's character. However, there could be temporary increases in traffic, changes in traffic patterns and access to community facilities, and construction noise and dust, if the projects were constructed simultaneously with the Preferred Alternative. In addition, division and/or disruption of communities could result from construction of the Preferred Alternative and other cumulative projects such as the Hageman Flyover, the Rosedale Highway off ramp and widening, 24th Street improvements, the Centennial Corridor, the Gossamer Grove and Mission Lakes Specific Plans, the Bakersfield Crossroads Plaza, the City of Bakersfield Vision Plan, the Stockdale Integrated Banking Project, and the Garlic Company and Grimmway Enterprises, Inc. wastewater treatment system, which may coincide with construction of the projects described above and would result in a significant cumulative impact. The incremental contribution of the Preferred Alternative to this cumulative impact would be cumulatively considerable.

With implementation of mitigation measures for Socioeconomics and Communities described in Section 3.8 of these Findings, impacts would be reduced, but not to less-than-significant levels.

In addition, the following mitigation measure would be implemented:

CUM-SO-MM#1: Consult with agencies regarding construction activities. To minimize the potential cumulative effects of overlapping construction activities within the same area, the Authority would consult with the local city and county planning departments and other agencies as determined necessary, to notify the departments/agencies regarding the anticipated HSR construction schedule and allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HSR alignment, to the extent feasible, in order to limit the overlap of community disruption.

With implementation of the above mitigation measure, the cumulative division and/or disruption of communities during construction would be somewhat reduced. However, the contribution of the Preferred Alternative to these impacts would remain cumulatively considerable.

The Authority finds that mitigation measures, including Mitigation Measure CUM-SO-MM#1, have been required in the Preferred Alternative and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the Preferred Alternative's contribution to the construction impacts associated with the division and/or disruption of communities. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this incremental contribution to a less-than-cumulatively-

considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

B. Cumulative Operational Socioeconomic and Communities Impacts

Under the cumulative scenario, several communities could experience division and/or disruption.

In Bakersfield, the Centennial Corridor Project, the widening of Rosedale Highway and 24th Street, the City of Bakersfield Vision Plan, and the double tracking of the BNSF Railway could result in division and disruption of communities by creating temporary or permanent barriers for the community. Such barriers can isolate portions of the community, separate residents from important community facilities or services, or alter access to such resources. However, the Preferred Alternative would be developed adjacent to existing rail and highway corridors and would not bisect or isolate existing communities. Operation of the Preferred Alternative and other past, present, and reasonably foreseeable projects would have cumulatively significant impacts from community disruption/division (construction only) and displacement of residences, businesses, and community facilities under CEQA. Therefore, with implementation of mitigation measures identified in Section 3.12 of the Draft Supplemental EIR/EIS, the impacts to community disruption/division from operations would not be cumulatively significant under CEQA.

The conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project found that HSR operation along with other past, present, and reasonably foreseeable projects would result in a significant cumulative impact under CEQA due to division and/or disruption of communities in the cities of Shafter and Bakersfield, as well as unincorporated communities in Kern counties and that the May 2014 Project's incremental contribution to this impact would be cumulatively considerable under CEQA.

4.7 Agricultural Land

Development of other past, present, and reasonably foreseeable projects, including, but not limited to, the solar projects (particularly Lost Hills, Smyrna, Goose Lake, Elk Hills, and Blackwell); retail development such as Bakersfield Crossroads Plaza; and irrigation and wastewater projects like the Kern County Irrigation Efficiency Project and the Garlic Company Processing Facility's proposed treatment system, would result in the conversion of Important Farmland to non-agricultural uses. In addition, the Preferred Alternative would require the acquisition of Important Farmland. The conversion of Important Farmland to non-agricultural uses resulting from the Preferred Alternative and other past, present, and foreseeable projects would be a significant cumulative impact.

With implementation of the agricultural mitigation measure described in Section 3.10 of these Findings, impacts would be reduced through the purchase of agricultural conservation easements from willing sellers. However, because Important Farmland is irreplaceable, the contribution of the Preferred Alternative during project operations to cumulative agricultural impacts would remain cumulatively considerable.

The Authority finds that agricultural mitigation has been required in the Preferred Alternative and that implementation of this mitigation measure would reduce, but not completely avoid or substantially lessen the Preferred Alternative's contribution to the cumulatively considerable operational agricultural impact.

The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of

Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.8 Aesthetics and Visual Resources

A. Cumulative Construction Impacts on Aesthetics and Visual Resources

Development of cumulative projects, including oil, water, and gas wells, roadway and highway improvement projects such as the Hageman Flyover and Rosedale Highway improvements in Bakersfield, the North and West Beltway in Shafter, and various industrial, commercial, residential, and development projects would result in construction activities that would create temporary visual changes from demolition, vegetation removal, establishment of construction staging areas, and construction lighting. Even though construction activities would be temporary, due to the scale and proximity of cumulative projects listed in Appendix 3.19-A and 3.19-B of the Draft Supplemental EIR/EIS, including the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south, the combined impacts of the cumulative projects could be significant and could overlap with construction of the Preferred Alternative in certain views. These construction-related cumulative impacts to visual resources could be cumulatively considerable.

Construction of the Preferred Alternative and other cumulative projects would also create temporary visual changes from demolition, vegetation removal, construction staging areas, construction lighting, and general construction activities. Where the cumulative projects and the Preferred Alternative have overlapping construction schedules and are located in close proximity, construction could result in significant cumulative visual impacts.

Implementation of the aesthetics and visual resource mitigation measures described in Section 3.12 of these Findings would reduce the incremental contribution of the Preferred Alternative to these significant cumulative construction impacts, however the contribution of the Preferred Alternative to visual impacts would remain significant under CEQA in the Kern River Parkway until landscape screening matures in 10 years or more. While mitigation measure CUM-VQ-MM#1 from the Fresno to Bakersfield Section Final EIR/EIS (page 3.19-48) would minimize this cumulative impact, the contribution of the Preferred Alternative to cumulative visual impacts would be cumulatively considerable under CEQA.

The Authority finds that mitigation measures for construction impacts to aesthetic and visual resources have been required in the Preferred Alternative and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the Preferred Alternative's cumulatively considerable construction impact on aesthetic and visual resources in the Kern River Parkway. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this incremental contribution to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

The Fresno to Bakersfield Final EIR/EIS found that the cumulative visual effect of the May 2014 Project construction activities in combination with other past, present, and reasonably foreseeable future projects would be cumulatively considerable under CEQA in areas where multiple construction activities are located in close proximity and that it is not possible to substantially reduce the incremental contribution of the HSR project to this cumulative visual impact because the HSR viaduct over the Kern River is too high to shield from view. This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

B. Cumulative Operation Impacts on Aesthetics and Visual Resources

The Hageman Flyover and Rosedale Highway improvements, as well as development under the City of Bakersfield Vision Plan would combine with the Preferred Alternative to increase impacts to views from high-sensitivity parks and open space (including the Kern River Parkway), as well as nearby residential areas.

Operation of cumulative projects, including oil, water, and gas wells, roadway and highway improvement projects such as the Hageman Flyover and Rosedale Highway improvements in Bakersfield, the North and West Beltway constructions in Shafter, and various industrial, commercial, and residential projects in both cities in the vicinity of the Preferred Alternative would result in cumulatively significant visual impacts under CEQA.

With implementation of mitigation measures for Aesthetics and Visual Resources described in Section 3.12 of these Findings, impacts would be reduced, but not to less-than-significant levels. In addition, the following mitigation measure would be implemented.

CUM-VQ-MM#1: Consult with agencies on HST project design. Prior to construction, the Authority would consult with local city and county planning departments to provide information about the HST project design. This would allow for local plans and proposed development projects that could be adversely affected by the HST project to be modified and potential visual impacts to high-sensitivity viewers to be reduced, as determined feasible by project applicants/planning departments.

With implementation of the above mitigation measure, the cumulative operational aesthetic and visual resources impact would be reduced; however, the contribution of the Preferred Alternative to these impacts would remain cumulatively considerable.

The Authority finds that mitigation measures, including Mitigation Measure CUM-VQ-MM#1, have been required in the Preferred Alternative and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the Preferred Alternative's contribution to the project impacts associated with aesthetics and visual resources. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this incremental contribution to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

4.9 Cultural Resources

Under the cumulative condition, cultural resources would continue to be affected in the urbanizing areas of the San Joaquin Valley due to growth, changes in land use, and other types of ground disturbance. Development in the urban areas would likely result in further unearthing of sensitive archaeological resources, disturbance of traditional cultural properties, and removal of—or changes to—the historic character and settings of historic resources. Prehistoric and historic archaeological sites would be affected during project construction activities. Prehistoric sites are common in riverbank and floodplain areas, and burial sites are sometimes encountered during ground-disturbing activities. It is likely that known and unknown archaeological resources could be disturbed and cultural resources damaged or destroyed during construction activities associated with the Preferred Alternative and other past, present, and reasonably foreseeable projects. Linear projects that require extensive excavation, such as the portion of the Fresno to Bakersfield Section north of the Preferred Alternative and the Bakersfield to Palmdale Section to the south have the potential to cause substantial adverse change to archaeological resources. Significant and unavoidable losses of unique archaeological resources (as defined in Public Resources Code Section 21083.2) or a historical resource (as defined in Section 21083.2 of

CEQA and Section 15064.5 of the CEQA Guidelines) could occur if excavation exposes archaeological deposits that cannot be effectively removed or recovered due to the circumstances of their exposure (e.g., in railroad rights-of-way or urbanized settings) or if recovery would not be sufficient to prevent the loss of significant cultural resources.

Historical architectural resources could also be damaged or require removal due to implementation of the projects under the cumulative condition. Local projects and the secondary effects of redevelopment pressures around the Preferred Alternative alignment and the F Street Station would potentially result in the removal of historical buildings in Bakersfield and Shafter. Adverse effects on eligible resources could result in the neglect, abandonment, or removal of historic properties, by such projects as the Hageman Flyover and Rosedale Highway improvements in Bakersfield, and the North and West Beltway constructions in Shafter. Other projects could also have similar impacts on the existing built environment as the HSR. If these resources meet the definition of a historical resource or a historic resource (as defined in Section 106, 36 C.F.R. 800), their modification or destruction would be significant. The Preferred Alternative could result in significant, unavoidable impacts on historic resources, as described in Section 3.17, Cultural Resources, of the Draft Supplemental EIR/EIS. Therefore, construction of the Preferred Alternative in conjunction with past, present, and reasonably foreseeable projects under the cumulative condition could result in significant cumulative impacts to historical architectural resources.

The Preferred Alternative would minimize cumulative impacts on cultural resources by adhering to federal and state regulations and by providing guidance on the treatment of significant properties (as defined in the PA). Implementation of the mitigation measures for cultural resources described in Section 3.13 of these Findings such as monitoring during construction, avoidance, compliance with applicable regulations, worker training, relocation of resources, and preparation of applicable documentation would minimize impacts. However, even with implementation of these mitigation measures, the contribution of the Preferred Alternative to cumulative impacts would remain cumulatively considerable. The Authority finds that cultural mitigation measures have been required in the Preferred Alternative and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the project's cumulatively considerable construction impact on cultural resources.

The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the Final Supplemental EIR and approval of the project.

This finding is consistent with the conclusions reached in the Fresno to Bakersfield Section Final EIR/EIS for the May 2014 Project.

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5 FEASIBILITY OF POTENTIAL ALTERNATIVES

CEQA requires the lead agency, the High-Speed Rail Authority, to consider a reasonable range of potentially feasible alternatives to the proposed Project (Public Resources Code, §§ 21002, 21081; see also CEQA Guidelines, § 15126.6). “Feasible” means capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, legal, social and technological factors (CEQA Guidelines, § 15364). The range of alternatives to be considered is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project (CEQA Guidelines, § 15126.6(f)). At the same time, an EIR need not study in detail an alternative that a lead agency “has reasonably determined cannot achieve the project’s underlying fundamental purpose” (In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1165).

As discussed above, prior to moving forward with the project, CEQA requires that the lead agency find that “specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the project alternatives identified in the environmental impact report” (Public Resources Code, § 21081). The determination of infeasibility “involves a balancing of various ‘economic, environmental, social, and technological factors’” (City of Del Mar v. City of San Diego (1982) 133 Cal.App.3d 401, 417). Where there are competing and conflicting interests to be resolved, the determination of infeasibility “is not a case of straightforward questions of legal or economic feasibility,” but rather, based on policy considerations (California Native Plant Society v. City of Santa Cruz (2009) 177 Cal.App.4th 957, 1001-02). “[A]n alternative that is ‘impractical or undesirable from a policy standpoint’ may be rejected as infeasible” (Id. at p. 1002 citing 2 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act, (Cont.Ed.Bar 2010) section 17.29, p. 824).

The key policy considerations that must be balanced in determining the feasibility of the project alternatives include the following:

- The Authority’s statutory responsibility, which is to:
 - “direct the development and implementation of intercity high-speed rail service that is fully integrated with the state’s existing intercity rail and bus network, consisting of interlinked conventional and high-speed rail lines and associated feeder buses. The intercity network in turn shall be fully coordinated and connected with commuter rail lines and urban rail transit lines developed by local agencies, as well as other transit services, through the use of common station facilities whenever possible (Public Utilities Code, § 185030).”
- The purpose of the statewide HSR System, which is to provide reliable high-speed electrified train system that links the major metropolitan areas of the state, and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit and the highway network and relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California’s unique natural resources.
- The Authority’s prior determination that serving intermediate markets in the Central Valley, rather than bypassing them, is an important component of the high-speed train system.
- The purpose of the Fresno to Bakersfield Section, which is to implement the Fresno to Bakersfield Section of the California HSR System to provide the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers and connectivity to airports, mass transit, and the highway network in the south San Joaquin Valley, and connect the northern and southern portions of the system.

- The Authority's objectives, which are to:
 - Provide intercity travel capacity to supplement critically over-used interstate highways and commercial airports.
 - Meet future intercity travel demand that will be unmet by current transportation systems, and increase capacity for intercity mobility.
 - Maximize intermodal transportation opportunities by locating stations to connect with local transit, airports, and highways.
 - Improve intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel.
 - Provide a sustainable reduction in travel time between major urban centers.
 - Increase the efficiency of the intercity transportation system.
 - Maximize the use of existing transportation corridors and rights-of-ways, to the extent feasible.
 - Develop a practical and economically viable transportation system that can be implemented in phases by 2020 and generate revenues in excess of operations and maintenance costs.
 - Provide intercity travel in a manner sensitive to and protective of the region's natural and agricultural resources and reduce emissions and vehicle miles traveled for intercity trips.
- The characteristics enumerated in Streets and Highways Code section 2704.09 for the statewide high-speed train system as a whole, which include:
 - 2704.09(a) – Electric trains that are capable of sustained maximum revenue operating speeds of no less than 200 miles per hour.
 - 2704.09(b) – Maximum nonstop service travel times for each corridor that shall not exceed the following:
 - San Francisco – Los Angeles Union Station: two hours, 40 minutes.
 - Oakland – Los Angeles Union Station: two hours, 40 minutes.
 - San Francisco – San Jose: 30 minutes
 - San Jose – Los Angeles: two hours, 10 minutes.
 - San Diego – Los Angeles: one hour, 20 minutes.
 - Inland Empire – Los Angeles: 30 minutes.
 - Sacramento – Los Angeles: two hours, 20 minutes.
 - 2704.09(c) – Achievable operating headway (time between successive trains) shall be five minutes or less.
 - 2704.09(d) – The total number of stations to be served by high-speed trains for all of the corridors described in subdivision (b) of Section 2704.04 shall not exceed 24. There shall be no station between the Gilroy station and the Merced station.
 - 2704.09(e) – Trains shall have the capability to transition intermediate stations, or to bypass those stations, at mainline operating speeds.
 - 2704.09(f) – For each corridor described in subdivision (b), passengers shall have the capability of traveling from any station on that corridor to any other station on that corridor without being required to change trains.
 - 2704.09(g) – In order to reduce impacts on communities and the environment, the alignment for the high-speed train system shall follow existing

- transportation or utility corridors to the extent feasible and shall be financially viable, as determined by the authority.
 - 2704.09(h) – Stations shall be located in areas with good access to local mass transit or other modes of transportation.
 - 2704.09(i) – The high-speed train system shall be planned and constructed in a manner that minimizes urban sprawl and impacts on the natural environment.
 - 2704.09(j) – Preserving wildlife corridors and mitigating impacts to wildlife movement, where feasible as determined by the authority, in order to limit the extent to which the system may present an additional barrier to wildlife’s natural movement.
- The ability of an alternative to comply with Clean Water Act Section 404 by qualifying as the “least environmentally damaging practicable alternative” (LEDPA) in terms of adverse effects on waters of the United States and jurisdictional wetlands (Clean Water Act, Section 404(b)(1)). Alternatives other than the LEDPA would not receive the federal Section 404 permit that is necessary for construction. The USACE and USEPA concurred that the Preferred Alternative is the LEDPA (letters from USACE and USEPA on May 5, 2017 and May 22, 2017, respectively).
- Complexity of construction – Generally, construction is more complex within urban areas than in rural areas due to the necessity to minimize impacts on neighboring residences and businesses that are substantially more numerous in urban areas and the greater potential for conflicts with public utilities and infrastructure (i.e., sewer and water lines, local streets) in urban areas.
- The inherent tradeoffs in terms of environmental impacts that occur between (1) following existing transportation corridors, minimizing impacts on the biological resources, and agricultural lands and communities, but increasing impacts on urban communities and the urban environment and (2) departing from existing transportation corridors, minimizing impacts on urban communities and the urban environment, but increasing impacts on biological resources, agricultural lands, and agricultural communities.

5.1 Alternatives Considered in the Draft Supplemental EIR/EIS and Not Selected for Approval

The Findings prepared for the Authority’s 2014 decision extended from Monterrey Street in the city of Fresno to 7th Standard Road in Kern County. The Authority intentionally reserved the decision on the alignment south of 7th Standard Road in Kern County and into the City of Bakersfield to a future proceeding.

The Draft Supplemental EIR/EIS evaluated the F-B LGA from just north of Poplar Avenue in Shafter south to Oswell Street in Bakersfield and compared it to the complementary portion of the Preferred Alternative that was identified in the Fresno to Bakersfield Section Final EIR/EIS (known as the May 2014 Project). While the Authority’s 2014 decision was only for the portion from the southern limit of the Fresno Station to the north side of 7th Standard Road, the city limit of Bakersfield, the Preferred Alternative considered in these Findings overlaps with the BNSF Alternative from the 2014 Preferred Alternative between 1,600 feet north of Poplar Avenue and 7th Standard Road (Figure 2). The Authority’s previous decision for the overlapping area between 1,600 feet north of Poplar Avenue and 7th Standard Road (2014) is superseded by the decision considered in these Findings.

5.1.1 The No Project Alternative

The **No Project Alternative** would result in no construction and operation of the HSR System south of 7th Standard Road. The No Project Alternative is contrary to the Authority’s 2005 programmatic decision to choose the HSR System to meet the state’s transportation demands instead of expanding airports or freeways, or doing nothing, and contrary to the Authority’s

Business Plan as submitted to the Legislature in 2018, which identified service into Bakersfield. As a result, the No Project Alternative would not meet any of the project objectives, would not meet the project's underlying fundamental purpose, and would not allow the Authority to comply with its statutory mandate to "prepare a plan for the construction and operation of a high-speed train network for the state" (Public Utilities Code, §185032) and of Proposition 1A (Streets and Highways Code Section 2704, et seq.) to develop an HSR project. The Authority therefore finds the No Project Alternative is infeasible and rejects it on that basis.

5.1.2 May 2014 Project

The **May 2014 Project**, which consists of alternatives evaluated in the Fresno to Bakersfield Section Final EIR/EIS, includes a 12-mile portion of the BNSF Alternative from Poplar Avenue to Hageman Road and the Bakersfield Hybrid Alternative from Hageman Road to Oswell Street. The May 2014 Project alignment runs primarily at-grade as it follows the BNSF corridor and SR 43 through Shafter and SR 58 into Bakersfield. It parallels the Preferred Alternative until approximately Beech Avenue, where it diverges from the Preferred Alternative, parallels the BNSF right-of-way in a southeasterly direction, and then curves back to the northeast to parallel the BNSF tracks toward Kern Junction. After crossing Truxtun Avenue, the alignment curves to the southeast to rejoin the Preferred Alternative and parallel the Union Pacific Railroad tracks and Edison Highway to its terminus at Oswell Street. The May 2014 Project Station would be built at the corner of Truxtun and Union Avenues/SR 204. A MOIF would be located along the May 2014 Project Alternative just north of the City of Bakersfield and 7th Standard Road. The May 2014 Project would result in 14 permanent road closures, affecting circulation patterns. This alternative would also displace 392 commercial and industrial businesses and 384 residential units. The May 2014 Project would result in the use of two Section 4(f) properties: Kern River Parkway and Mill Creek Linear Park. The May 2014 Project would also affect 485 acres of Important Farmland. Furthermore, the May 2014 Project would result in a direct impact to 20.14 acres of aquatic resources (waters of the United States) and does not qualify as the LEDPA (refer to the USACE's and USEPA's "Checkpoint C" determinations).

5.2 Alternatives Suggested by Commenters

Comments on the Draft Supplemental EIR/EIS suggested additional alternatives that the commenters believed merited consideration and analysis in the Supplemental EIR/EIS. These include the following general proposals:

- Alternative Station in Old Town Kern (in the vicinity of Sumner Street between Baker Street and Beale Avenue)
- Alternative Station in Old Town Kern (in the vicinity of Sumner Street between Beale Avenue and Miller Street)
- Alternative Station location in the "metro area"
- Alternative Station near 7th Standard Road
- Below-grade option for the Preferred Alternative along Golden State Avenue and Sumner Street

If an EIR contains a reasonable range of alternatives, it is not deficient for excluding analysis of other potential alternatives suggested in comments by members of the public or agencies. The Authority finds that the Final Supplemental EIR, when considered with the Final EIR/EIS, included a reasonable range of alternatives and that the range of alternatives was sufficient to permit a reasoned choice. The Authority therefore finds that no further alternatives were required to be evaluated in the Final Supplemental EIR.

The Authority further finds that the alternatives suggested in comments are not environmentally superior, do not adequately meet the project purpose/objectives, and/or are infeasible for the reasons summarized below, and considering the policy factors discussed above in Section 5.

Alternative Station in Old Town Kern (in the vicinity of Sumner Street between Baker Street and Beale Avenue). The Authority conducted a feasibility study (Authority 2018a) to determine whether a station between Baker Street and Beale Avenue in Old Town Kern would be feasible. As stated in the responses to comments included in Volume IV of the Final Supplemental EIR,⁴ the feasibility study referenced CHSR technical memoranda (TM) TM 2.1.3 “Turnouts and Station Tracks” and TM 2.2.4 “Station Platform Geometric Design.” Based on the conflicts with the engineering criteria defined in the TMs and the impacts to sensitive environmental resources, this alternative station location was eliminated from further consideration. Additionally, if a station were placed in Old Town Kern, not only would a viaduct be placed along the current alignment, but the station itself would then bisect if not completely displace the whole area proposed for consideration. Impacts would not be mitigated and would in fact be escalated. The Authority therefore finds that this suggested alternative station site is not environmentally superior, does not offer a substantial environmental advantage, and would be less capable of meeting the project’s underlying fundamental purpose and project objectives than the Preferred Alternative, and therefore rejects this alternative as infeasible.

Alternative Station in Old Town Kern (in the vicinity of Sumner Street between Beale Avenue and Miller Street). The Authority conducted a feasibility study (Authority 2018a) to determine whether a station between Beale Avenue and Miller Street in Old Town Kern would be feasible. As stated in the Response to Comment I006-180 included in Volume IV of the Final Supplemental EIR, the feasibility study referenced CHSR TM 2.1.3 “Turnouts and Station Tracks” and TM 2.2.4 “Station Platform Geometric Design.” Based on the conflicts with the engineering criteria defined in the TMs and the impacts to sensitive environmental resources, this alternative station location was eliminated from further consideration. The Authority therefore finds that this suggested alternative station site is not environmentally superior, does not offer a substantial environmental advantage, and would be less capable of meeting the project’s underlying fundamental purpose and project objectives than the Preferred Alternative, and therefore rejects this alternative as infeasible.

Alternative Station location in the “metro area”. The Authority received comments suggesting the station would be better served in the “metro area” or downtown core of Bakersfield. The City of Bakersfield adopted the Downtown Vision Plan (Bakersfield 2018b), which identifies an urban design strategy for downtown Bakersfield that promotes economic development and sustainability, encourages the physical development of the station area, and enhances the community’s sustainability by encouraging infill development and multimodal connectivity, in particular transit-, pedestrian-, and bicycle-oriented connectivity. The Vision Plan includes phased development priorities (see Chapter 4 of the Vision Plan), a regional transit center located at the F Street Station, and a potential shuttle or other transport options between the F Street Station/Transit Center and the Downtown Bakersfield Amtrak Station. Pedestrian and bicycle connections with local trails (Kern River Parkway and Mill Creek Linear Park) and streets are also included in the Vision Plan (see in particular sections 3.3 and 3.4 of the Vision Plan). Although the commenter suggested a station in the “metro area,” development of the station between the F Street site and the Truxtun Avenue site would likely displace residences in the Westchester neighborhood and may impact built environment resources along the alignment that would service such station. The Authority therefore finds that this suggested alternative station site does not offer a substantial environmental advantage and would be less capable of meeting the project’s underlying fundamental purpose and project objectives than the Preferred Alternative, and therefore rejects this alternative as infeasible.

⁴ The Alternative Station in Old Town (in the vicinity of Sumner Street between Baker Street and Beale Avenue) is discussed in detail in Responses to Comments: I006-1, I006-2, I006-9, I006-20, I006-28, I006-29, I006-40, I006-180, I006-473, I012-1, I012-4, I017-2, I027-2, I027-8, I037-2, I040-1, I043-2, I051-2, I051-8, I062-1, I063-1, and P002-7.

Alternative Station near 7th Standard Road. The Authority conducted a feasibility study (Authority 2018a) to determine whether a station near 7th Standard Road would be feasible. As stated in Responses to Comments I006-29 and I006-40 included in Volume IV of the Final Supplemental EIR, the feasibility study referenced CHSR TM 2.1.3 “Turnouts and Station Tracks” and TM 2.2.4 “Station Platform Geometric Design.” Based on engineering constraints, such as the addition of 6,100 feet of additional viaduct to accommodate station track turnouts, the potential impacts to agricultural land, paleontological resources, and built environment resources, and the lack of connectivity of the proposed site, this alternative station location was eliminated from further consideration. The Authority therefore finds that this suggested alternative station site is not environmentally superior, does not offer a substantial environmental advantage, and would be less capable of meeting the project’s underlying fundamental purpose and project objectives than the Preferred Alternative, and therefore rejects this alternative as infeasible.

Below-grade option for the Preferred Alternative along Golden State Avenue and Sumner Street. Comment I006-199 suggests that the Authority should consider a below-grade option along Golden State Avenue and Sumner Street. A below-grade option would result in additional excavation activities, either for tunneling or trenching, and would require substantial material export, potentially increasing construction-related impacts to issues such as air quality, greenhouse gases, and noise. The Authority therefore finds that this suggested alternative station site does not offer a substantial environmental advantage than the Preferred Alternative, and therefore rejects this alternative as infeasible.

5.3 Alternatives Previously Considered and Not Carried Forward for Study in the Draft Supplemental EIR/EIS

The Authority has undergone an extensive screening process for alternatives to study in the Draft Supplemental EIR/EIS. The many potential alternatives considered, but eliminated from detailed study, are summarized in Standard Response FB-LGA-Response-GENERAL-01: Alternatives in the Final Supplemental EIR. The Authority finds that each potential alternative discussed in the Standard Response and not carried forward into the Final Supplemental EIR for detailed study was appropriately eliminated. Such potential alternatives either failed to adequately meet the project purpose and need/project objectives, failed to offer a substantial environmental advantage to the alternatives studied in the Draft Supplemental EIR/EIS, and/or were deemed to not be feasible from a cost, technical, or engineering perspective. The Authority therefore finds all such alternatives to be infeasible.

5.4 Preferred Alternative

The selection of the Preferred Alternative involves a series of tradeoffs and balancing considerations between the May 2014 Project and the F-B LGA. Both the May 2014 Project and the F-B LGA present different types and degrees of environmental impacts.

The F-B LGA reflects the Authority’s and FRA’s outreach with local stakeholders to refine the HSR project to achieve positive outcomes for affected communities and the natural environment, while still meeting the overall project objectives consistent with the voter-approved Proposition 1A. The Authority identified the F-B LGA as the Preferred Alternative for the following reasons, as provided in the Final Supplemental EIR:

- The F-B LGA, when compared to the May 2014 Project, would reduce the number of residential displacements. The F-B LGA would require 86 residential displacements, while the May 2014 Project would require 384 residential displacements. As shown in Table 8-A-38 of Appendix 8-A of the Draft Supplemental EIR/EIS, the F-B LGA would result in fewer residential displacements in each of the affected communities (city of Shafter, unincorporated Kern County, and City of Bakersfield) when compared with the May 2014 Project with the exception of the community of Oildale, which is not impacted by the May 2014 Project.
- The F-B LGA, when compared to the May 2014 Project, would result in similar business relocation impacts. The F-B LGA would require 377 business relocations, while the May 2014

Project would require 392 business relocations. As shown in Table 8-A-39 of Appendix 8-A of the Draft Supplemental EIR/EIS, the F-B LGA would result in greater business relocations in the city of Shafter and community of Oildale when compared to the May 2014 Project. However, the F-B LGA would result in fewer business relocations in the City of Bakersfield and in unincorporated Kern County.

- The F-B LGA, when compared to the May 2014 Project, results in fewer total direct impacts on waters and wildlife habitat. As shown in Table 8-2 of the Draft Supplemental EIR/EIS, the F-B LGA would result in 17.14 acres of total direct impacts on waters, while the May 2014 Project would result in 20.14 acres of total direct impacts on waters. As shown in Table 8-2 of the Draft Supplemental EIR/EIS, the F-B LGA would result in fewer total direct impacts to wildlife habitat than the May 2014 Project.
- The F-B LGA, when compared to the May 2014 Project, would result in fewer permanent impacts to Important Farmlands. As shown in Table 8-3 of the Draft Supplemental EIR/EIS, the F-B LGA would permanently impact 372 acres of Important Farmlands compared to 485 acres under the May 2014 Project.
- The Authority submitted Checkpoint C materials to the USACE and USEPA on March 10, 2017 and May 2, 2017, and received concurrence from the agencies that the Preferred Alternative which includes the F-B LGA contains the preliminary Least Environmentally Damaging Practicable Alternative on May 5, 2017 (USACE) and May 22, 2017 (USEPA).

Since the publication of the Draft Supplemental EIR/EIS, the City of Bakersfield provided concurrence with the Section 4(f) *de minimis* impact finding related to the F-B LGA:

- Both the F-B LGA and the May 2014 Project would result in Section 4(f) impacts on resources located in the City of Bakersfield. The May 2014 Project would result in a permanent 4(f) use impact to Kern River Parkway and Mill Creek Linear Park, which represents greater impacts than the F-B LGA, which would result in a *de minimis* Section 4(f) impact to the Kern River Parkway and Weill Park. On September 12, 2018, the City of Bakersfield issued concurrence with the *de minimis* Section 4(f) finding for the F-B LGA. The City of Bakersfield did not issue concurrence with Section 4(f) uses for the May 2014 Project.

The Authority finds that the Preferred Alternative is the environmentally superior alternative overall that best meets the project purpose and need and project objectives.

5.5 Conclusion on Alternatives

In summary, the Authority finds that there are no feasible alternatives that would avoid or substantially lessen the significant adverse impacts of the Preferred Alternative that would remain after application of mitigation measures, while still meeting the project's underlying purpose and project objectives. Because adverse environmental impacts remain, the Authority will adopt a Statement of Overriding Considerations, as discussed in the Chapter 7.0 of these Findings.

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6 MITIGATION MEASURES SUGGESTED BY COMMENTERS

Some of the comments on the Fresno to Bakersfield Section Draft Supplemental EIR/EIS suggested additional mitigation measures and/or modifications to the measures recommended in these documents. Some comments also suggested additions to the project that are not necessarily connected to an adverse environmental impact. The mitigation measures recommended in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS represent the professional judgment of subject matter experts on reasonable and feasible approaches to reduce significant adverse environmental impacts. Nevertheless, in some instances, the Authority and FRA have incorporated suggestions from comments to refine or improve mitigation. This discussion explains the reasons for not incorporating certain of the mitigation measures suggested in comments. The Authority considered the following points in determining whether to include a mitigation measure suggested in comments:

- Whether the suggestion relates to a significant and unavoidable environmental effect of the project, or instead relates to an effect that is already less than significant or can be mitigated to less-than-significant levels by proposed mitigation measures in the Fresno to Bakersfield Section Draft Supplemental EIR/EIS;
- Whether the proposed language represents clear improvement, from an environmental standpoint, over the draft language that a commenter seeks to replace;
- Whether the proposed language is sufficiently clear as to be easily understood by those who will implement the mitigation as finally adopted;
- Whether the language might be too inflexible to allow for pragmatic implementation;
- Whether the suggestions are feasible from an economic, technical, legal, policy, or other standpoint;
- Whether the measure addresses an impact not caused by the HSR project; and,
- Whether the measure addresses a social or economic impact, as opposed to an impact on the physical environment.

Authority staff, with assistance from subject matter experts, have carefully considered mitigation measures proposed in comments. The following identifies suggestions for mitigation measures which the Authority has not incorporated and the rationale for not including the measure. The list below is not intended to be exhaustive; to the extent that suggestions on mitigation measures that were rejected are not identified below, the Authority finds, based on the analysis contained in the Fresno to Bakersfield Section Final Supplemental EIR and the record as a whole, that such suggestions are appropriately rejected for one or more of the reasons identified above.

Section 3.2, Transportation

Measure Addresses an Impact that is Less Than Significant. The following mitigation measures were not adopted because the impact was identified as less than significant.

- The addition of a light-rail system to/from F-B LGA Station to downtown, Old Town, Amtrak, and the California Corridor to reduce private vehicle/taxi/Uber access to/from the F Street Station.

The Draft Supplemental EIR/EIS did not identify an impact that would require the development of a light-rail system as mitigation. Additionally, the project itself will be providing multimodal facilities and access including transit, bicycle, and pedestrian access in the vicinity of the station.

- Public transit and active transportation access to/from the F Street station.

As referenced previously, the project itself will be providing multimodal facilities and access including transit, bicycle, and pedestrian access in the vicinity of the station. No mitigation measure is required.

- Expand Mill Creek Linear Park south from California Avenue to Brundage [sic] to enhance grade-separated active transportation access to/from disadvantaged communities to a station at F-B LGA.

The City of Bakersfield Making Downtown Bakersfield Vision Plan (Bakersfield 2018b; Vision Plan) describes a phased effort to link the F Street Station and the Amtrak Station through the development of transit, bicycle, and pedestrian improvements to enable passengers to transfer from the HSR train to local commuter transit. These improvements include bus rapid transit on Chester and California Avenues, a downtown shuttle, and mobility hubs at the Amtrak Station, HSR station, and the Golden Empire Transit Center. While these services are central to connecting the HSR station and downtown, they provide the added benefit of offering a new alternative form of transportation for non-HSR riders throughout downtown. The Vision Plan also proposes public realm improvements along three corridors to form a pedestrian friendly loop around the downtown area, connecting residential, commercial, and parks, and open space areas and activating the F Street station area. No mitigation measure is required.

- Grade-separate SR 204 and M Street and SR 204 and Q Street to mitigate traffic impacts on local streets.

The Draft Supplemental EIR/EIS identifies that the intersections of Golden State Avenue (SR 204) at M Street and Golden State Avenue (SR 204) at Q Street do not require grade separation due to impacts from the project. Therefore, no mitigation is required.

Section 3.3, Air Quality and Global Climate Change

Measure Addresses an Impact that is Less Than Significant. The following mitigation measure was not adopted because the impact was identified as less than significant.

- Mitigation measures to address the increase in CO concentrations at F Street and 23rd, 24th, and 30th Streets.

The modeled CO concentrations are identified in Table 3.3-14 of the Draft Supplemental EIR/EIS. As discussed in the Draft Supplemental EIR/EIS, the model results indicated that CO levels would remain well below the national ambient air quality standards and California ambient air quality standards, therefore, additional mitigation measures are not required.

Measure Addresses an Impact Not Caused by the HSR Project. The following mitigation measure was not adopted because the impact would not be caused by the HSR project.

- Mitigation measures that address specific air quality and health impacts for relocating industrial properties along the F-B LGA alignment.

Air quality and health mitigation measures required of the project are identified in Section 3.2 of these Findings. Any industrial property that would be relocated would be evaluated separately under CEQA (by the local agency) for potential impacts at that new location.

Section 3.5, Public Utilities and Energy

Measure Addresses an Impact that is Less Than Significant. The following mitigation measure was not adopted because the impact was identified as less than significant.

- Resolve all irrigation issues created by the bifurcation.

Implementation of PUE-IAMM#1: Minimization of Utility Interruption requires that when relocating an irrigation facility is necessary, if feasible, the Contractor will provide a new operational facility prior to disconnecting the original facility. In accordance with PUE-IAMM#1, the Contractor would provide new irrigation facilities, as feasible, prior to disconnecting the existing service.

The Draft Supplemental EIR/EIS includes an analysis of the feasibility of continued agricultural activity on remnant parcels along the alignment. As noted under Impact AG#5, Effects on Agricultural Land from Parcel Severance, parcel severance could cause hardship to irrigation systems. The Authority would work with irrigation districts and landowners to protect irrigation

systems as they intersect HSR. During the right-of-way acquisition process, the Authority's right-of-way agents will work with each affected property owner to address issues of concern.

Section 3.14, Agricultural Land

Measure Does Not Address an Impact on the Environment. The following mitigation measures were not adopted because the impact is not an impact on the environment.

- Provide at least two additional "ag undercrossings" adjacent to the Farmland Reserve, Inc. property.

As discussed in Section 2.4.5.1 of the Draft Supplemental EIR/EIS, "over crossings or undercrossings for the Fresno to Bakersfield Section would be provided approximately every 1 mile or less in many locations due to existing roadway infrastructure." In proximity to the Farmland Reserve, Inc. parcels, "(r)oad closures would occur at Orange Avenue E and at Mendota Road (a private road)" (Section 2.6 of the Draft Supplemental EIR/EIS). However, access surrounding the Farmland Reserve, Inc. properties would be maintained at the Cherry Avenue and Driver Road undercrossings. As discussed in the F-B LGA Transportation Analysis Technical Report (May 2017), the F-B LGA would result in no significant impacts due to the project on any roadway segments or intersections under existing plus project conditions. While under future plus project conditions, the F-B LGA would result in no significant impacts due to the project on any roadway segments but would result in significant impacts on two intersections: SR 43 and Ash Avenue and Beech Avenue and Riverside Street. The nearest of these affected intersections is 1 mile west of the Farmland Reserve, Inc. property. No environmental impacts are expected to result from closure of roads in the vicinity of the Farmland Reserve, Inc. property; therefore, no mitigation is required.

- Provide additional "harvest roads" due to the bifurcation.

Consistent with the discussion above, access surrounding the Farmland Reserve, Inc. properties would be maintained at the Cherry Avenue and Driver Road undercrossings. No environmental impacts are expected to result from closure of roads in the vicinity of the Farmland Reserve, Inc. property; therefore, no mitigation is required.

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7 STATEMENT OF OVERRIDING CONSIDERATIONS

The Fresno to Bakersfield Section Final Supplemental EIR and the CEQA Findings of Fact conclude that implementing the Preferred Alternative as part of the Fresno to Bakersfield Section of the HSR System, will result in certain significant impacts to the environment that cannot be avoided or substantially lessened with the application of feasible mitigation measures or feasible alternatives. This Statement of Overriding Considerations is therefore necessary to comply with CEQA, Public Resources Code, Section 21081, and the State CEQA Guidelines, Section 15093. The significant and unavoidable impacts and the benefits related to the Preferred Alternative are described below. The Authority Board has carefully weighed these impacts and benefits and finds that each of the benefits described below of implementing the Preferred Alternative, independently of the other described benefits, outweigh the significant and unavoidable environmental impacts.

7.1 General Findings on Significant and Unavoidable Impacts Associated with the Preferred Alternative

Based upon the Fresno to Bakersfield Section Final Supplemental EIR and the CEQA Findings of Fact contained herein, as well as the evidentiary materials supporting these documents, the Authority finds that implementing the Preferred Alternative could result in the following list of significant and unavoidable impacts to the environment:

Noise and Vibration

- Impact N&V #3 – Project Noise Impacts

Agricultural Land

- Impact AG #4 – Permanent Conversion of Agricultural Land to Nonagricultural Use

Aesthetic and Visual Resources

- Impact AVR #4 – Lower Visual Quality in the Shafter Town Landscape Unit
- Impact AVR #4 – Lower Visual Quality in the Rural San Joaquin Valley Landscape Unit
- Impact AVR #4 – Lower Visual Quality in the North Bakersfield Landscape Unit
- Impact AVR #4 – Lower Visual Quality in the Kern River Landscape Unit
- Impact AVR #5 – Visual Quality Effects to Valley Oaks Charter School

Cumulative Impacts

- The contribution of the Preferred Alternative to cumulatively considerable construction noise impacts would be cumulatively considerable because of the size of the HSR construction project relative to other development that may occur adjacent to the Preferred Alternative.
- The noise impacts associated with the Preferred Alternative, together with operational noise impacts of past, present, and reasonably foreseeable projects adjacent to transportation corridors would cause a cumulatively considerable noise impact. Because of the large number of sensitive receivers along transportation corridors, the project contribution to the noise impact would be cumulatively considerable.
- The contribution of the Preferred Alternative to cumulative impacts to agricultural lands would be cumulatively considerable because of the conversion of agricultural lands to nonagricultural land uses.
- The construction and operational visual impacts associated with the Preferred Alternative, together with the construction and operational visual impacts of past, present, and reasonably foreseeable projects would be cumulatively considerable.

- Continued urbanization and development projected under the cumulative condition could result in exposure and disruption of archaeological and paleontological resources and traditional cultural properties, and removal or damage to historic architectural resources, and would result in a cumulatively considerable impact. The Preferred Alternative's contribution to these impacts would be cumulatively considerable under CEQA.

With the approval of the Preferred Alternative and the adoption of the CEQA Findings of Fact, the Authority is committing to implement the mitigation measures identified for the portion of the Preferred Alternative from just north of Poplar Avenue in Kern County south to the intersection of 34th Street and L Street including the F Street Station to ensure that significant impacts are mitigated to a less-than-significant level to the extent feasible, and that the project's contribution to cumulative impacts is minimized and mitigated to the extent feasible. The Authority finds that the mitigation measures adopted with the findings are the appropriate measures to approve at this time because they apply to the Preferred Alternative.

The Authority further finds that while the mitigation measures it adopts as part of the CEQA

Findings of Fact will substantially lessen or avoid many of the significant environmental impacts discussed in the Draft Supplemental EIR/EIS, and mitigation adopted to address one area may result in beneficial effects in other subject areas, the above impacts will not all be mitigated to a less-than-significant level, and remain significant and unavoidable.

The Authority finds that each of the following specific economic, legal, social, technological, environmental and other considerations and benefits of the Preferred Alternative, separately and independently, outweigh the unavoidable adverse environmental effects of the project, and each one is an overriding consideration independently warranting project approval. The Authority finds that the significant unavoidable impacts of the project are overridden by each of these individual considerations, standing alone. The significant unavoidable environmental effects remaining after adoption of mitigation measures are considered acceptable in light of these significant benefits of the Preferred Alternative, as described in this statement of overriding considerations.

7.2 Overriding Considerations for the Preferred Alternative and the High-Speed Rail System

There are numerous benefits of the portion of the Preferred Alternative. In addition, there are numerous benefits of the HSR System as a whole, of which the Fresno to Bakersfield Section (and the F-B LGA) is an integral part. These benefits viewed both individually and collectively, outweigh the significant and unavoidable adverse effects of implementing the portion of the Preferred Alternative. These benefits are in the areas of transportation, the environment, land use planning, economics, and social considerations, and are set forth below.

A. Environmental Benefits of the HSR System

As discussed in Technical Appendix 1-B of the Draft Supplemental EIR/EIS, the benefits of the HSR include reduced vehicle miles traveled (VMT), reduced energy use for transportation, and reduced air pollution from transportation sources, including reduced emissions of GHGs (see Section 3.2, Transportation, and Section 3.3, Air Quality and Global Climate Change of the Fresno to Bakersfield Section Final EIR/EIS). These benefits were derived based on the assumption in the Fresno to Bakersfield Section Final EIR/EIS that the entire 800-mile system (Full System—both Phase 1 and 2) would be operational and serving 69 million riders (equivalent to HSR fares set at 83 percent of airfares) to 98 million riders (equivalent to HSR fares set at 50 percent of airfares) annually in 2035. The following summarizes the conclusions of specific benefits that were disclosed in the Fresno to Bakersfield Section Final EIR/EIS.

Benefits from a Reduction in Vehicle Miles Traveled

The Fresno to Bakersfield Section Final EIR/EIS concluded that the HSR project would divert automobile trips to HSR trips, thus reducing local and regional VMT. The Fresno to Bakersfield Section Final EIR/EIS identified a statewide VMT reduction of approximately 21 to 31 million miles daily with the implementation of a HSR project as compared to the No Project Alternative in

2035. The diversion from automobile to HSR was estimated to lead to a 7 to 10 percent statewide reduction in VMT on the state highway system. The reduction in both automobile and air travel VMT would provide benefits in the form of reduced congestion on both the state's highway system as well as at airports. Within the Fresno, Kings, Tulare, and Kern counties project area, the VMT reduction was estimated at 5.4 to 8.0 million miles daily.

Benefits from a Reduction in Air Pollution and Greenhouse Gas Emissions

It was disclosed in the Fresno to Bakersfield Section Final EIR/EIS that the HSR project would have a beneficial effect on (i.e., reduce) statewide emissions of applicable pollutants due to projected reductions of pollutants generated by vehicle and air travel. The analysis in the Final EIR/EIS included the estimated change in emissions due to projected reductions of on-road VMT and intrastate air travel, and increases in electrical demand (required to power the HSR). As compared to the No Project Alternative in 2035, all air pollution emissions analyzed (i.e., carbon monoxide, particulate matter smaller than or equal to 10 microns in diameter, particulate matter smaller than or equal to 2.5 microns in diameter, oxides of nitrogen, and volatile organic compounds) would be reduced.

The HSR project was included in the Assembly Bill 32 scoping plan to help the State meet GHG emission reduction targets. The reduction in GHG emissions statewide was estimated to be approximately 2.5 million metric tons per year of carbon dioxide (CO₂) emissions for the HSR when compared to the 1.7 million metric tons per year of CO₂ emissions for the No Project Alternative.

Benefits from a Reduction in Energy Use

The Fresno to Bakersfield Section Final EIR/EIS showed how the new HSR travel mode would divert both automobile trips and air travel, resulting in less energy use for transportation. As compared to the No Project Alternative in 2035, the Fresno to Bakersfield Section Final EIR/EIS concluded that the HSR would reduce transportation energy consumption by 63,262 to 94,760 million British thermal units daily.

7.2.2 Benefits of the Preferred Alternative When Considered with the Previously Approved Fresno to Bakersfield Section Preferred Alternative

The Preferred Alternative when considered with the previously approved Fresno to Bakersfield Preferred Alternative (2014) has numerous benefits that outweigh the unavoidable adverse impacts in the Fresno to Bakersfield section of the HSR system.

A. Provides an Essential Building Block to Establish Very High-Speed Passenger Service

A benefit from the Preferred Alternative from when considered with the previously approved Fresno to Bakersfield Preferred Alternative, is that this piece of the HSR system provides the essential back-bone of the system in the Central Valley, from which the remainder of the system can continue to be planned, environmentally evaluated, and eventually constructed and operated. Construction has been initiated in the Central Valley, because the Central Valley forms the foundation of the HSR system (Authority's 2012 and 2014 Business Plan). As identified in the 2018 Business Plan, ridership and revenue forecasts show that the initial line—from San Francisco to Bakersfield through the Silicon Valley—will produce revenue that can help fund construction from the Central Valley southward to the Los Angeles Basin. As a very large linear infrastructure project, the roughly 800-mile statewide system, or even the roughly 540-mile Phase 1 of the system between San Francisco and Los Angeles, cannot feasibly be planned, environmentally reviewed, constructed, and be ready for operation all at once. Construction must begin somewhere, and the Fresno to Bakersfield Section of the system provides a benefit of serving as a critical foundation of the system, without which the remainder of the system would not be built and made operational as efficiently.

B. Provides Economic and Employment Benefits from Construction

Construction of the Preferred Alternative would generate sales tax revenue gains for the region over the construction period that have been estimated at about \$589,000 per year for the estimated six-year construction period. These sales tax revenue gains would increase local government revenues during the construction period and provide an economic benefit.

Employment from construction of the Preferred Alternative would provide employment benefits in the region. It is estimated that about 11,028 one-year, full-time job equivalents would be created within the cities of Shafter and Bakersfield and Kern County over the construction period. Direct jobs in the construction sector comprise about 52 percent of the total estimate, or about 5,786 one-year, full-time job equivalents. Job creation is anticipated to be highest during peak construction years of 2021-2022, requiring about 3,033 workers annually, with about 1,591 of these as direct jobs in the construction sector and about 1,442 as indirect and induced jobs in other sectors. The provision of new construction and non-construction job opportunities over the construction period in the San Joaquin Valley, which has suffered very high unemployment during the recent recession, particularly in the construction sector, is an important project benefit. In May 2018, the Authority was joined by workers representing multiple local union halls to announce that more than 2,000 construction jobs have been created since the start of the HSR project.

C. Provides a New Expedited and Consistent Travel Option

As discussed in the 2018 Business Plan, the Central Valley ranks as one of California's most underserved regions when it comes to transport. With HSR, a trip from as far south as Bakersfield and other key locations in the Central Valley to the San Francisco Bay Area will take two hours or less, and the travel duration will be the same every time no matter how congested the roads or how inclement the weather. HSR in the Central Valley would provide a new, faster, and reliable mobility option for travelers.

D. Summary of Benefits of Preferred Alternative

In summary, the Authority finds that there are benefits associated with the Preferred Alternative that will occur independently of any other construction of the high-speed rail system. The Authority further finds that the portion of the Preferred Alternative offers benefits in conjunction with the already-approved portion of the Fresno to Bakersfield section of the HSR system. Each of these benefits individually, as well as in combination, are sufficient overriding considerations that outweigh the significant and unavoidable environmental impacts of implementing the Preferred Alternative.

7.2.3 Benefits of the Preferred Alternative as Part of the Statewide High-Speed Rail System

The Preferred Alternative also has numerous benefits that outweigh the unavoidable adverse impacts in the Fresno to Bakersfield Section of the high-speed train system when viewed as part of the larger, statewide HSR system. These benefits are documented in the Supplemental EIR/EIS in the areas of transportation, air quality, energy, land use, and socioeconomics and are appropriate to consider in light of the Authority's first-tier decisions to move forward with a statewide electrified HSR system.

A. Transportation Benefits

The capacity of California's intercity transportation system is insufficient to meet existing and future demand and the current and projected future congestion of the system will continue to result in deteriorating transportation conditions, reduced reliability, and increased travel times. The system has not kept pace with the tremendous increase in population, economic activity, and tourism in California. The interstate highway system, commercial airports, and conventional passenger rail system serving the intercity travel market are operating at or near capacity and will require large public investments for maintenance and expansion to meet existing demand and future growth over the next 20 years and beyond. Moreover, the ability to expand major highways

and key airports is uncertain; some needed expansions may be impractical or may be constrained by physical, political, or other factors.

As described in the Chapter 1 of the Draft Supplemental EIR/EIS, the HSR System would meet the need for a safe and reliable mode of travel that would link the major metropolitan areas of the state and deliver predictable, consistent travel times sustainable over time. The HSR System also would provide quick, competitive travel times between California's major intercity markets. For intermediate intercity trips such as Fresno to Los Angeles, the HSR System would provide considerably quicker travel times than either air or automobile transportation, and would bring frequent HSR service to portions of the state such as the Central Valley that are not well served by air transportation. In addition, the passenger cost for travel via the HSR service would be lower than for travel by air for the same intercity markets.

By providing a new intercity, interregional, and regional passenger mode, the HSR System will improve connectivity and accessibility to other existing transit modes and airports. Travel options available in the Central Valley and other areas of the state with limited bus, rail, and air service for intercity trips will be improved. The HSR System within the Central Valley would provide beneficial transportation impacts beyond additional modal connectivity. The change from vehicles to HSR would reduce daily auto trips and corresponding vehicle delay and congestion. A substantial amount of intercity auto travel (primarily using SR 99) would divert to HSR service, relieving projected future congestion on SR 99. The reduction in future intercity trips would also improve the ability of SR 99 to accommodate freight traffic and would improve projected travel speeds on the freeway. The HSR System also provides system redundancy in cases of extreme events such as adverse weather or petroleum shortages (HSR trains are powered by electricity which can be generated from non-petroleum-fueled sources; automobiles and airplanes currently require petroleum). The HSR System will provide a predominantly separate transportation system that will be less susceptible to many factors influencing reliability, such as capacity constraints, congestion, and incidents that disrupt service.

The HSR System will add capacity to the state's transportation infrastructure and reduce traffic on certain intercity highways and around airports to the extent that intercity trips are diverted to the HSR System. As stated in Section 3.2 of the Fresno to Bakersfield Section Final EIR/EIS, diversions from the automobile to HSR could lead to a projected 7 percent to 10 percent reduction in vehicles miles traveled on the highway system to and from the Fresno/Bakersfield region (7 percent if based on a ticket price of 83 percent of airfare cost, or 10 percent if based on a ticket price of 50 percent of air fare cost). This translates to a reduction in daily VMT in Fresno, Kings, Tulare, and Kern counties of 5.4 to 8 million miles daily in 2035 as compared to No Project. The HSR System also will decrease injuries and fatalities due to diversion of trips from highways, will improve connectivity, and will add a variety of connections to existing modes, additional frequencies, and greater flexibility.

The HSR System within the Central Valley would provide a new regional surface transportation system that complements and connects with existing transportation modes. At a regional level, HSR service would reduce vehicle miles traveled by providing motorists an alternative to relying on existing interregional and intercity freeways and highways. The HSR System would be grade-separated from freeways, highways, and roads, allowing vehicular traffic to pass unimpeded under or over the rail corridor.

The State's growing population, and the growing demand on the State's transportation system, was the early impetus for high-speed rail in California. The same trends that motivated the State to investigate, support, and proceed to plan the high-speed rail system are just as compelling today as in the last two decades. The State's need for a safe, reliable, and fast mode of intercity travel to meet its growing transportation demands continues to a critical policy basis for moving the project forward.

The F Street Station would be located near a network of regional highways in an area with no existing train service as well as in proximity to the Kern River Parkway and would provide a direct connection to that facility. The location of the F Street Station would complement existing public

transportation in metropolitan Bakersfield including local buses, intercity buses, Amtrak trains, and paratransit services. Vehicle circulation from the F Street Station would be organized to maximize separation of flows of private vehicle and public transit circulation to reduce delays of public transit caused by traffic congestion. The existing transit center to the east of F Street provides a convenient connection to Chester Avenue, where the City of Bakersfield plans to construct a future bus rapid transit line. The transit center would also be connected to the primary building of the F Street Station with a dedicated bike/pedestrian walkway that is grade-separated at F Street. This dedicated bike/pedestrian walkway, proposed as part of the Preferred Alternative, would run the length of the F Street Station site and would provide bike and pedestrian access between Chester Avenue, the main station building entrance, and the Kern River trail system. The nearest existing bike lanes or paths are on Chester Avenue adjacent to the station site. Additional bike lanes also exist along P and Q Streets, 21st Street, 30th Street, 34th Street, and the Kern River Parkway, while there are planned bike lanes along Edison Highway to the east of the proposed station and near the intersection of Airport Drive and Golden State Avenue north of the Kern River and the proposed station area (City of Bakersfield and Kern County 2010).

B. Environmental Benefits

In addition to reducing highway congestion, the HSR System as a whole will provide substantial improvement in air quality and transportation energy efficiency. The HSR System will decrease air pollution statewide and in all air basins analyzed by reducing pollution generated by automobile combustion engines; air pollution is of particular concern in the San Joaquin Valley, which will benefit greatly from operation of the HSR. This is a result of decreased vehicle miles traveled by automobiles and decreased automobile congestion. Emissions of CO, PM₁₀, PM_{2.5}, NO_x, VOC, and CO₂ will all be reduced as compared to the No Project Alternative in 2035. Compared to the No Project scenario, the HSR System will result in a reduction in transportation energy consumed of 63,262 to 94,760 million British thermal units daily. The HSR Project would result in a reduction of 12.7 million barrels of oil and 1.7 to 2.5 million metric tons per year of CO₂ emissions compared to the No Project Alternative by 2035, helping the state reduce GHG emissions consistent with the goals of Assembly Bill 32 (AB 32) and Executive Order S-3-05. The Central Valley contribution to this reduction would be up to 0.56 million metric tons (1.2 billion pounds) of GHG emissions annually by 2035 for the Preferred Alternative.

The statewide HSR System has minimized environmental impacts following existing transportation corridors to the maximum extent feasible. The Preferred Alternative and the F Street Station location and the alignment and station locations for the system as a whole have been crafted to avoid and/or minimize the potential impacts to cultural, park, recreational and wildlife refuges to the greatest extent feasible in light of the project's objectives. In this way, the HSR System meets the purpose and need and project objectives for improving the state's transportation options, while doing so in an environmentally sensitive way.

The USACE and the USEPA have both concurred (USACE, May 5, 2017, and USEPA, May 22, 2017) that the Preferred Alternative is the LEDPA. For this reason, the Preferred Alternative is the alternative for this portion of the Fresno to Bakersfield Section that will have the highest likelihood of being efficiently constructed and operated.

C. Consistency with State Policies in Executive Order S-3-05, Assembly Bill 32, Senate Bill 375, Senate Bill (SB) 2X and First Update to the Climate Change Scoping Plan, Senate Bill 743, Executive Order B-30-15, Senate Bill 32, and the Short-Lived Climate Pollutant Reduction Strategy

In 2005, California set statewide targets for reducing GHG emissions. Executive Order S-3-05 requires that GHG emissions be reduced to 2000 levels by the year 2010, to 1990 levels by the year 2020, and 80 percent below 1990 levels by the year 2050. Shortly after the issuance of this executive order, the California State Legislature passed AB 32, the Global Warming Solutions Act of 2006. AB 32 recognizes that California is the source of substantial amounts of GHG emissions and that global climate change poses a serious threat to the economic well-being, public health,

natural resources, and the environment of California. AB 32 requires that the CARB, the state agency charged with regulating air quality, establish a statewide greenhouse gas emissions limit to be achieved by 2020, with the intent that the emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gasses beyond 2020. AB 32 also requires that CARB create a plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases” in California. This plan was developed by CARB in 2008 as the Climate Change Scoping Plan (California Air Resources Board 2008), the state’s road map to reaching the GHG reduction goals required by AB 32. The Plan supports the implementation of a High-Speed Rail System to provide more mobility choice and reduce GHG emissions. The “Approved Scoping Plan” was adopted by the CARB in December 2008 and reapproved by the CARB in August 2011 after additional alternatives analysis was added in response to litigation.

Adopted in September 2008, Senate Bill 375 (SB 375) provides a new planning process to coordinate community development and land use planning with RTPs, in an effort to reduce sprawling land use patterns, and thereby reduce VMT and associated VMT. SB 375 is one major tool being utilized to meet the AB 32 goals. SB 375 sets priorities to help California meet GHG reduction goals and requires that RTPs prepared by metropolitan planning organizations include a “sustainable communities strategy” that supports the GHG emission reduction targets set by CARB. Because of the potential for increased transit-oriented development-type development and other land use planning benefits from HSR implementation in the Bakersfield area, the HSR will be supportive of the Kern Council of Governments Sustainable Communities Strategy document by providing a HSR as a transportation opportunity with its associated benefits to land use patterns, which will contribute to the SCS document goal to meet SB 375 GHG reduction targets. The SCS completed by Kern Council of Governments) includes California HSR through Kern County, and therefore includes the analysis performed to demonstrate that Kern Council of Governments’ RTP/SCS meets the greenhouse gas emission reduction targets set by CARB per the requirements of SB 375.

In April 2011, Governor Brown signed SB 2X requiring California to generate 33 percent of its electricity from renewable energy by 2020. In May 2014, CARB approved the First Update to the Climate Change Scoping Plan (CARB 2014). This first update defines CARB’s climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in Executive Order S-3-05. The update highlights California’s progress toward meeting the “near-term” 2020 GHG emission reduction goals defined in the original Climate Change Scoping Plan (CARB 2008). It also evaluates how to align the state’s longer-term GHG reduction strategies with other state policy priorities, like those for water, waste, natural resources, clean energy and transportation, and land use (CARB 2014).

On September 27, 2013, Governor Brown signed SB 743, which creates a process to change the way that transportation impacts are analyzed under CEQA. SB 743 requires the Governor’s Office of Planning and Research to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. Measurements of transportation impacts may include VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. Once the CEQA Guidelines are amended, auto delay will no longer be considered a significant impact under CEQA. Transportation impacts related to air quality must still be analyzed under CEQA (Office of Planning and Research 2017).

In April 2015, Governor Brown issued Executive Order B-30-15, which expanded the goals of Executive Order S-3-05 by calling for a new target of 40 percent below 1990 levels by 2030. This Executive Order also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in Executive Order S-3-05 of reducing emissions 80 percent under 1990 levels by 2050. The new emission reduction target of 40 percent below 1990 levels by 2030 is intended to make it possible to reach the state’s ultimate goal set by Executive Order S-3-05.

In October 2015, Governor Brown signed into legislation SB 350, which requires retail seller and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030, with interim goals of 40 percent by 2024, and 45 percent by 2027.

On September 8, 2016 Governor Brown signed into law SB 32, effectively extending California's landmark AB 32 to the year 2030. SB 32 effectively establishes a new greenhouse gas reduction goal for statewide emissions of 40 percent below 1990 levels by 2030. This goal is 40 percent more stringent than the current AB 32 mandated goal of 1990 levels by 2020. In terms of metric tons, this means that statewide, California not only needs to reduce emissions from 441.5 million metric tons (MMT) of carbon dioxide equivalents (CO₂e) in 2014 to 431 MMT CO₂e by 2020, but will now need to cut emissions to 258.6 MMT CO₂e by 2030.

SB 605 (Lara, Chapter 523, Statutes of 2014) directed CARB to develop a comprehensive short-lived climate pollutant (SLCP) strategy, in coordination with other state agencies and local air quality management and air pollution control districts. Short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. CARB staff released a proposed SLCP Strategy in April 2016. In September 2016, Governor Brown signed SB 1383 (Lara, Chapter 395, Statutes of 2016) mandating CARB to take certain specific actions with regard to the SLCP strategy. SB 1383 identifies specific reduction targets for three SLCPs (i.e., black carbon, fluorinated gases, and methane), which the SLCP Strategy, currently being revised by CARB, will address.

The transportation sector is responsible for about 40 percent of California's GHG emissions (Office of the Governor 2007). Emissions of criteria pollutants (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide) and GHG emissions from motor vehicles are directly related to the amount of fuel burned and affect air quality in the San Joaquin Valley. The San Joaquin Valley Air Basin exceeds federal and state air quality standards for ozone, PM_{2.5}, and for the state's 24-hour standard for PM₁₀. The projected population growth (see Section 3.19, Regional Growth of the Draft Supplemental EIR/EIS) in the San Joaquin Valley will result in an increase in VMT (see Section 3.2, Transportation of the Draft Supplemental EIR/EIS) and the volume of pollutants emitted by motor vehicles. The continued increase in traffic will exacerbate the existing air quality problem and impede the region's ability to attain state and federal ambient air quality standards. Because emissions are directly proportional to the amount of fuel burned, offering effective transportation choices that can reduce driving will be critical for reducing these emissions.

Compared to travel by car, an electric-powered HSR System would reduce CO₂ emissions. The HSR System would provide a more energy-efficient travel mode; a trip on the HSR System would use one-third the energy of a similar trip by air, and one-fifth the energy of a trip made by car (Bay Area Council Economic Institute 2008). In addition, the HSR System affords a new opportunity to serve as the backbone of a comprehensive transportation network with connectivity between the statewide, regional, and local transit systems. Providing an interconnected network of alternative transportation options that support more concentrated development around major transit access points, establishes a new framework for the state to integrate land use and transportation decision-making.

The Draft Supplemental EIR/EIS considered the air quality emissions associated with the Preferred Alternative as part of the Fresno to Bakersfield Section as a whole. As shown in Table 3.3-13 in the Draft Supplemental EIR/EIS, emission results indicate the project would result in a net regional decrease in emissions of criteria pollutants. These decreases would be beneficial to the San Joaquin Valley Air Basin and help the basin meet its attainment goals for ozone and particulates (PM₁₀ and PM_{2.5}).

D. Land Use Planning Benefits

In the vicinity of HSR stations, the HSR System will generally be compatible with local, regional, and state plans and policies that support rail systems, including the HSR, and transit-oriented development. It will offer opportunities for increased infill development and redevelopment of downtown centers, which would reduce pressures for conversion of surrounding agricultural land

to non-agricultural uses. The HSR System will promote transit-oriented, higher-density development around transit nodes as the key to stimulate in-fill development that makes more efficient use of land and resources, can better sustain population growth, and reduce development pressures on the surrounding agricultural lands. The increased density of development in and around urban HSR stations yields the additional public benefit of making public infrastructure improvements more cost-effective. The HSR station in Bakersfield would create a beneficial change in visual character when viewed from adjacent downtown locations. As discussed in Impact AVR #4 of the Draft Supplemental EIR/EIS, the F Street Station would be a dominant feature to the north of SR 204. Regardless of the station's exact appearance, it would be designed with a distinctive and potentially iconic architectural form to create a beneficial change in visual character when viewed from adjacent locations in the Central Bakersfield Landscape Unit. The indirect effects of the project would be most noticeable at the HSR stations and are expected to result in an overall increase in visual quality (Section 3.16). Additionally, the HSR System is expected to be a catalyst for wider adoption of smart growth principles in communities near the F Street station.

The HSR System will also meet the need for improved inter-modal connectivity with existing local and commuter transit systems. HSR stations in California, including the F Street Station, will be multi-modal transportation hubs. The concept of the HSR station as a transportation hub is also consistent with the Revised 2012 Business Plan, the primary difference being a lower level of ridership projected during the early years on implementation and operation. The F Street Station will provide linkage with local and regional transit, airports, and highways. In particular, convenient links to other rail services (heavy rail, commuter rail, light rail, and conventional intercity) will promote transit-oriented development at stations by increasing ridership and pedestrian activity at these "hub" stations. A high level of accessibility and activity at the stations can make the nearby area more attractive for additional economic activity.

The May 2018 City of Bakersfield Vision Plan describes a phased effort to link the F Street Station and the Amtrak Station through the development of transit, bicycle, and pedestrian improvements to enable passengers to transfer from the HSR train to local commuter transit. These improvements include bus rapid transit on Chester and California Avenues, a downtown shuttle, and mobility hubs at the Amtrak Station, HSR station, and the Golden Empire Transit Center. While these services are central to connecting the HSR station and downtown, they provide the added benefit of offering a new alternative form of transportation for non-HSR riders throughout downtown. The Vision Plan also proposes public realm improvements along three corridors to form a pedestrian friendly loop around the downtown area, connecting residential, commercial, and parks, and open space areas and activating the F Street Station area.

As discussed in Appendix 8-A of the Draft Supplemental EIR/EIS, the F Street Station presents opportunities for infill development, revitalization of existing large buildings, new job creation, and transit-oriented housing. The second phase of implementation detailed in the Vision Plan lays out a framework for redeveloping the area around the F Street Station. Garces Circle would be transformed from an automobile-oriented roundabout into a high-density, mixed-use retail, residential and office district. This new district will be supported by rehabilitating adjacent mixed-use and single-family neighborhoods.

E. Economic and Social Benefits

The HSR System will generate economic benefits related to revenue generated by the system, economic growth and jobs generated by construction and operation of the system, benefits from reduced delays to air and auto travelers, and economic advantages related to proximity to the HSR System.

Construction of the HSR System will generate the equivalent of approximately 239,000 construction-related job years for construction of the Silicon Valley to Central Valley Line (Authority 2018b, page 3), including approximately 11,028 job years within Kern County (Authority and FRA 2017c, page 5-44). Operations and maintenance of the HSR System would directly employ about 3,400 people by 2040 (Authority 2014, p. 61), and the potential statewide creation

of about 400,000 long-term permanent jobs. Operation of the HSR System is estimated to create up to 3,800 direct jobs (Authority 2016, page 90), and overall about 47,500 new jobs within the region. In addition, the HSR System would improve the economic productivity of workers engaging in intercity travel by providing an option to avoid the delays and unpredictability associated with air and highway travel. These economic benefits are in marked contrast to the cost of expanding airports and highways, which would be approximately twice the cost of the HSR System to meet the future transportation demand, assuming this type of expansion is even feasible (Authority 2012, page 3-15).

Experiences in other countries have shown that an HSR System can provide a location advantage to those areas in proximity to an HSR station because an HSR System would improve accessibility to labor and customer markets, potentially improving the competitiveness of the state's industries and the overall economy. Businesses that locate in proximity to an HSR station could operate more efficiently than businesses that locate elsewhere (Section 3.13 of the Draft Supplemental EIR/EIS). This competitive advantage may be quite pronounced in high-wage employment sectors that are frequently in high demand in many communities. Finally, the HSR System would provide an opportunity for connectivity for sectors of the population who currently are limited in their travel options. In addition, HSR is a mode of transportation that can enhance and strengthen urban centers. In combination with appropriate local land use policies, the increased accessibility afforded by the high-speed service could encourage more intensive development and may lead to higher property values around stations.

F. Benefits Will Accrue Slowly Under the Phased Implementation Approach in the Authority's Business Plans, But Will Still be Significant Benefits and They Will Build Over Time

The Authority's 2016 Business Plan describes a phased implementation strategy for construction of the HSR System. This strategy is supported in the Authority's 2018 Business Plan (page 17). In contrast to the assumptions in the Fresno to Bakersfield Section Final EIR/EIS, the Business Plans identify the HSR System being constructed in phases over time, rather than having all 800 miles of the statewide system being constructed concurrently and with fully developed operations in 2035. Because the system will be constructed and implemented more slowly over time than assumed in the Fresno to Bakersfield Section Final EIR/EIS, benefits of the system will also accrue more slowly over time than calculated in the Fresno to Bakersfield Section Final EIR/EIS.

Statewide automobile VMT reductions for a Phase 1 Blended approach would be approximately 36-38 percent of the benefits described above, and air travel VMT reductions about 37-45 percent of that described above (Authority and FRA 2014c). As described in the 2016 Business Plan (Authority 2016), the savings associated with riders on the initial Silicon Valley to Central Valley line are one part of the broader GHG emissions reductions that will occur through development of the HSR system. Reductions are projected to start at almost 120,000 metric tons of carbon dioxide equivalent (MT CO₂e) in 2025. Over time, and as high-speed rail expands to the full Phase 1 system, it will contribute substantially to reducing GHG emissions. The average annual savings of the Phase 1 system through 2040 is projected to be just over 1 million MT CO₂e, as opposed to the 1.7 to 2.5 million MT annually in 2035 as discussed in the Draft Supplemental EIR/EIS. In addition, energy use benefits would be less for a Phase 1 Blended approach, totaling approximately 31,300 to 52,000 million British thermal units daily, versus the 63,262 to 94,755 million British thermal units daily in 2035, as described in the Fresno to Bakersfield Section Final EIR/EIS. This still amounts to a savings of 5,400 to 9,000 barrels of oil per day (Authority and FRA 2014c).

Finally, the Authority has previously committed to power the high-speed train with an energy portfolio of 100 percent renewable sources. This commitment has been reaffirmed in the 2018 Business Plan (page 11). The environmental benefit of powering the high-speed train with 100 percent renewable energy is substantial in terms of CO₂ reduction benefits. Over time, a 100 percent renewable portfolio has potential to double the GHG reduction benefits from high-speed train operations over a non-renewable portfolio.

In summary, although benefits of the HSR system in the areas of VMT reduction, GHG reduction, and reduced transportation energy use are initially lower than described in the Draft Supplemental EIR/EIS main impact analysis based on the phased implementation strategy in the Authority's Business Plans, the benefits are still significantly positive, the benefits will continue to accrue and grow over time, and they will eventually achieve the level of benefit the Fresno to Bakersfield Section Final EIR/EIS describes. These benefits therefore still outweigh the significant and unavoidable adverse environmental impacts described in the Final Supplemental EIR and CEQA Findings of Fact.

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ATTACHMENT D-2

California High-Speed Rail Authority

**Findings, Findings Regarding Alternatives, and
Statement of Overriding Considerations (2014)**

CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report /
Environmental Impact Statement

Fresno to Bakersfield

CEQA Findings of Fact and Statement of Overriding Considerations

May 2014

as adopted by CHSRA Board on
May 7, 2014



**CEQA Findings of Fact and
Statement of Overriding
Considerations**

May 2014

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AB 32	Assembly Bill 32
ADRP	Archaeological Data Recovery Program
AQMD	air quality management district
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
ATP	Archaeological Treatment Plan
Authority	California High-Speed Rail Authority
BETP	Built Environment Treatment Plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CIDH	cast-in-drilled hole
CO	carbon monoxide
CRAA	California Relocation Assistance Act
CSLC	California State Lands Commission
CTS	California tiger salamander
CVFPB	Central Valley Flood Protection Board
dB	decibel(s)
dBA	A-weighted decibel(s)
EIR	environmental impact report
EIS	environmental impact statement
EMF	electromagnetic field
EMI	electromagnetic interference
ERA	environmentally restricted area
ESA	environmentally sensitive area
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GC	general conformity
GHG	greenhouse gas
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
HST	high-speed train
IBC	International Building Code
ICS	Initial Construction Segment
IOS	Initial Operating Segment
in/sec	inch(es)/second
L _{dn}	day-night sound level, dBA
LEDPA	least environmentally damaging practicable alternative
LOS	level of service
MMRP	Mitigation Monitoring and Reporting Program
MOA	memorandum of agreement
MOWF	maintenance-of-way facility
mph	mile(s) per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPS	National Park Service
NRHP	National Register of Historic Places

O ₃	ozone
PA	programmatic agreement
PM ₁₀	particulate matter smaller than or equal to 10 microns in diameter
PM _{2.5}	particulate matter smaller than or equal to 2.5 microns in diameter
PRMMP	Paleontological Resource Monitoring and Mitigation Plan
PRM	paleontological resources monitor
PRS	paleontological resources specialist
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB 375	Senate Bill 375
SCAG	Southern California Association of Governments
SCS	Sustainable Community Strategy
SHPO	State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVR	San Joaquin Valley Railroad
SOI	Secretary of the Interior
SCAQMD	South Coast Air Quality Management District
SR	state route
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air containment
TOD	transit-oriented development
U.S. EPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
V/C	volume to capacity
VERA	Voluntary Emissions Reduction Agreement
VMT	vehicle miles traveled
VOC	volatile organic compound

1.0 Introduction

These California Environmental Quality Act (CEQA) Findings of Fact and Statement of Overriding Considerations are intended to fulfill the responsibilities of the California High-Speed Rail Authority (Authority) under CEQA for its project approval for the Fresno to Bakersfield Section of the California High-Speed Train (HST) System. CEQA provides that no public agency shall approve a project or program, as proposed, if it would result in significant environmental effects as identified in an EIR, unless it adopts and incorporates feasible mitigation to avoid and reduce such effects and adopts appropriate findings.

Section 15091 of the CEQA Guidelines provides as follows:

- (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
 - (1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
 - (2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
 - (3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

CEQA Guidelines section 15093 further provides:

- (a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

These findings include a description of the Preferred Alternative for the Fresno to Bakersfield section, a description of the portion of the Preferred Alternative that the Authority will approve now and that portion the Authority reserves to a future decision, findings concerning potentially significant environmental impacts and mitigation to address such impacts, a discussion of cumulative and growth-inducing impacts, and a statement of overriding considerations.

The custodian of the documents and other materials that constitute the record of proceedings upon which these CEQA findings of fact and statement of overriding considerations are based is the California High-Speed Rail Authority, 770 L Street, Suite 800, Sacramento, California 95814, (916) 324-1541.

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2.0 Project Description

2.1 Background – Description of Statewide High-Speed Train System

The Authority has responsibility for planning, designing, constructing, and operating the California HST System. Its mandate is to develop a high-speed rail system in coordination with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports.

The California HST System will provide intercity, high-speed service on more than 800 miles of track throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The Authority and FRA prepared two first-tier environmental impact report/environmental impact statement (EIR/EIS) documents to select preferred alignments and station locations to advance for more detailed study in second-tier EIRs/EISs. Figure 1 shows the statewide HST System resulting from the first-tier EIRs/EISs and first-tier decisions. The HST System will use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and automated train-control systems, with trains capable of operating up to 220 miles per hour (mph) over a fully grade-separated, dedicated guideway alignment.

The Authority plans two phases: Phase 1 (to be built in stages depending on funding availability) will connect San Francisco to Los Angeles/Anaheim via the Pacheco Pass and the Central Valley with a mandated express travel time of 2 hours and 40 minutes, or less; Phase 2 will connect the Central Valley to the state's capital, Sacramento, and extend the system from Los Angeles to San Diego. Consistent with its first-tier decisions, the Authority has divided the HST System into nine individual sections for more detailed, second-tier analysis. In 2012, following certification of a second-tier Final EIR, the Authority selected an alignment and station locations for the Merced to Fresno section of the HST System. The Fresno to Bakersfield Section is the second of the nine individual sections to complete second-tier environmental review.

2.1.1 Description of the Preferred Alternative, Downtown Fresno–Mariposa Station Location, Kings/Tulare Regional Station–East, and Bakersfield Hybrid Station Location

As shown in Figure 2, from north to south, the Fresno to Bakersfield Preferred Alternative as described in the Final EIR/EIS would follow the BNSF Alternative from the northern end of the Fresno Station tracks to East Kamm Avenue in Fresno County. At East Kamm Avenue, the Preferred Alternative would continue along the BNSF Alternative–Hanford East to the Kings/Tulare Regional Station–East Alternative. From the Kings/Tulare Regional Station–East Alternative, the Preferred Alternative would follow the BNSF Alternative–Hanford East Alternative to just north of Nevada Avenue where it would transition to the Corcoran Bypass Alternative and travel east of the city of Corcoran. North of Avenue 136 in Tulare County, the Corcoran Bypass Alternative would then transition back to the BNSF Alternative. The Preferred Alternative would follow the BNSF Alternative in a southeasterly direction through Tulare County until transitioning to the Allensworth Bypass Alternative at Avenue 84. The alignment would pass west of the Allensworth Ecological Reserve and Colonel Allensworth State Historic Park and then transition to the BNSF Alternative-Through Wasco-Shafter in the vicinity of Taussig Avenue in Kern County. The alignment would continue through Kern County until Hageman Road where the Preferred Alternative would transition to the Bakersfield Hybrid Alternative to the Bakersfield Hybrid Station and its terminus at Oswell Street.

Chapter 7 of the Fresno to Bakersfield Section Final Project EIR/EIS also describes the Downtown Fresno Station, the Kings/Tulare Regional Station–East Alternative, and the Bakersfield Hybrid Station Alternative as the preferred alternatives, as shown in Figures 3 through 5.

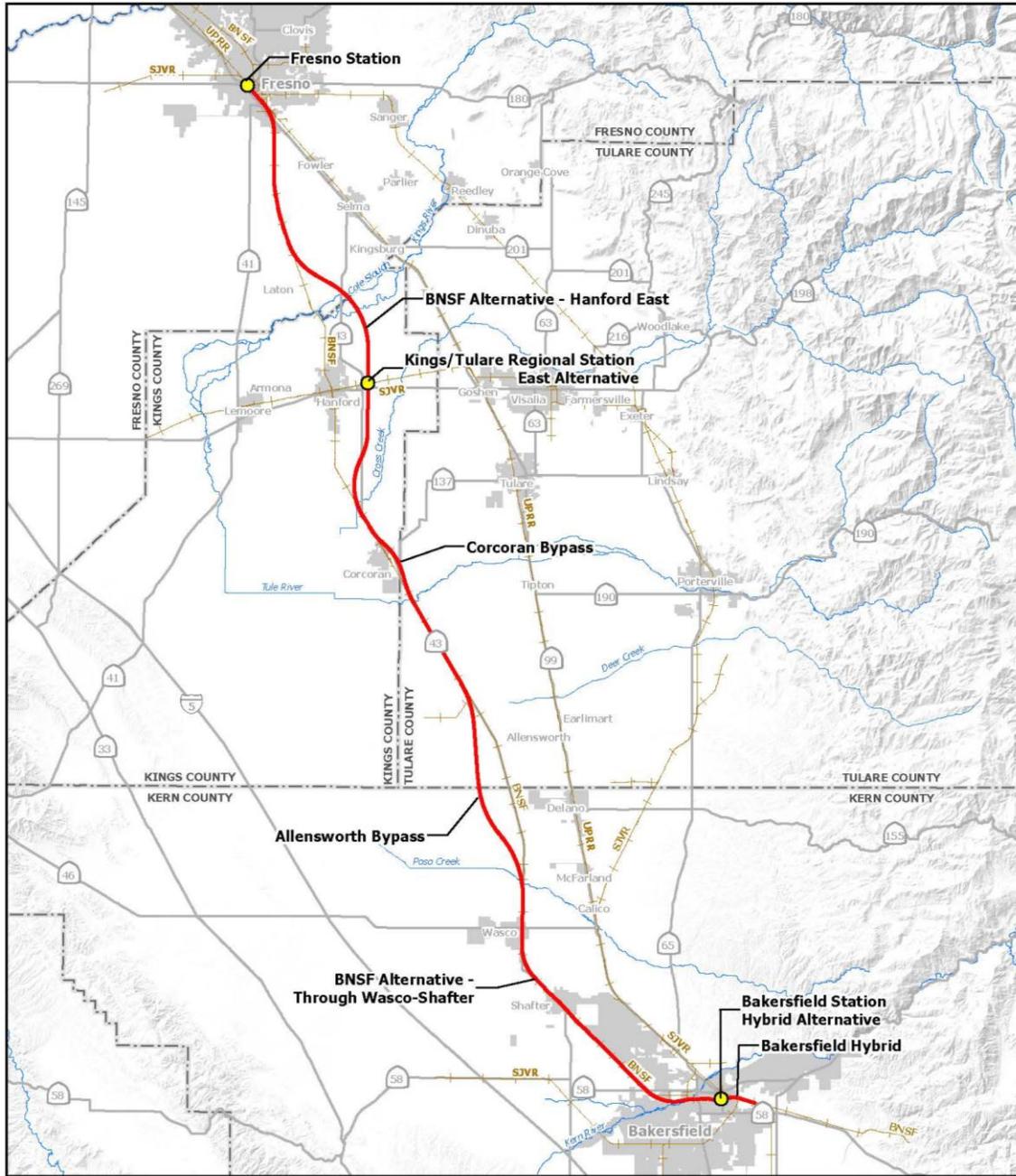
The Preferred Alternative does not include a preferred heavy maintenance facility (HMF) site. The Authority, along with the Federal Railroad Administration, anticipate considering the HMF sites evaluated in the Merced to Fresno Final EIR/EIS along with the five HMF sites evaluated in the Fresno to Bakersfield Final EIR/EIS prior to making a determination on one or more preferred sites, and prior to making a final HMF decision. The impacts of an HMF are therefore not addressed further in these findings.

2.1.2 Description of the Portion of the Preferred Alternative to Be Approved and the Portion Reserved for a Future Decision

As shown in Figure 6, the portion of the Preferred Alternative that the Authority will approve in conjunction with these findings extends from Monterrey Street in the City of Fresno to 7th Standard Road in Kern County. The northern limit of the approval in the City of Fresno does not include the Fresno Mariposa Station area, which the Authority previously approved in 2012 with Resolution HSRA# 12-20. The southern limit of the approval is at 7th Standard Road in Kern County. The Authority is intentionally reserving a decision on the alignment south of 7th Standard Road in Kern County and into the City of Bakersfield to a future proceeding.



Figure 1
 California HST System Initial Study Corridors Selected at Conclusion of
 Tier 1 EIR/EIS Processes



Source: URS/HMM/Arup JV, 2014

April 21, 2014

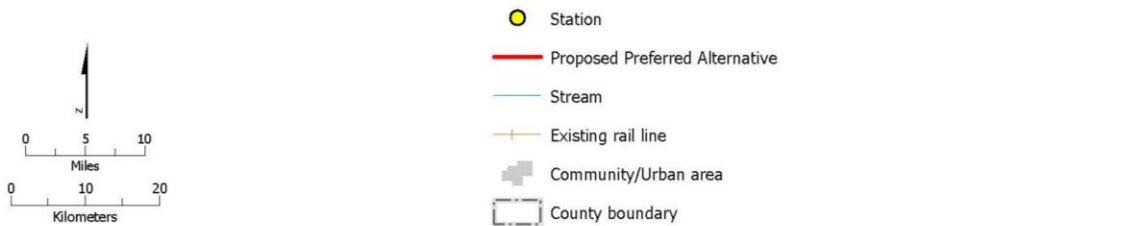
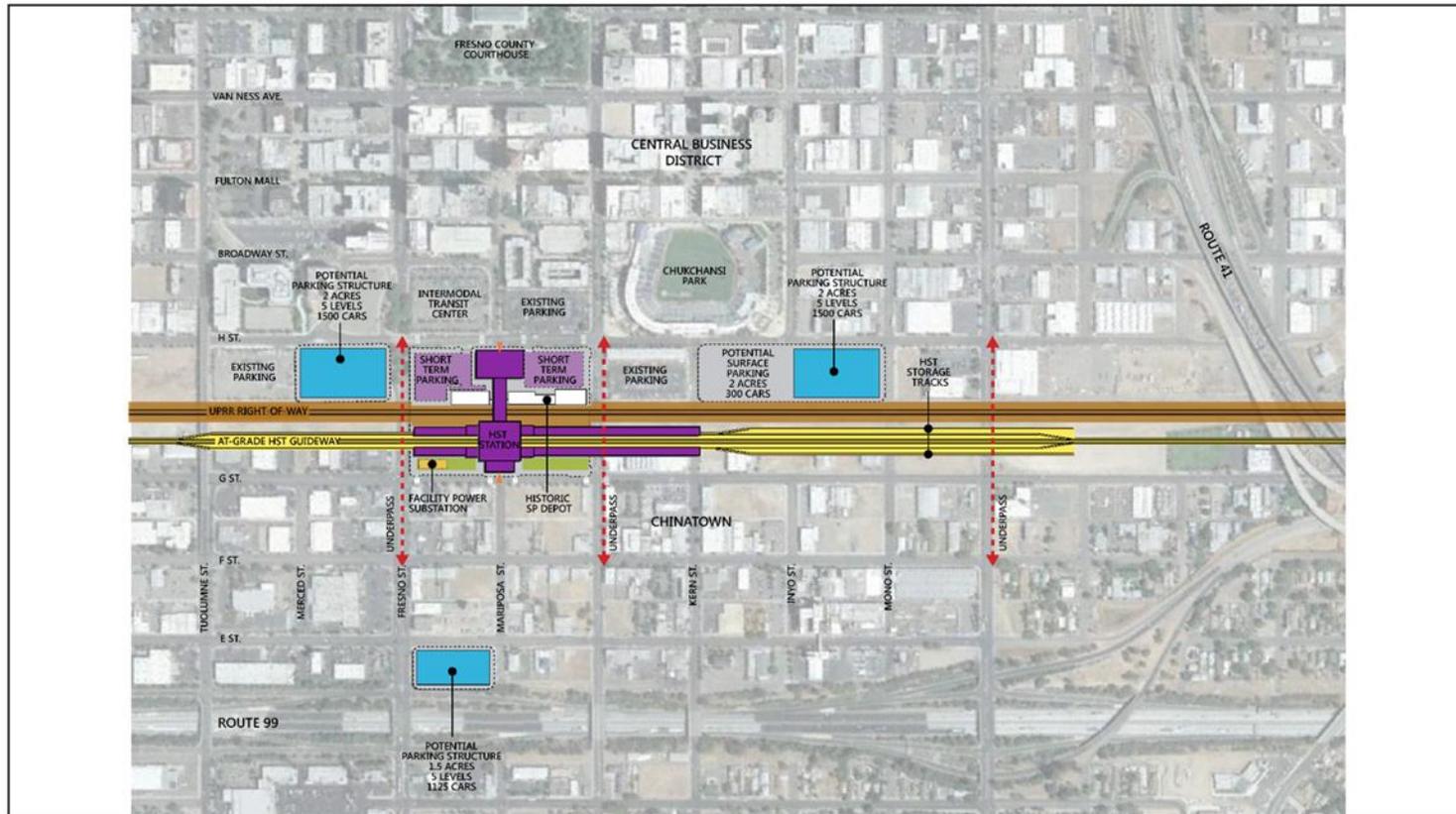


Figure 2
 Fresno to Bakersfield Section Preferred Alternative

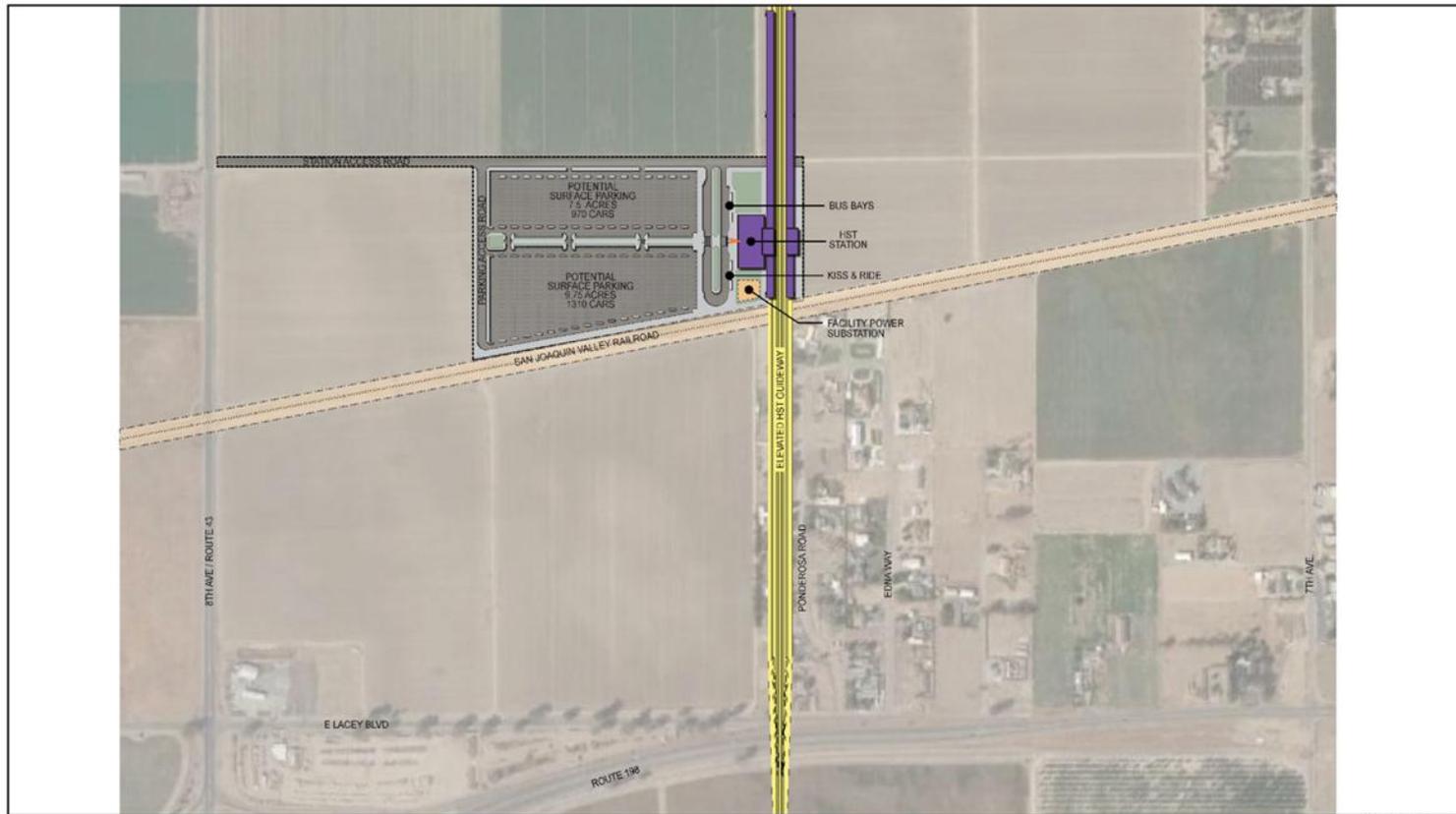


November 25, 2013

NOT TO SCALE

-  STATION ENTRANCE
-  KEY PEDESTRIAN LINKAGE
-  OPEN SPACE
-  STATION CAMPUS BOUNDARY
-  RIGHT-OF-WAY BOUNDARY
-  ROADWAY MODIFICATION

Figure 3
 Fresno Station Alternative

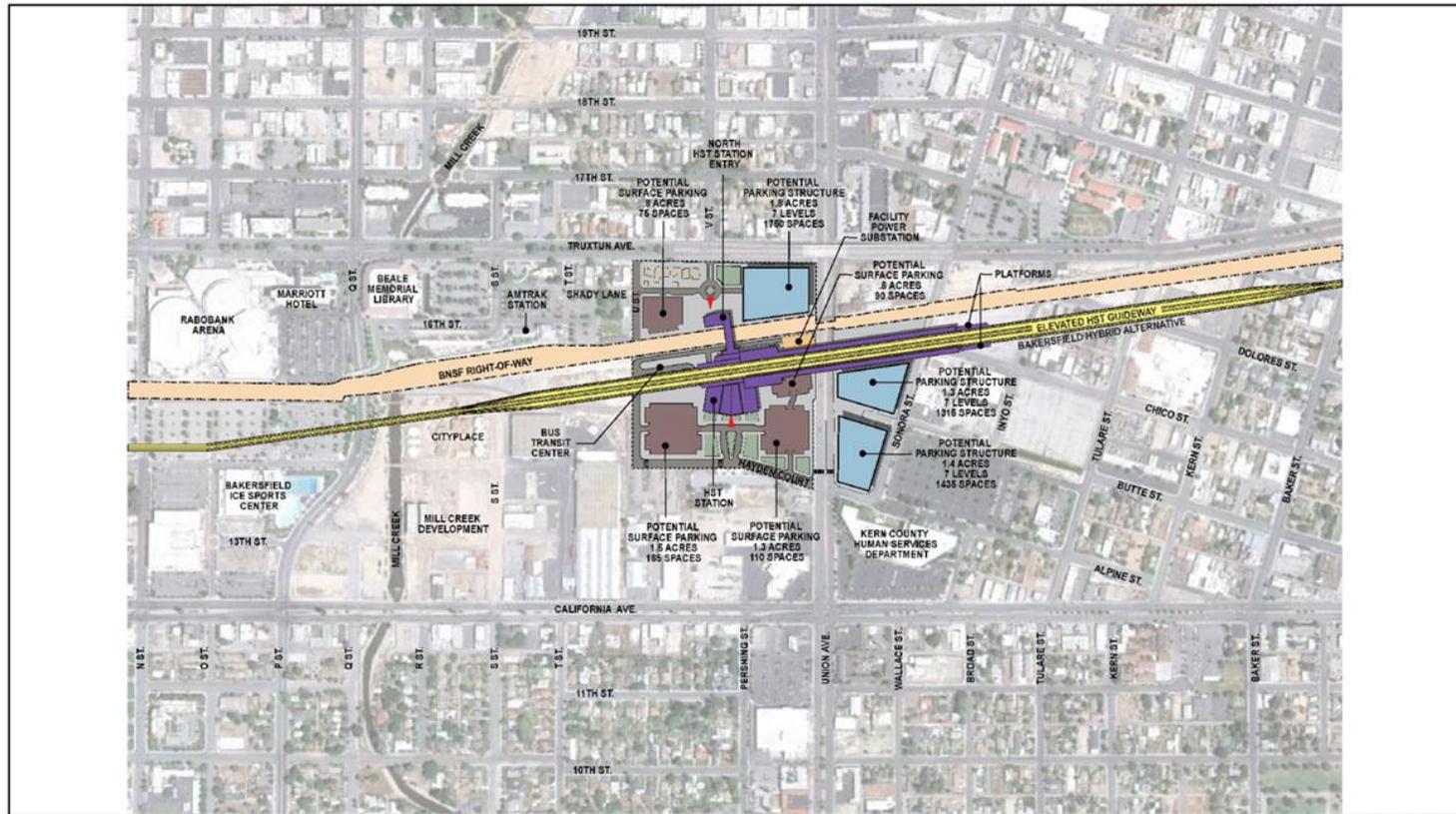


November 20, 2013

↑
N
NOT TO SCALE

-  STATION ENTRANCE
-  KEY PEDESTRIAN LINKAGE
-  OPEN SPACE
-  STATION CAMPUS BOUNDARY
-  RIGHT-OF-WAY BOUNDARY
-  ROADWAY MODIFICATION

Figure 4
 Kings/Tulare Regional Station–East Preferred Alternative

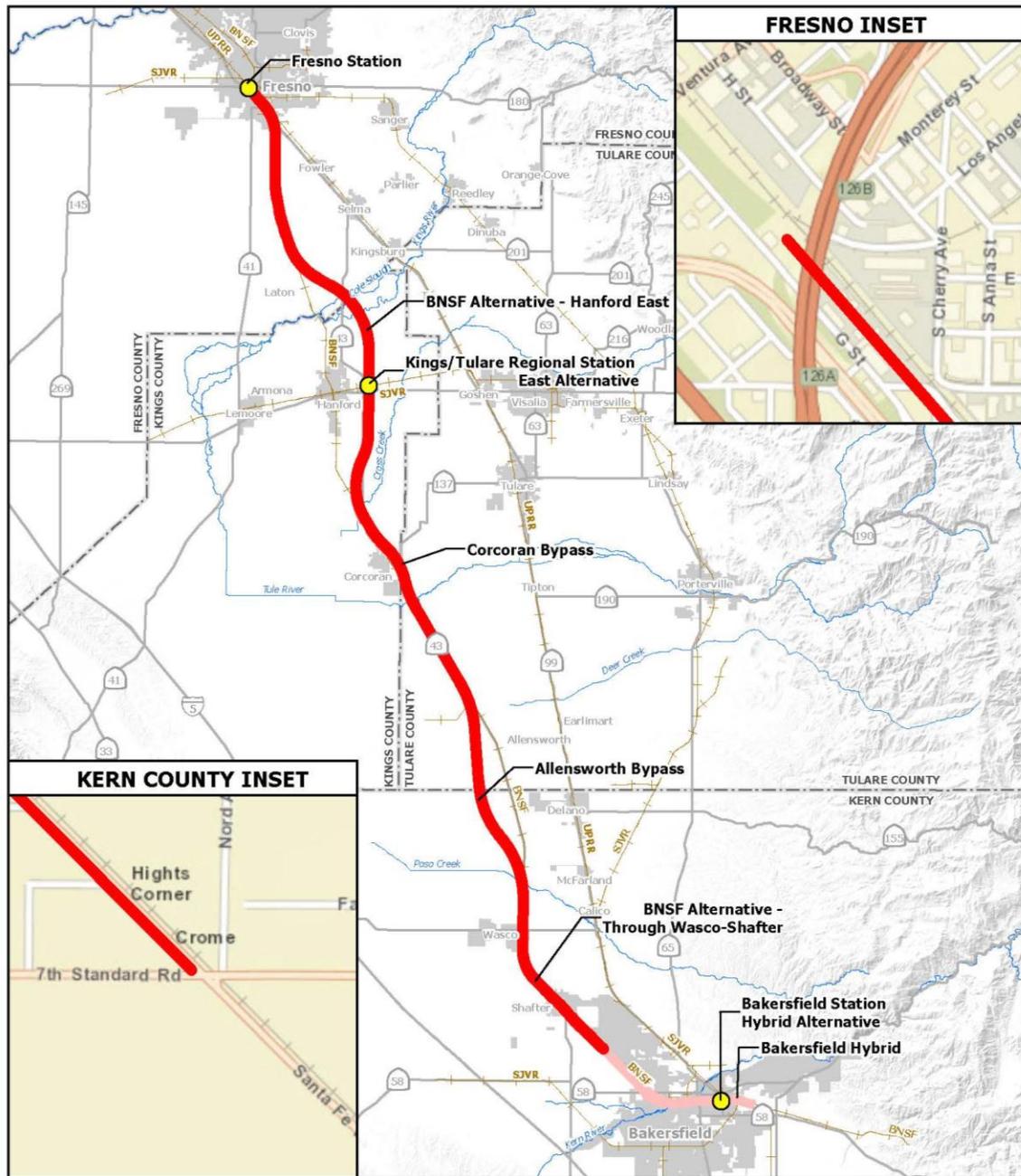


November 20, 2013

NOT TO SCALE

-  STATION ENTRANCE
-  KEY PEDESTRIAN LINKAGE
-  OPEN SPACE
-  STATION CAMPUS BOUNDARY
-  RIGHT-OF-WAY BOUNDARY
-  ROADWAY MODIFICATION

Figure 5
 Bakersfield Station—Hybrid Preferred Alternative



Source: URS/HMM/Arup JV, 2014

April 24, 2014

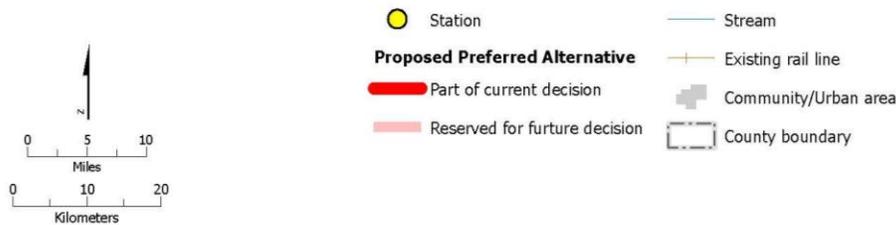


Figure 6
 Portion of the Preferred Alternative to Be Approved

2.1.3 General Description of the HST System Infrastructure in the Fresno to Bakersfield Section

Chapter 2 of the Fresno to Bakersfield Section Final Project EIR/EIS describes the general components of HST System infrastructure that are part of, and included in, this Fresno to Bakersfield Section.

System Design Performance, Safety, and Security: The HST would be a fully grade-separated and access-controlled guideway with intrusion-detection and monitoring systems. All aspects of the HST System will conform to federal requirements regarding transportation security and safety.

Train Vehicles: Train vehicles, although not selected as part of this project, are anticipated to be an electric multiple unit (EMU) concept with a computer-based automatic train-control system.

Stations: Stations include station platforms and trackway, arrival and departure facilities, and parking. Three stations are proposed for the Fresno to Bakersfield Section, one in the city of Fresno, the Kings/Tulare Regional station in the Hanford/Visalia/Tulare area, and one in the city of Bakersfield.

Track: The HST track would travel from Fresno to Bakersfield, mostly along existing transportation corridors, as depicted in Chapter 2. The track, or guideway, includes multiple different vertical profiles, as described in Chapter 2.

Grade Separations: The HST would be fully grade-separated from all crossing traffic through roadway overcrossings or undercrossings, or through elevation of the HST.

Traction Power Distribution: The Fresno to Bakersfield Section includes a traction power distribution system allowing trains to draw electric power from a catenary system fed through an overhead contact system. The catenary system consists of a series of mast poles with contact wires suspended from the mast poles. The catenary system will be connected to traction power substations spaced at approximately 30-mile intervals. Switching and paralleling stations will be required at approximately 15-mile intervals, at the midpoint between the traction power substations. Signaling and train-control elements include small huts within the right-of-way that house signal relay and microprocessor components and related equipment.

Track Structure: HST track would be constructed with ballast and ties, with continuous welded rail, for all at-grade sections. Slab construction would be used for elevated structures exceeding 1,000 feet in length where operating speeds are planned for 220 mph.

Maintenance Facilities: A maintenance-of-way facility would provide for equipment, materials, and replacement parts storage, and support quarters and staging areas for HST System maintenance personnel. A heavy-vehicle maintenance and layover facility is also under consideration for the Fresno to Bakersfield Section, but is not proposed for final approval at this time.

2.1.4 Project Design Features

The Fresno to Bakersfield project description incorporates many design features and best management practices (BMPs) that are identified in the Final Project EIR/EIS and included in detail in the technical reports. As a result of applying these design features and BMPs as part of the project itself, the project will avoid significant impacts in several resource areas, including electromagnetic fields and electromagnetic interference (EMI/EMF), hydrology and water resources, geology and soils, and hazardous materials and wastes. In addition, the regulatory

requirements for many activities provide additional assurance that significant impacts to the environment will not occur.

The applicable regulatory requirements and project design features that are considered a part of the project are described for the following issue areas in more detail in the corresponding chapters of the Final Project EIR/EIS and are also listed in Attachment A:

- Transportation – Sections 3.2.2 and 3.2.6.
- Air Quality and Global Climate Change – Sections 3.3.2 and 3.3.8.
- Noise and Vibration – Sections 3.4.2 and 3.4.6.
- Electromagnetic Fields and Electromagnetic Interference – Sections 3.5.2 and 3.5.6.
- Biological Resources and Wetlands – Sections 3.7.2 and 3.7.6.
- Hydrology and Water Resources – Sections 3.8.2 and 3.8.6.
- Geology and Soils – Sections 3.9.2 and 3.9.6.
- Hazardous Materials and Wastes – Sections 3.10.2 and 3.10.6.
- Safety and Security – Sections 3.11.2 and 3.11.6.
- Socioeconomics, Communities, and Environmental Justice – Sections 3.12.2 and 3.12.6.
- Station Planning, Land Use, and Development – Sections 3.13.2 and 3.13.6.
- Agricultural Lands – Sections 3.14.2 and 3.14.6.
- Parks, Recreation, and Open Space – Sections 3.15.2 and 3.15.6.
- Aesthetics and Visual Resources – Sections 3.16.2 and 3.16.6.
- Cultural and Paleontological Resources – Section 3.17.2.
- Regional Growth – Section 3.18.2.
- Cumulative Impacts – Section 3.19.2.

These project design features are an enforceable component of the project description and their implementation will be monitored and reported on in conjunction with project monitoring.

3.0 Findings on Specific Impacts and Mitigation Measures

The environmental effects of the Preferred Alternative and station locations for the entire Fresno to Bakersfield HST section that would be potentially significant are described in Chapter 3 of Volume 1 of the Final Project EIR/EIS. These impacts are set forth and summarized below for the Preferred Alternative north of 7th Standard Road, along with mitigation measures the Authority adopts, that will avoid or substantially lessen those potentially significant or significant impacts. The impact and mitigation measure findings below depend upon and therefore incorporate by reference the full analysis and conclusions contained within the Final Project EIR/EIS.

Also set forth in these findings are those impacts that the Authority finds cannot with certainty be avoided or reduced to a less-than-significant level even with the adoption of all feasible mitigation measures proposed in the Final Project EIR/EIS. In adopting these findings and mitigation measures, the Authority also adopts a Statement of Overriding Considerations. The Statement of Overriding Considerations describes the economic, social, and other benefits of the Preferred Alternative that will render these significant unavoidable environmental impacts acceptable.

The Authority is not required to make findings or adopt mitigation measures or policies as part of this decision for impacts that are less-than-significant or beneficial. The resource areas that include one or more less-than-significant impacts without mitigation, or beneficial impacts, include:

- Transportation
- Air Quality and Global Climate Change
- Noise and Vibration
- Electromagnetic Fields and Electromagnetic Interference
- Public Utilities and Energy
- Biological Resources and Wetlands
- Hydrology and Water Resources
- Geology, Soils, and Seismicity
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics, Communities, and Environmental Justice
- Station Planning, Land Use, and Development
- Agricultural Lands
- Parks, Recreation, and Open Space
- Aesthetics and Visual Resources
- Cultural and Paleontological Resources
- Cumulative Impacts

3.1 Transportation (Section 3.2 in the Final EIR/EIS)

As described in the Final EIR/EIS (Section 3.2.5), transportation impacts of the HST construction and station construction period (*i.e.* they will end when construction ends) will be less than significant (Final EIR/EIS, pp. 3.2-87 through 3.2-92, Impacts TR #1 through TR #9). This conclusion is supported, in part, by the Project Design Features that the Authority has incorporated into the Project, consistent with and in furtherance of the Statewide Program EIR/EIS commitments. (See Attachment A; see also Final EIR/EIS, Section 3.2.6, Project Design Features.) In adopting the resolution of approval of the project, the Authority confirms that the Design Features identified in Attachment A are part of the project.

For operational impacts (*i.e.*, impacts that are permanent due to re-direction of existing traffic because of permanent network road changes required by the alignment construction and impacts

that are permanent due to traffic generated at HST stations from their operation for HST), all impacts will be reduced to less than significant levels with the implementation of mitigation.

3.1.1 TR IMPACT #12 - Loss of Property Access as a Result of Road Closures

The Preferred Alternative north of 7th Standard Road would result in changes to the roadway and highway network between Fresno and 7th Standard Road near the Kern County line. The changes could include permanent limitations/reductions in property access that property owners/users currently have. Because of these potential property access issues (i.e., potential to result in lack of property access), the road closure effects on the loss of property access would have a significant impact.

TR-MM#1: Access Maintenance for Property Owners. If a proposed permanent road closure restricts current access to a property, the Authority will provide alternative access via connections to existing roadways. If adjacent road access is not available, the Authority will prepare new road connections, if feasible. Alternative access shall maintain the viability of the property use as it was used prior to the initiation of HST project construction. If alternative road access is not feasible for a permanent loss of property access, the property will be acquired by the Authority.

This mitigation measure would be effective, given the listed approaches available to address all potential scenarios encountered. Impacts associated with permanent road closures will be reduced to a less-than-significant impact with Mitigation Measure TR MM#1.

Implementation of Mitigation Measure TR-MM#1 could result in secondary effects. If the project requires the replacement of property access due to a permanent loss from the project, mitigation may result in impacts on the physical environment. Those impacts would include emissions and fugitive dust from construction equipment, construction-related noise, construction-related road closures or traffic delays and impacts on biological and cultural resources that may be present on the site of the new property access route. Any new or expanded roadways would be designed and constructed to be consistent with local land use plans if feasible and with the avoidance and minimization measures and construction period mitigation measures discussed in Section 3.2, Transportation; Section 3.3, Air Quality and Global Climate Change; Section 3.4, Noise and Vibration; Section 3.7, Biological Resources; and Section 3.17, Cultural and Paleontological Resources. For this reason, it is expected that the impacts of mitigation would be less than significant.

If the only need for mitigation is the purchasing of the property by the Authority, this mitigation measure would result in no physical impacts except potential impacts if the property use and facilities change as a result of the lack of access. Such changes and potential impacts are too speculative to analyze at this point.

The Authority finds that mitigation measures have been required in the project that will mitigate or avoid the significant impact related to loss of property access as a result of road closures. The Authority further finds that mitigation measures have been required in the project that will mitigate or avoid the significant secondary effects of implementation of Mitigation Measure TR-MM-#1.

3.1.2 TR IMPACT #13 – HST Station Area (a) Roadway Segment and (b) Intersection Impacts

For traffic congestion operational impacts¹ (*i.e.*, impacts that are permanent due to re-direction of existing traffic because of network road changes required by the alignment construction and impacts that are permanent due to traffic generated at HST stations from their operation for HST), as described in Section 3.2.3 of the Final EIR/EIS, the traffic analysis was performed using a dual baseline approach to comply with recent court requirements. The dual approach compares project traffic to existing traffic (Existing Plus Project), and compares project traffic to traffic modeled to be present in the “background” in 2035 (based on regional growth without HST) (Future [2035] Plus Project). The Final EIR/EIS set forth mitigation measures for both scenarios, but mitigation for all impacts under both scenarios is not required (see Final EIR/S pg. 3.2-124). These are simply two different analytical ways of evaluating the same potential impact.

For a project like the HST project that will take years from alignment construction start to full HST station operation, the dual baseline analysis framework is useful. By combining the analytics of the two approaches (see *Fresno to Bakersfield Section: Transportation Analysis Technical Report* (Authority and FRA 2014) and *Fresno to Bakersfield: Transportation Mitigation Methodology Memorandum* [URS/HMM/Arup Joint Venture, April, 2014]) incorporated herein by reference), one can distinguish traffic impacts that could occur (a) in the near term due to alignment construction only (which can create impacts due to permanent re-direction of existing traffic due to permanent re-configuration of the existing street network) from (b) impacts that will not occur until the future due to background cumulative traffic growth coupled with HST station traffic from (c) impacts that might occur at the same intersection at both points in time. With these distinctions, mitigation measures can be selected from the appropriate baseline scenario and assigned to each affected intersection and segment along with the required mitigation timing based on when the impact will occur. Mitigation for (a) impacts described above would be based on the Existing Plus Project baseline and would be required concurrent with alignment construction. Mitigation for (b) impacts described above would be based on the Future [2035] Plus Project baseline and would be required prior to the associated station opening. Mitigation for (c) impacts described above would be based on the both baselines, and would be required concurrent with alignment construction (e.g., adding a signal) then again prior to the associated station opening (e.g., adding turn lanes to the now-signalized intersection). This is detailed in the tables that follow and also in the Mitigation Monitoring and Reporting Program (MMRP) that accompanies these findings.

The combining analytical effort mentioned in the preceding paragraph resolved and normalized an inherent limitation of the court-mandated dual baseline approach for a project like HSR that could cause near-term impacts from one part (alignment construction) and future impacts from another part (station operation). The inherent limitation of the existing-plus-project approach is that it assumes that the HST station (with all of its associated vehicle traffic) becomes fully operational at maximum ridership effectively overnight, when that event will not occur until 2035; it also ignores that background traffic will grow and the roadway network will change based on programmed and funded RTP projects. It therefore presents a hypothetical scenario. See Final EIR/EIS pages 3.2-6 to 3.2-7. The inherent limitation of the Future [2035]-plus-project approach

¹ SB 743 (2013), codified as relevant in CEQA at Public Resources Code section 21099(b)(2), requires the CEQA Guidelines to be amended (likely in 2014) to include alternative direction to the traditional LOS/delay metric for evaluating transportation impacts. “Upon certification of the guidelines..., automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment [under CEQA], except in locations specifically identified in the guidelines, if any.” Development of these Guidelines amendments is under way (see *Preliminary Evaluation of Alternative Methods of Transportation Analysis*, Governor’s Office of Planning and Research, Dec. 30, 2013). Because the Guidelines are not in effect yet, the Authority makes these findings related to LOS/delay but does not waive the benefit of SB 743 and the amended Guidelines once they become operative.

is that it can mask that portions of the HST project (i.e., alignment construction that will permanently re-direct existing traffic) would occur in the very near term which could cause traffic impacts. By combining the analytics of the two approaches (see *Fresno to Bakersfield: Transportation Mitigation Methodology Memorandum* (Joint/Venture, April, 2014)), the Authority resolved these inherent limitations. That effort involved additional sensitivity modeling, based on the existing dual-baseline information, to determine which intersections and segments would be impacted by construction of the alignment alone and which intersections and segments would be impacted by construction of the alignment *plus* HST station traffic. These findings and associated MMRP reflect the product of that work and require only the mitigation that is necessary to mitigate the actual impacts when they occur and when from which aspect of the project.

(a) HST STATION AREA ROADWAY SEGMENT IMPACTS

Roadway segment analysis of AM and PM peak hours used the traffic impact criteria described in Section 3.2.3 of the Final EIR/EIS. Roadway segment scenarios are evaluated and compared for Existing Conditions, Future No Project (year 2035), and Future with Project (year 2035). Because the significance criteria focuses on roadways that are predicted to operate at Level of Service (LOS) E and F under project conditions, or are already operating at LOS E and F under pre-project conditions, only the roadways that meet those criteria are listed. All other roadways are and would continue to operate at LOS D or better under project conditions, are not significantly impacted, do not require mitigation, and are not listed. All roadways evaluated are included in the Fresno to Bakersfield Section: Transportation Analysis Technical Report (Authority and FRA 2012) and the Fresno to Bakersfield Section: Station Traffic Reanalysis Memo (URS/HMM/Arup Joint Venture 2014a).

An impact is considered significant for roadway segments that result in an increase in the V/C ratio of 0.04 or more with project-related traffic if operating without project-related traffic at LOS E or F. An impact is also considered significant under CEQA if the addition of project-related traffic results in a reduction in LOS below LOS D. Because traffic at these roadway segments (set forth below) would experience an unacceptable increase in traffic under one of the two above criteria, the impact would be significant.

Fresno Station

The addition of the HST project-generated traffic to the Fresno Station would not result in any significant impacts to roadway segments under Existing Plus Project conditions. The addition of the HST project-generated traffic to the Fresno Station would impact five (5) roadway segments in the Future (2035) Plus Project conditions.

- Stanislaus Street between Van Ness Avenue and O Street.
- Fresno Street between P Street and M Street.
- Tulare Street between R Street and U Street.
- Stanislaus Street between M Street and N Street.
- Van Ness Avenue south of Tuolumne Street.

TR MM#8: Add New Lanes to Roadway. Add additional roadway lanes to improve LOS and intersection operation.

Impacts may occur as a result of implementing Mitigation Measure TR MM#8, the location of these Mitigation Measures are depicted in the Fresno to Bakersfield Section: Roadway Modification Feasibility Memo (URS/HMM/Arup Joint Venture 2014b). The development footprint

mitigation measures to be implemented were overlaid over the existing inventory of agricultural, biological, geological, historical and cultural, recreation, and public utility resources, and over the socioeconomic and hazardous material data used for analysis in this Fresno to Bakersfield Section EIR/EIS to ensure that the potential impacts have been adequately analyzed. No significant impacts were determined to occur as a result of the construction and implementation of the mitigation measures described below. Road widening may result in the loss of existing on-street parking and Class II bikeways; however, the HST Authority will coordinate with local jurisdictions to ensure minimum parking requirements are met and non-vehicle transportation routes are maintained. Therefore, the secondary impacts of Mitigation Measure TR-MM#8 are less than significant.

The Authority finds that Mitigation Measure TR-MM#8 has been required in the project. To the extent implementation of Mitigation Measure TR-MM#8 lies within the responsibility or jurisdiction of another public agency, the Authority finds that the measures required by Mitigation Measure TR-MM#8 have been, or can and should be, adopted by that other agency. Implementation of Mitigation Measure TR-MM #8 will reduce the project’s impacts associated with a reduction in roadway segment LOS to less than significant.

Table 3.1.2-1 presents the specific mitigation measures required for affected roadway segments located near the Downtown Fresno Station.

Table 3.1.2-1
 Mitigation Measures for Roadway Segment Impacts Near the Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended; implement prior to Fresno HST station opening
7 – Stanislaus Street, between R Street and Van Ness Avenue	TR MM#8: Add New Lanes to Roadway.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the roadway to provide one additional lane in each direction.
14– Fresno Street, between P Street and M Street	TR MM#8: Add New Lanes to Roadway.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the roadway to provide one additional lane in each direction.
21 – Tulare Street, between R Street and U Street	TR MM#8: Add New Lanes to Roadway.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the roadway to provide one additional lane in each direction.
56 – Stanislaus Street, between M Street and N Street	TR MM#8: Add New Lanes to Roadway.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the roadway to provide one additional lane in each direction.
58 – Van Ness Avenue, south of Tuolumne Street	TR MM#8: Add New Lanes to Roadway.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the roadway to provide one additional lane in each direction.

Kings/Tulare Regional Station–East

The Final EIR/EIS concluded that the addition of HST project generated traffic to the Kings/Tulare Regional Station–East would significantly impact seven (7) roadway segments under the Existing Plus Project Conditions.² However, these impacts are the result of operational impacts associated with vehicles driving to the station (not due to alignment construction) and therefore the impacts would not come about until the Kings/Tulare Regional Station–East is operational. (See discussion above, and *Fresno to Bakersfield: Transportation Mitigation Methodology Memorandum* [URS/HMM/Arup Joint Venture, April, 2014]) Because the station will not be operational until well into the future, it is not appropriate to base mitigation upon the Existing Plus Project Scenario (these impacts in fact are not impacts because they represent a hypothetical scenario, as noted above). No roadway segments impacts are projected to occur for the Kings Tulare Regional Station–East under the Future (2035) plus Project scenario. Therefore, no mitigation measures are required.

(b) HST STATION AREA INTERSECTION IMPACTS

An impact is considered a significant impact under CEQA if:

- For intersections (signalized and unsignalized), the addition of project related traffic results in a reduction in LOS below D;
- For signalized intersections that are projected to operate at LOS E or F under baseline conditions, the addition of project-related traffic increases average delay at an intersection by 4 seconds or more;
- For unsignalized intersections projected to operate at LOS E or F under baseline conditions, the addition of project-related traffic increases delay by 5 seconds or more (measured as average delay for all-way stop and for worst movement for a multi-way stop intersection), and if the intersection satisfies one or more traffic signal warrants⁵ for more than one hour of the day.

With the addition of the HST project-generated traffic and the addition of project-related roadway network infrastructure modifications, the study intersections set forth below would experience a decrease in operational functionality that could violate one of the criteria above.

The following mitigation measures for the significantly impacted intersections listed below would be effective by providing improvements to mitigate impacted signalized and unsignalized intersections by returning the intersection to LOS D (if the intersection was operating at LOS D or better pre-project) or to the pre-project condition (if the intersection was operating at LOS E or F pre-project). Impacts associated with reduction in signalized and unsignalized intersection LOS will be reduced to a less than significant impact with implementation of TR-MM#2 through TR-MM#7.

TR MM#2: Modify Signal Phasing. Modify traffic signal phasing sequence to improve operations and signalized intersection, in consultation with the appropriate jurisdiction to ensure the peak hour re-timing of the signal.

TR MM#3: Add Signal to Intersection to Improve LOS/Operation. Add traffic signals to affected non-signalized intersections surrounding proposed HST station locations to improve LOS

² Specifically: SR 198 between SR 198 ramps and 7th Avenue; SR 198 between 7th Avenue and 6th Avenue; SR 198 between 6th Avenue and 2nd Avenue; SR 198 between 2nd Avenue and Road 48; SR 198 between Road 48 and Road 56/17th Avenue; SR 198 between Road 56/17th Avenue and County Road 60; SR 198 between County Road 60 and County Road J/25/Road 68.

and intersection operation. Prior to the completion of roadway mitigation measure improvements, the Authority shall install a traffic signal at impacted intersections. The mitigation summary shown in Table 3.1.2-2 indicates any locations where this mitigation would be justified.

TR MM#4: Restripe Intersections. Restripe specific intersections surrounding proposed HST station locations to improve LOS and intersection operations. Prior to the completion of civil work, the Authority shall install a traffic signal. The mitigation summary shown in Table 3.1.2-2 indicates any locations where this mitigation would be justified.

TR MM#5: Revise Signal Cycle Length. Revise signal cycle length at specific intersections surrounding proposed HST station locations to improve LOS and intersection operations. Prior to the completion of civil work, the Authority shall coordinate with the appropriate jurisdiction to ensure the peak hour re-timing of the signal. The mitigation summary shown in Table 3.1.2-2 indicates any locations where this mitigation would be justified.

TR MM#6: Widen Approaches to Intersections. Widen approaches to improve LOS and intersection operation. Prior to the completion of civil work, the Authority shall construct improvements. The mitigation summary shown in Table 3.1.2-2 indicates any locations where this mitigation would be justified.

TR MM#7: Add Exclusive Turn Lanes to Intersections. Add exclusive turn lanes at specific intersections to improve LOS and intersection operations. Prior to the completion of civil work, the Authority shall construct improvements. The mitigation summary shown in Table 3.1.2-2 indicates any locations where this mitigation would be justified.

Mitigation Measures TR MM#2 to MM#5 generally would involve little to no physical disturbance that could cause any impacts. Modifying signal phasing and revising signal cycle length is done electronically to the existing signals. Restriping intersections generally involves just painting existing pavement. Adding signals to existing intersections generally would be done within the existing pavement or disturbed graded right-of-way. For these reasons, impacts from these mitigation measures would be less than significant,

Impacts may occur as a result of implementing Mitigation Measures TR MM#6 and TR MM#7; the location of these Mitigation Measures are depicted in the Fresno to Bakersfield Section: Roadway Modification Feasibility Memo (URS/HMM/Arup Joint Venture 2014b). The development footprint mitigation measures to be implemented were overlaid over the existing inventory of agricultural, biological, geological, historical and cultural, recreation, and public utility resources, and over the socioeconomic and hazardous material data used for analysis in this Fresno to Bakersfield Section EIR/EIS to ensure that the potential impacts have been adequately analyzed. No significant impacts were determined to occur as a result of the construction and implementation of the mitigation measures described below.

The Authority finds that Mitigation Measures TR-MM#2 through TR-MM#7 have been required in the project and that implementation of these mitigation measures will reduce the HST station area intersection impacts of the project to less than significant. To the extent that implementation of Mitigation Measure TR-MM#2 through TR-MM#7 lies within the responsibility or jurisdiction of another public agency, the Authority finds that such measures have been, or can and should be, adopted by that other agency. Implementation of Mitigation Measure TR-MM #2 through TR-MM#7 will reduce the project's impacts associated with a reduction in roadway segment LOS to less than significant.

Fresno Station

Reconfiguration of the Fresno-area road network caused by the alignment and the addition the HST project-generated traffic to the Fresno Station, as detailed below, would result in significant

impacts to Fresno intersections. As shown in Table 3.2-16 of the Final EIR/EIS, under Existing Plus Project scenario conditions, project traffic would significantly affect 13 intersections in the AM and/or PM³. Of these 13 intersections, seven were determined not to be impacted as a result of alignment construction (i.e., network changes due to alignment) and are only impacted when 2035 station and future traffic is added, so as explained above these seven intersection impact are hypothetical for this existing plus project scenario. Of the remaining six intersections, two were determined to be the result of alignment construction (i.e., network changes due to alignment) only and are not impacted when HST-station and future cumulative traffic is added; these intersections will be mitigated for based on the Existing Plus Project Conditions.⁴ The other four intersections are impacted as a result of alignment construction *and* also are impacted under the Future (2035) Plus Project scenario (i.e., network changes plus HST-station-generated traffic and cumulative traffic);⁵ these intersections will receive mitigation at the time of alignment construction based on the Existing Plus Project Conditions mitigation *and* also at the time of station opening based on Future (2035) Plus Project Conditions mitigation (in the case of two intersections,⁶ the existing plus project mitigation done with alignment construction also mitigates, in advance essentially, the future condition impacts). *Fresno to Bakersfield: Transportation Mitigation Methodology Memorandum* [URS/HMM/Arup Joint Venture, April, 2014]). All other impacted intersections in Fresno are impacted only in the future condition when HST station traffic and cumulative traffic are present and will be mitigated based on Future (2035) Plus Project Conditions mitigation. Table 3.1.2-2 presents mitigation measures for impacted intersections for the Fresno Station.

³ Specifically, the intersections of: Van Ness Avenue/SR 41 southbound ramp; SR 99 northbound ramps/Ventura Avenue; Divisadero St/SR 41 NB ramps/Tulare St; SR 99 southbound ramps/Fresno Street; Van Ness Avenue/Stanislaus Street; H Street/Divisadero Street; N. Blackstone Avenue/CA 180 westbound ramps; H Street/Ventura Street; Tuolumne Street/L Street; Stanislaus Street/N Street; W. Olive Avenue/SR 99 southbound ramps; W. Belmont Avenue/SR 99 southbound ramps; and W. Belmont Avenue/SR 99 northbound ramps. As explained above, this scenario is hypothetical

⁴ Specifically, the intersections of: Divisadero Street/SR 41 northbound ramps/Tulare Street and H Street/Divisadero Street. As explained above, analysis resolving and normalizing the two baseline scenarios (i.e., removing station-generated traffic from the existing plus project scenario) identified those intersections that would be impacted in the near-term by just alignment-caused network changes – a more realistic scenario.

⁵ Specifically, the intersections of: Van Ness Avenue/Stanislaus Street; N. Blackstone Avenue/CA 180 westbound ramps; H Street/Ventura Street; and Stanislaus St. N Street.

⁶ Specifically, the intersections of N. Blackstone Avenue/CA 180 westbound ramps and H Street/Ventura Street.

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
4 – Van Ness Ave/SR 41 SB Ramp	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install a traffic signal at the intersection prior to Fresno HST station opening.
6 – SR 99 NB Ramps/Ventura Ave	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install a traffic signal at the intersection prior to Fresno HST station opening.
7 – E St./Venture Avenue	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install a traffic signal at the intersection prior to Fresno HST station opening.
25 – H St./Tulare St.	TR MM#2: Modify Signal Phasing.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Re-time existing signal in the PM to 60 prior to Fresno HST station opening.
30 – U Street/Tulare Street	TR MM#6: Widen Approach to Intersections; TR MM#7 - Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install southbound left-turn lane. Restripe southbound shared through-/left lane to through-lane prior to Fresno HST station opening.
33-0 – Divisadero St/SR 41 NB Ramps/Tulare St.	TR MM#6: Widen Approaches to Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area	Widen the westbound approach to provide one exclusive left-turn lane, two through-lanes, and one exclusive right-turn lane at the intersection concurrent with alignment construction.

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
37 – SR 99 SB Ramps/Fresno St.	TR MM#6: Widen Approaches to Intersections; TR MM#7 - Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the eastbound approach to provide two exclusive through-lanes and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.
38 – SR 99 NB Ramps/Fresno St.	TR MM#4: Restripe Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Restripe westbound right-turn lane to a shared through-/right-turn lane prior to Fresno HST station opening.
42 – Van Ness Avenue/Fresno Street	TR MM#4: Restripe Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install southbound right lane, restripe shared southbound lane to southbound through-lane prior to Fresno HST station opening.
46 – Fresno St./Divisadero St.	TR MM#4: Restripe Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install westbound left-turn lane and restripe shared through-/left lane to through-lane prior to Fresno HST station opening.
52 – E Street/Stanislaus St.	TR MM#6: Widen Approaches to Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the eastbound approach to provide one exclusive left-turn lane, one exclusive through-lane, and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
53 – Broadway St. Stanislaus St.	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Widen the eastbound approach to provide one exclusive left-turn lane, one exclusive through lane, and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.</p>
54 – Van Ness/Avenue/Stanislaus St.	<p>TR MM#5: Revise Signal Cycle Length.</p> <p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area</p> <p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Re-time the existing signal in PM to 60 concurrent with alignment construction.</p> <p>Prior to Fresno HST station opening, widen the westbound approach to provide one exclusive left-turn lane, one exclusive through-lane, and one shared through-/right-turn lane at the intersection.</p>
55 – N. Blackstone Ave./Stanislaus St.	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Widen the westbound approach to provide one exclusive left-turn lane, one exclusive through lane, and one shared through-/right-turn lane at the intersection prior to Fresno HST station opening.</p>
63 – H St./Divisadero St.	<p>TR MM#5: Revise Signal Cycle Length</p>	<p>Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Re-time the existing signal in AM to 120 concurrent with alignment construction.</p>

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
74 – N. Blackstone Ave./E. Belmont Ave.	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Install eastbound right-turn lane. Restripe shared southbound through-/left-turn to left-turn lane. Restripe shared southbound through-right lane to through-lane. Install southbound right-turn lane prior to Fresno HST station opening.</p>
80 – N. Blackstone Ave./SR 180 westbound ramps	<p>TR MM#4: Restripe Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area</p> <p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Concurrent with alignment construction: (a) Restripe shared eastbound lane to eastbound through- and eastbound right-turn lane and (b) Restripe the eastbound approach to provide one exclusive left-turn lane and one shared left-turn/right-turn/through-lane at the intersection.</p>
84 – G St./Mono	<p>TR MM#3: Add Signal to Intersection to Improve LOS/Operation.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Signalize intersection prior to Fresno HST station opening.</p>

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
86 – H St/Ventura St.	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Signalize intersection concurrent with alignment construction.
90 – Broadway St./Santa Clara St.	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Signalize intersection prior to Fresno HST station opening.
92 – S. Van Ness Ave./E. California Ave.	TR MM#3: Add Signal to Intersection to Improve LOS/ Operation. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install a traffic signal at the intersection; also provide exclusive left-turn lanes in both northbound and southbound directions, and change phasing on the northbound left and southbound left to protected plus permissive prior to Fresno HST station opening.
96 – Golden State Blvd./E. Church Ave.	TR MM#2: Modify signal phasing. TR MM#6: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Provide an exclusive right-turn lane in the northbound direction, and change signal phasing on all approaches to provide a protected plus permissive left-turn phase prior to Fresno HST station opening.

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
101 – S. East Ave./Golden State Blvd.	TR MM#2: Modify signal phasing.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Increase cycle length in the PM Peak Hour prior to Fresno HST station opening.
102 – Golden State Blvd./E. Jensen Ave.	TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Provide an exclusive right-turn lane for both northbound and southbound approaches prior to Fresno HST station opening.
105 – Stanislaus St./ 99 SB Off	TR MM#6: Widen Approaches to Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the southbound approach to provide one shared left turn/throughlane and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.
106 – Stanislaus St/99 NB On	TR MM#6: Widen Approaches to Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the southbound approach to provide one shared left turn/throughlane and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.
111 – Stanislaus St./Fulton St.	TR MM#6: Widen Approaches to Intersections. TR MM#7: Add Exclusive Turn Lanes to Intersections.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Widen the southbound approach to provide one shared left turn/throughlane and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.

Table 3.1.2-2
 Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
115 – Stanislaus St./M St.	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Widen the southbound approach to provide one shared left- turn/throughlane, and one exclusive right-turn lane at the intersection prior to Fresno HST station opening.</p>
117 – Stanislaus St./N. St.	<p>TR MM#3: Add Signal to Intersection to Improve LOS/Operation.</p> <p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-39 Existing Plus Project Mitigation Measures – Fresno Station Area</p> <p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Concurrent with alignment construction, install a traffic signal at the intersection.</p> <p>Prior to station opening, widen the westbound approach to provide one exclusive left-turn lane, one exclusive through-lane, and one shared through-/right-turn lane at the intersection.</p>
124 – West Olive Ave./SR 99 SB Ramps	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Widen southbound approach to provide an exclusive left-turn lane prior to Fresno HST station opening.</p>
125 – West Olive Ave./SR 99 NB Ramps	<p>TR MM#6: Widen Approaches to Intersections.</p> <p>TR MM#7: Add Exclusive Turn Lanes to Intersections.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Widen northbound approach to provide an exclusive left-turn lane prior to Fresno HST station opening.</p>
129 – West Belmont Ave/SR 99 Southbound Ramps	<p>TR MM#3: Add Signal to Intersection to Improve LOS/Operation.</p>	<p>Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area</p>	<p>Install traffic signal at the intersection prior to Fresno HST station opening.</p>

Table 3.1.2-2

Mitigation Measures for Intersection Impacts Near the Downtown Fresno Station

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
130 – West Belmont Ave./SR 99 NB Ramps	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-40 Future (2035) Plus Project Mitigation Measures – Fresno Station Area	Install traffic signal at the intersection prior to Fresno HST station opening.

Kings/Tulare Regional Station—East

Although the Final EIR/EIS identified intersection impacts in the Kings/Tulare Regional Station—East vicinity, the *Fresno to Bakersfield: Transportation Mitigation Methodology Memorandum* (URS/HMM/Arup Joint Venture, April 2014) determined that no impacts to intersections within these station study areas would occur as a result of network changes due to the proposed HST alignment and related structures. Therefore, all mitigation measures are based on the Future (2035) Plus Project scenario, as shown in Table 3.1.2-3, below.

Table 3.1.2-3

Mitigation Measures for Intersection Impacts Near the Kings/Tulare Region Station—East

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
1 – Ninth Ave/SR 198	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.
3 – SR 43/SR 198 Eastbound Ramps	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.
4 – Seventh St/SR 198	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.

Table 3.1.2-3
 Mitigation Measures for Intersection Impacts Near the Kings/Tulare Region Station—East

Location Affected	Mitigation Measure(s)	Final EIR/EIS Table	Specific Actions Recommended
6 – Sixth St/SR 198	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.
7 – Second Ave./SR 198	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.
8 – SR 43/Lacey Blvd.	TR MM#3: Add Signal to Intersection to Improve LOS/Operation.	Table 3.2-42 (Future (2035) Plus Project Mitigation Measures – Kings/Tulare Regional Station—East Alternative	Install a traffic signal at the intersection prior to KT HST station opening.

3.2 Air Quality and Global Climate Change (Section 3.3 in the Final EIR/EIS)

Once operational, the HST will have a beneficial effect on air quality and greenhouse gas (GHG) emissions. (See Impacts AQ #10, AQ #11). Although construction of the project would result in air quality impacts, with implementation of the mitigation measures required for the project, each of these impacts would be reduced to less-than-significant levels. Further assuring that the project’s air quality and GHG impacts will not be significant are the Project Design Features that the Authority has incorporated into the project, consistent with and in furtherance of the Statewide EIR/EIS commitments. (See Attachment A; see also Final EIR/EIS, Section 3.2.8, Project Design Features.) In adopting the resolution of approval of the project, the Authority confirms that the Project Design Features set forth in Attachment A are part of the project.

3.2.1 AQ IMPACT #1 - Regional Impacts – Construction of the HST Would Exceed the CEQA Emissions Threshold for VOC, NOx, PM10, and PM2.5

Direct emissions from construction of the Preferred Alternative would exceed San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds for volatile organic compounds (VOCs), nitrogen oxide (NO_x), particulate matter smaller than or equal to 10 microns in diameter (PM₁₀),

and particulate matter smaller than or equal to 2.5 microns in diameter (PM_{2.5}) in some construction years. Specifically, VOC emission would exceed significance thresholds from 2014-2016 and NO_x emissions would exceed SJVAPCD thresholds from 2014-2018, and year 2021. PM₁₀ emissions would exceed SJVAPCD thresholds in years 2014-2017 and PM_{2.5} emissions would exceed SJVAPCD thresholds in 2015 and 2016. This is shown in Table 3.3-7 of the Final EIR/EIS based on calculation details supported by Appendix A of the Air Quality Technical Report (Authority and FRA 2014). This could cause violations of NO_x, ozone, PM₁₀, and PM_{2.5} air quality standards or contribute substantially to NO_x, ozone, PM₁₀, and PM_{2.5} existing or projected air quality violations. Construction emissions may also impede or obstruct implementation of the 8-hour SJVAPCD 2007 Ozone Plan, or the 2004 Extreme Ozone 1-hour Attainment Demonstration Plan, the 2007 PM₁₀ Maintenance Plan, and the 2012 PM_{2.5} Plan.

Exceeding or contributing to an exceedance of any air quality standard or contributing substantially to an existing or projected air quality violation is considered a significant impact. VOC, NO_x, PM₁₀, and PM_{2.5} emissions during construction would exceed SJVAPCD thresholds, in the years noted, and the project may violate an air quality standard and/or contribute substantially to an existing or projected air quality violation for VOC, NO_x, PM₁₀, and PM_{2.5} and therefore would be a significant impact.

AQ MM#1: Reduce Criteria Exhaust Emissions from Construction Equipment. This mitigation measure applies to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix for the current calendar year, as set forth in California Air Resources Board's (CARB's) OFFROAD 2011 database and no less than a 40% reduction compared to a tier 2 engine standard for NO_x emissions. The Authority will require the contractor to document efforts it undertook to locate newer equipment (such as, in order of priority, Tier 4, Tier 3, or Tier 2 equipment) and/or tailpipe retrofit equivalents. The Authority will require the contractor to provide documentation to the Authority of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required CARB or SJVAPCD operating permit will be made available at the time of mobilization of each piece of equipment. The Authority will require the contractor to keep a written record (supported by equipment hours meters where available) of equipment usage during project construction for each piece of equipment.

AQ MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment. This mitigation measure applies to all on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material-hauling trucks will consist of an average fleet mix of equipment model year 2010, or newer, but no less than the average fleet mix for the current calendar year as set forth in CARB's EMFAC 2011 database. The Authority will require the contractor will provide documentation of efforts to secure such a fleet mix. The Authority will require the contractor to keep a written record of equipment usage during project construction for each piece of equipment.

AQ MM#4: Offset Project Construction Emissions through an SJVAPCD Voluntary Emission Reduction Agreement (VERA). This mitigation measure would address AQ Impact #1 (Common Regional Air Quality Impacts During Construction) that would exceed the GC applicability and CEQA emissions thresholds for VOC and NO_x, and the CEQA emission thresholds for PM₁₀ and PM_{2.5}. The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero for all construction years the project's actual emissions from construction equipment and vehicle exhaust emissions of VOC, NO_x, PM₁₀, and PM_{2.5}. The agreement will provide funds for the district's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, with preference given to highly impacted communities, thus offsetting project-related impacts on air quality. Projects

funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase will be provided at the beginning of the construction phase if feasible. At a minimum, funding shall be provided so that mitigation/offsets will occur in the year of impact, or as otherwise permitted by 40 C.F.R. Part 93 Section 93.163.

Implementation of these mitigation measures is not expected to result in secondary impacts.

With onsite mitigation (i.e., AQ MM#1 and #2), VOC, NO_x, PM₁₀, and PM_{2.5} impacts would be reduced, but could remain significant. As stated in SJVAPCD 2012 Draft Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2012), purchase of offset emissions through a VERA with the SJVAPCD (mitigation measure AQ-MM#4) for these pollutants would reduce impacts to less than significant after mitigation.

The Authority finds that Mitigation Measures AQ-MM#1, AQ-MM#2, and AQ-MM#4 have been required in the project and that implementation of these mitigation measures will reduce the project's construction VOC, NO_x, PM₁₀, and PM_{2.5} impacts to less-than-significant levels.

3.2.2 AQ Impact #2 - Compliance with Air Quality Plans

Emissions from project construction would be temporary, occurring for 9 years, from April 2014 through June 2023. Based on the amount of construction to be completed, construction activities would involve heavy-duty construction equipment and have the potential to cause adverse air quality impacts.

VOC, NO_x, PM₁₀, and PM_{2.5} emissions would be greater than applicable significance thresholds, which would impede implementation of the 8-hour SJVAPCD 2007 Ozone Plan, the 2004 Extreme Ozone 1-hour Attainment Demonstration Plan,⁷ the 2007 PM₁₀ Maintenance Plan, and 2008 PM_{2.5} Plan. Therefore, this impact would be significant for VOC, NO_x, PM₁₀, and PM_{2.5} emissions.

AQ MM#1: Reduce Criteria Exhaust Emissions from Construction Equipment. Details regarding AQ-MM#1 are described above.

AQ MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment. Details regarding AQ-MM#2 are described above.

AQ MM#4: Offset Project Construction Emissions through an SJVAPCD VERA. Details regarding AQ-MM#4 are described above.

Implementation of these mitigation measures is not expected to result in secondary impacts.

With onsite mitigation (i.e., AQ-MM#1 and #2), VOC, NO_x, PM₁₀, and PM_{2.5} impacts would be reduced, but could remain significant. As stated in SJVAPCD 2012 Draft GAMAQI (SJVAPCD 2012, pp. 67-68) and consistent with strategies outlined for incentive based programs in the most recent PM_{2.5} and ozone plans (SJVAPCD 2007, 2012), purchase of offset emissions through a VERA with the SJVAPCD (mitigation measure AQ-MM#4) for these pollutants would reduce impacts to less than significant after mitigation.

⁷ The 1-hour ozone standard was revoked by the U.S. EPA effective June 15, 2005, for areas including the SJVAB. However, the U.S. EPA still approved the 2004 Extreme Ozone Attainment Plan for 1-hour ozone on March 8, 2010 (SJVAPCD 2010).

The Authority finds that Mitigation Measures AQ-MM #1, AQ-MM #2, and AQ-MM #4 have been required in the project and that implementation of these mitigation measures will reduce the project's construction VOC, NO_x, PM₁₀, and PM_{2.5} impacts to less-than-significant levels.

3.2.3 AQ Impact #3 - Regional Impacts – Material-Hauling Emissions Outside of San Joaquin Valley Air Basin (SJVAB)

Construction emissions included in the regional impacts analysis (Impact AQ #1 and 2) considered hauling emissions within the SJVAB. High-speed rail track bed would be constructed using ballast, sub-ballast, and concrete slabs. Sub-ballast and concrete slab would be available within the SJVAB; however, the ballast could potentially be transported from areas outside the SJVAB. An emissions evaluation was conducted for transporting ballast materials from outside the SJVAB to the border of the air basin. Five hauling scenarios from five quarries were analyzed: (1) all ballast transported by rail from Kaiser Eagle Mountain Quarry; (2) ballast transported by truck and rail from Napa Quarry, Lake Herman Quarry and San Rafael Quarry; (3) ballast transported by truck and rail from a mixture of the five quarries; (4) ballast transported by truck from Napa Quarry, Lake Herman Quarry, San Rafael Quarry, and Bangor Rock Quarry Site A; and (5) ballast transported by truck from Napa Quarry, Lake Herman Quarry, San Rafael Quarry, and Kaiser Eagle Mountain Quarry. Details of the evaluations are presented in Appendix G of the *Fresno to Bakersfield Section: Air Quality Technical Report* (Authority and FRA 2014).

Emissions would exceed the thresholds for NO_x for all scenarios in multiple air quality management districts (AQMDs) or air pollution control districts (APCDs), as follows: The material-hauling emissions outside the SJVAB could exceed NO_x threshold of the SCAQMD (includes both South Coast Air Basin and Salton Sea Air Basin) in all five scenarios, and the Bay Area AQMD's NO_x thresholds for two of the scenarios. The material hauling emissions could also exceed the Mojave Desert AQMD NO_x thresholds for two of the scenarios. Exceeding or contributing to an exceedance of the NO_x air quality standards applicable in those air basins, or contributing substantially to an existing or projected NO_x air quality violation in those other air basins would be considered a significant impact.

AQ-MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment. Details regarding AQ-MM#2 are described above.

AQ-MM#5: Purchase Offsets and Offsite Emission Mitigation for Emissions Associated with Hauling Ballast Material in Certain Air Districts.

This mitigation measure will apply if ballast material is hauled from quarries outside the SJVAB and the hauling activities result in the exceedance of the annual applicable General Conformity threshold(s) or local air basin CEQA threshold(s) for NO_x. To determine whether an exceedance will occur based on actual hauling activities, the Authority shall at the beginning of each calendar year or as soon as practicable thereafter to obtain the most up-to-date information, based on actual or projected contractor-specific information about hauling in the Mojave AQMD, South Coast AQMD and Bay Area AQMD, calculate for the next calendar year using the same methodology used in this EIR/EIS the expected NO_x emissions from hauling activities in those districts. If, based on that calculation, exceedance of the applicable NO_x threshold(s) is anticipated to occur in that next calendar year, the Authority will secure from the appropriate air district(s) or other appropriate source the production or generation of a sufficient quantity of NO_x offsets for that calendar year necessary to achieve conformity (in the case of exceedance of GC thresholds) and/or to result in net NO_x generation below the applicable CEQA threshold(s). At a minimum, sufficient mitigation/offsets will be secured so they are generated in the year of impact or as otherwise permitted by 40 C.F.R. Part 93 Section 93.163.

The Mojave Desert AQMD's emission bank has 2,061 tons of NO_x credits (Mojave Desert AQMD 2012); therefore, there should be enough NO_x credits to offset approximately 6 tons per year from this project in the Mojave Desert AQMD. The exact number of NO_x credits in the SCAQMD RECLAIM program is unknown, but 1,199 tons of NO_x credits were traded in 2011 and 235 tons of NO_x credits were traded in 2012 (SCAQMD 2012). Therefore, there should be enough available NO_x credits in the program to offset approximately 75 tons of NO_x per year from this project in the SCAQMD.

In the Bay Area AQMD, any material emissions above the district's significance threshold will be mitigated through an offsite emission mitigation program to achieve emission reduction due to material hauling in the Bay Area AQMD. Potential offsite mitigation programs include the Bay Area AQMD's Carl Moyer Memorial Air Quality Standards Attainment Program (CMP) or other air district emission reduction incentive programs. Depending on the final location selected to obtain ballast material, this would amount to a maximum of 3 tons of NO_x credits.

Implementation of these mitigation measures is not expected to result in secondary impacts. With onsite mitigation (i.e., AQ-MM#2), material hauling NO_x emission impacts would be reduced, but could remain significant. Purchase of offset NO_x emission credits through the Mojave Desert AQMD and SCAQMD as well as utilizing an offsite mitigation program in the Bay Area AQMD (i.e., AQ-MM#5) would reduce impacts to less than significant after mitigation.

The Authority finds that Mitigation Measures AQ-MM #2 and AQ-MM #5 have been required in the project and that implementation of these mitigation measures will reduce the project's potential regional air quality impact related to material hauling outside the SJVAB to less-than-significant levels.

3.2.4 AQ Impact #8 - Localized Air Quality Impacts from Concrete Batch Plants

The emissions generated from operation of concrete batch plants, as related to regional emissions impacts, were included in the calculations for Impacts #1 and 2.

Batch plant operation also could have localized/micro impacts. The concrete batch plants would be located along the alignment. According to Cal/EPA and CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Cal/EPA and CARB 2005), emission impacts at receptors would be greatly reduced by locating a facility 1,000 feet from sensitive receptors. The air dispersion modeling and health risk analysis for fugitive dust emissions and their associated TAC constituents indicated that excess cancer risks and non-cancer health impacts would not exceed the applicable thresholds, but emissions may contribute to further exacerbation of exceedances of PM₁₀ and PM_{2.5} standards for micro-scale (i.e., localized) dust impacts to health. After mitigation, emissions would not substantially contribute to further exceedances of PM₁₀ and PM_{2.5} standards (see AQ-MM#3) because modeling shows that a receptor outside of 1,000 feet from the batch plant would not be exposed to concentration levels that exceed these micro-scale thresholds.

AQ-MM#3: Reduce the Potential Impact of Concrete Batch Plants. Concrete batch plants will be sited at least 1,000 feet from sensitive receptors, including daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The concrete batch plant will utilize typical control measures to reduce the fugitive dust, such as water sprays, enclosures, hoods, curtains, shrouds, moveable and telescoping chutes, central dust collection systems and other suitable technology, to reduce emission to be equivalent to the U.S. EPA AP-42 controlled emission factors for concrete.

The control measures utilized at the batch plant may increase water usage and energy consumption, and may generate additional waste from consumables used by the control device. These impacts would be minor, however, and would be less than significant.

The Authority finds that Mitigation Measure AQ-MM#3 has been required in the project and that implementation of this mitigation measure will reduce the project's air quality impacts associated with the exposure of sensitive receptors to temporary substantial pollutant concentrations from the concrete batch plants required for project construction to less-than-significant levels.

3.3 Noise and Vibration (Section 3.4 in the Final EIR/EIS)

The Final EIR/EIS estimated the screening distances for construction noise impact using the Federal Transit Administration (FTA) construction impact noise methodology and criteria (See Table 3.4-1 in the Final EIR/EIS), and estimates of typical equipment noise for rail construction (See Table 3.4-12 in the Final EIR/EIS). The analysis assumed that construction noise reduces by 6 dB for each doubling of distance from the center of the site. These estimates suggest that the potential for construction noise impact would be minimal for commercial and industrial land use, with impact screening distances of 79 feet and 45 feet, respectively. For residential land use, the potential for temporary construction noise impact would be limited to locations within approximately 141 feet of the alignment. However, the potential for noise impact from nighttime construction could extend to residences as far as 446 feet.

The exposure of persons or generation of noise levels in excess of standards for a severe impact established by the FTA is considered a significant impact. The standards cover temporary/periodic increases in ambient noise levels above levels existing. For residences within 141 feet of the alignment during the day, or within 446 feet during nighttime, construction impacts would be a significant impact.

N&V-MM#1: Construction noise mitigation measures. During construction the contractor will monitor construction noise to verify compliance with the noise limits as shown in Table 3.4-1 of the Final EIR/EIS. The contractor would be given the flexibility to meet the FTA construction noise limits in the most efficient and cost-effective manner. This can be done by either prohibiting certain noise-generating activities during nighttime hours or providing additional noise control measures to meet the noise limits. A noise monitoring program will be developed to meet required noise limits, the following noise control mitigation measures will be implemented as necessary, for nighttime and daytime:

- Install a temporary construction site sound barrier near a noise source.
- Avoid nighttime construction in residential neighborhoods.
- Locate stationary construction equipment as far as possible from noise-sensitive sites.
- Re-route construction truck traffic along roadways that will cause the least disturbance to residents.
- During nighttime work, use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with spotters.
- Use low-noise emission equipment.
- Implement noise-deadening measures for truck loading and operations.
- Monitor and maintain equipment to meet noise limits.

- Line or cover storage bins, conveyors, and chutes with sound-deadening material.
- Use acoustic enclosures, shields, or shrouds for equipment and facilities.
- Use high-grade engine exhaust silencers and engine-casing sound insulation.
- Prohibit aboveground jackhammering and impact pile driving during nighttime hours.
- Minimize the use of generators to power equipment.
- Limit use of public address systems.
- Grade surface irregularities on construction sites.
- Use moveable sound barriers at the source of the construction activity.
- Limit or avoid certain noisy activities during nighttime hours.
- To mitigate noise related to pile driving, the use of an auger to install the piles instead of a pile driver would reduce noise levels substantially. If pile driving is necessary, limit the time of day that the activity can occur.
- CHSRA will establish and maintain in operation until completion of construction a toll-free "hotline" regarding the Section construction activities. CHSRA shall arrange for all incoming messages to be logged (with summaries of the contents of each message) and for a designated representative of CHSRA to respond to hotline messages within 24 hours (excluding weekends and holidays). CHSRA shall make a reasonable good faith effort to address all concerns and answer all questions, and shall include on the log its responses to all callers. CHSRA shall make a log of the in-coming messages and CHSRA's responsive actions publicly available on its website.

Secondary impacts from construction noise mitigation measures including impacts on existing visual quality and construction light and glare are discussed in Section 3.16 Aesthetics and Visual Resources of the Final EIR/EIS. None of the other mitigation measures would result in secondary impacts.

Noise impacts would occur during construction activities and would cease after construction is complete. The Authority finds that Mitigation Measure N&V-MM#1 has been required in the project and that implementation of this mitigation measure will reduce construction noise below the FTA construction noise limits; this impact would be reduced to a less-than-significant impact.

3.3.1 N&V IMPACT #2 - Construction Vibration During Pile Driving

The exposure of persons or generation of excessive ground-borne vibration or ground-borne noise levels above the levels in Table 3.4-2 of the Final EIR/EIS is considered a significant impact. There is a potential for severe vibration impacts with receivers present within vibration criterion-level contours (See Table 3.4-13 of the Final EIR/EIS) during construction associated with pile driving and therefore construction vibration impacts would be a significant impact.

N&V-MM#2: Construction vibration mitigation measures. Building damage from construction vibration is only anticipated from impact pile driving at very close distances to buildings. If piling is more than 25 to 50 feet from buildings, or if alternative methods such as push piling or augur piling can be used, damage from construction vibration is not expected to occur. Other sources of construction vibration do not generate high enough vibration levels for damage to occur. When a construction scenario has been established, preconstruction surveys would be conducted by the contractor at locations within 50 feet of piling to document the

existing condition of buildings in case damage is reported during or after construction. The Authority would arrange for the repair of damaged buildings or compensation would be paid by the Authority to the property owner.

Implementation of this mitigation measure is not expected to result in secondary impacts. Although vibration impacts would occur during construction activities, the construction activities are considered temporary as they would cease after completion.

The Authority finds that Mitigation Measure N&V-MM#2 has been required in the project and that implementation of this mitigation measure would reduce the project's construction vibration impacts to less-than-significant levels.

3.3.2 N&V IMPACT #3 - Noise Impacts from Project Operation to Sensitive Receptors

The Final EIR/EIS assessed noise impacts from operation of the HST on noise-sensitive land uses by comparing existing, measured noise levels with future noise levels predicted for the project. The future noise levels with HST were developed following the FRA Guidance manual, as described in Section 3.4 of the Final Project EIR/EIS and as further documented in the *Fresno to Bakersfield Section: Noise and Vibration Technical Report* (Authority and FRA 2014).

The exposure of persons or generation of noise levels in excess of standards for a severe impact established by the FRA for high-speed ground transportation and the FTA for transit projects (See Figure 3.4-3 of the Final EIR/EIS) is considered a significant impact. These standards cover both permanent and temporary/periodic increases in ambient noise levels in the project vicinity above levels existing without the project. In locations with sensitive receptors where train speeds and operations are high, severe noise impacts would be a significant impact. As shown in Table 3-4-14, Table 3.4-20, and Table 3.4-21 of the Final EIR/EIS, the Preferred Alternative north of 7th Standard Road would result in significant impacts from operations at approximately 1,583 noise sensitive receptors, prior to mitigation. This is a significant impact.

N&V-MM#3: Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines. To determine the appropriate mitigation measure for properties experiencing severe noise impacts, noise mitigation guidelines would be applied as follows. Consistent with the Noise Mitigation Guidelines included as Attachment B to these Findings:

- Prior to operation of the HST, the Authority will install sound barriers where they can achieve between 5 and 15 dB of noise reduction, depending on their height and location relative to the track. The primary requirements for an effective sound barrier are that the barrier must (1) be high enough and long enough to break the line-of-sight between the sound source and the receiver, (2) be of an impervious material with a minimum surface density of 4 pounds per square foot, and (3) not have any gaps or holes between the panels or at the bottom. Because many materials meet these requirements, aesthetics, durability, cost, and maintenance considerations usually determine the selection of materials for sound barriers (examples are shown in Figure 3.4-14 of the Final EIR/EIS). Depending on the situation, sound barriers can become visually intrusive. Typically, the sound barriers style is selected with input from the local jurisdiction to reduce the visual effect of barriers on adjacent lands uses. For example, sound barriers could be solid or transparent, and made of various colors, materials, and surface treatments.
- The minimum number of affected sites should be at least 10, and the length of a sound barrier should be at least 800 feet. The maximum sound barrier height would be 14 feet for at-grade sections; however, all sound barriers would be designed to be as low as possible to achieve a substantial noise reduction. Berm and berm/wall combinations are the preferred

types of sound barriers where space and other environmental constraints permit. On aerial structures, the maximum sound barrier height would also be 14 feet, but barrier material would be limited by engineering weight restrictions for barriers on the structure. Sound barriers on the aerial structure will still be designed to be as low as possible to achieve a substantial noise reduction. Sound barriers on both aerial structures and at-grade structures could consist of solid, semitransparent, or transparent materials.

- The Authority will work with the communities to identify how the use and height of sound barriers would be determined using jointly developed performance criteria. Other solutions may result in higher numbers of residual impacts than reported herein. Options may be to reduce the height of sound barriers and combine barriers with sound insulation or to accept higher noise thresholds than the FRA's current noise thresholds.

If sound barriers are not proposed or do not reduce sound levels to below a severe impact level, building sound insulation can be installed. Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction is a mitigation measure that can be provided when the use of sound barriers is not feasible in providing a reasonable level (5 to 7 dB) of noise reduction. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where sound barriers are not feasible or desirable and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dB) can often be achieved by adding an extra layer of glazing to windows, by sealing holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air conditioning so that windows do not need to be opened. Performance criteria would be established to balance existing noise events and ambient roadway noise conditions as factors for determining mitigation measures.

- If sound walls or sound installation is not effective, the Authority can acquire easements on properties severely affected by noise. Another option for mitigating noise impacts is for the Authority to acquire easements on residences likely to be impacted by HST operations in which the homeowners would accept the future noise conditions. This approach is usually taken only in isolated cases where other mitigation options are infeasible, impractical, or too costly.

N&V-MM#4: Vehicle noise specification. In the procurement of an HST vehicle technology, the Authority will require bidders to meet the federal regulations (40 CFR Part 201.12/13) at the time of procurement for locomotives (currently a 90-dB-level standard), for cars operating at speeds of greater than 45 mph). Depending on the available technology, this could significantly reduce the number of impacts throughout the corridor.

N&V-MM#5: Special trackwork at crossovers and turnouts. Because the impacts of HST wheels over rail gaps at turnouts increases HST noise by approximately 6 dB over typical operations, turnouts can be a major source of noise impact. If the turnouts cannot be moved from sensitive areas, the project can use special types of trackwork that eliminate the gap.

N&V-MM# 6: Additional noise analysis following final design. If final design or final vehicle specifications result in changes to the assumptions underlying the noise analysis, reassess noise impacts and recommendations for mitigation, and provide supplemental environmental documentation, as required by law.

Secondary impacts from sound walls including visual intrusion and view blockage are discussed in Section 3.16 Aesthetics and Visual Resources of the Final EIR/EIS. None of the other mitigation measures would result in secondary impacts.

Not all impacted receivers may receive noise mitigation that would reduce their impacts below the levels shown in Figure 3.4-3 of the Final EIR/EIS. Further there is uncertainty about the

effectiveness of mitigation measures because of the important role that local jurisdictions and communities will play in determining the use of sound barriers. Therefore operational noise impacts from the HST are significant and unavoidable.

The Authority finds that Mitigation Measures N&V-MM#2, N&V-MM#3, N&V-MM#4, N&V-MM#5, and N&V-MM#6 have been required in the project and that they will mitigate or avoid some, but not all, of the project's significant noise impacts to sensitive noise receptors. The Authority finds that there are no other feasible mitigation measures or alternatives that could be adopted to reduce these remaining impacts to less-than-significant levels. The Authority finds that despite these otherwise significant and unavoidable impacts, specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.3.3 N&V IMPACT #6 –Traffic Noise

Thirteen major roadway segments in the area around the Kings/Tulare Regional Station – East were analyzed. An increase in traffic volume is expected on SR 43 between Grangeville Boulevard and SR 198. The increases in traffic volume would result in an increase in the future peak-hour noise level of 1 dBA Leq. This would result in five homes that face SR 43 being exposed to a peak-hour noise level in excess of 66 dBA Leq. This noise effect could be a significant impact.

N&V-MM#3: Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines. Details regarding N&V-MM#3 are described above.

N&V-MM# 6: Additional noise analysis following final design. Details regarding N&V-MM#6 are described above.

The Authority finds that Mitigation Measures N&V-MM#3 and N&V-MM#6 have been required in the project and that implementation of these mitigation measures will reduce traffic noise impacts associated with the Kings/Tulare Regional Station – East to less-than-significant levels.

3.4 Public Utilities and Energy (Section 3.6 in the Final EIR/EIS)

3.4.1 Project Design Features

With implementation of Mitigation Measure PU&E-MM#1, the Preferred Alternative north of 7th Standard Road would not result in a significant and unavoidable impact to public utilities or energy. This conclusion is supported, in part, by the Project Design Features that the Authority has incorporated into the Project, consistent with and in furtherance of the Statewide Program EIR/EIS commitments. (See Attachment A; see also Final EIR/EIS, Section 3.6.6.) The project design incorporates precautions to avoid existing utilities and design elements that minimize electricity consumption (e.g., using regenerative braking, and energy-saving equipment and facilities). Refer to Final EIR/EIS Section 3.8, Hydrology and Water Resources, for project design features for stormwater management and treatment. The Authority has also adopted a sustainability policy that includes the project design and construction requirements that avoid and minimize impacts. In adopting the resolution of approval of the project, the Authority confirms that the Project Design Features that are set forth in Attachment A are part of the project.

3.4.2 Impact PU&E # 5 –Conflicts with Existing Utilities

The construction for the Preferred Alternative north of 7th Standard Road footprint would not overlap with or displace Southern California Edison's Mascot electrical substation, which is located at the southwest corner of Grangeville Boulevard and 7½ Standard Avenue, east of the city of

Hanford. Adjacent lines leading into the substation are within the HST construction footprint, however, and may result in an indirect conflict with the substation. Without taking the appropriate measures to reduce this conflict, there is a potential for a significant impact.

PU&E-MM#1: Reconfigure or relocate substations and/or ancillary components. The Authority will relocate the adjacent electrical lines and related ancillary components of the existing Mascot substation prior to operation. The reconfiguration will be performed in coordination and cooperation with the utility owner, Southern California Edison, so that the relocation would not result in prolonged disruption of services.

Potential impacts of mitigation, which would consist of reconfiguring potentially affected electrical lines and related components connected to an electrical substation, include brief power service interruptions when disconnecting from existing infrastructure and connecting to replacement electrical service infrastructure. Because the Authority would coordinate with the affected utility company to avoid service interruptions, for the local context, the impact of the mitigation measure would not be significant.

The Authority finds that mitigation measure PU&E MM#1 has been required in the project and that implementation of this mitigation measure will reduce the project's indirect impact to the existing Mascot substation to less-than-significant levels.

3.5 Biological Resources and Wetlands (Section 3.7 of the Final EIR/EIS)

These findings address impacts associated with the portion of the Preferred Alternative being approved in conjunction with the findings, as discussed above in Section 2. For most impact areas (BIO Impact # 1, BIO Impact # 2, BIO Impact # 5, BIO Impact # 6, and BIO Impact # 8), the same special-status species and their associated habitats, and in the case of BIO Impact # 8 the same wildlife movement corridors, will be impacted as described for the entire Preferred Alternative as analyzed in the Final EIR/EIS and the mitigation measures are therefore the same for the portion of the Preferred Alternative as they would be for the entire Preferred Alternative. For BIO Impact # 3 and BIO Impact # 7, which address construction period and project period impacts on habitats of concern, including those in conservation areas, the findings acknowledge that the Bakersfield Hybrid Alternative portion of the Preferred Alternative would have specific impacts on the Metropolitan Bakersfield Habitat Conservation Plan (HCP), and the mitigation measures for these impacts are the same as those for other habitats of concern (e.g., special-status plant communities, jurisdictional waters, recovery area), but would apply in the Bakersfield area only upon a project approval in that area.

Chapter 3.7 of the Final EIR/EIS describes impacts as either construction period, which examines temporary impacts, or project period, which examines permanent impacts (Final EIR/EIS, p. 3.7-17). This categorization is carried through in these findings.

3.5.1 BIO IMPACT #1 – Construction Impacts on Special-Status Plant Species

Up to thirty-eight special-status plant species have the potential to occur in and immediately adjacent to the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by construction period activities. As indicated in Attachment D (highlighted version of Final EIR/EIS Appendix 3.7-A) to these Findings, the potential for occurrence is identified as no potential, low, moderate, or high, based on the presence of suitable habitat, the range of the species, and the proximity of known occurrences of the species.

In addition to the species that have been observed within the Special-Status Plant Study Area, special-status plant species have the potential to occur in areas of suitable habitat in parcels that have not been surveyed. These species include federally and/or state-listed species and species listed by the California Native Plant Society, all of which are considered rare in California (CEQA Guidelines, § 15380). If these species occur in the construction footprint, they would be subject to the same adverse effects as those described below for species known to occur.

Direct (BIO #1) Impacts during Construction Period

Direct impacts on special-status plant species and native plant species may occur as a result of construction crews removing vegetation within temporary impact areas, and from construction vehicles and personnel disturbing vegetation (i.e., trampling, covering, and crushing individual plants, populations, or suitable potential habitat for special-status plant species).

Indirect (BIO #1) Impacts during Construction Period

Indirect impacts on special-status plant species and native plant species would potentially include erosion, siltation, and runoff into natural and constructed watercourses; soil and water contamination from construction equipment leaks; construction dust affecting plants by reducing their photosynthetic capability (especially during flowering periods); and an increased risk of fire (e.g., construction equipment use and smoking by construction workers) in adjacent open spaces.

The direct and indirect impacts on special-status plant species and habitats suitable for special-status plant species during construction are considered a significant impact.

Implementation of the following mitigation measures will reduce BIO Impact #1 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings).

BIO-MM#1. Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist, and Project Biological Monitor(s).

BIO-MM#2. Regulatory Agency Access.

BIO-MM#3. Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM#4. Prepare and Implement a Weed Control Plan and Annual Vegetation Management Plan.

BIO-MM#5. Prepare and Implement a Biological Resources Management Plan.

BIO-MM#6. Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM#7. Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM#9. Equipment Staging Areas.

BIO-MM#11. Vehicle Traffic.

BIO-MM#13. Work Stoppage.

BIO-MM#14. "Take" Notification and Reporting.

BIO-MM#15. Post-Construction Compliance Reports.

BIO-MM#16. Conduct Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities.

BIO-MM#17. Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species.

BIO-MM#53. Compensate for Impacts on Special-Status Plant Species.

The Authority will avoid and minimize impacts to special-status plant species from construction activities where feasible. General avoidance/minimization measures will be implemented in order to track mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects to reduce impacts on special-status plant species (BIO-MM#1. Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist and Project Biological Monitor(s); BIO-MM#3. Prepare and Implement a Worker Environmental Awareness Program).

The measure BIO-MM#4 (Prepare and Implement a Weed Control Plan and Annual Vegetation Management Plan) will minimize or avoid the spread of noxious and invasive weeds during construction, and BIO-MM#6 (Prepare and Implement a Restoration and Revegetation Plan) will restore temporarily disturbed uplands following construction activities.

During final design, the Mitigation Manager, or its designee (Project Biologist, Regulatory Specialist (Waters), Project Botanist) will prepare and implement BIO-MM#5 (Prepare and Implement a Biological Resources Management Plan) which will help the long-term perpetuation of biological resources within the temporarily disturbed areas, as well as protect adjacent targeted habitats. The Project Biologist, Regulatory Specialist (Waters), and Project Botanist will also delineate Environmentally Sensitive Areas (ESAs) and Environmentally Restricted Areas (ERAs) (BIO-MM#7) prior to the start of ground-disturbing activities, including special-status plant populations to protect these areas from impacts during construction. Additional avoidance measures to be implemented prior to construction avoid impacts to special-status plant species (see BIO-MM#9 Equipment Staging Areas and BIO-MM#11 Vehicle Traffic). Agency personnel may visit the site to ensure compliance with avoidance/minimization measures (BIO-MM#2 Regulatory Agency Access). In the event of an accidental removal or injury to a federal or state-listed plant species, the Contractor's employees will be required to notify U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) and identify any corrective measures to aid in preventing future impacts (BIO-MM#14 "Take" Notification and Reporting). Post-construction compliance reports consistent with agency protocols to document compliance with these measures will be submitted at regular intervals (BIO-MM#15 Post-Construction Compliance Reports).

To avoid and minimize impacts on special-status plant species in areas of suitable habitat where floristic surveys could not be conducted, BIO-MM#16 (Conduct Protocol-Level Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities) would identify the locations of all special-status plant species in areas not previously surveyed. Based on the results, BIO-MM#17 (Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species) can be fully implemented throughout the project area to further avoid or minimize direct and indirect impacts to special-status plants.

Since avoidance, minimization (BIO-MM#16), rectification, or reduction (BIO-MM#17) of direct and indirect impacts will not alone reduce the significance of these impacts, mitigation will also be secured by the Authority through compensatory mitigation BIO-MM#53 (Compensate for Impacts on Special-Status Plant Species). In conjunction with final design and the permitting process, in compliance with the project's Biological Opinion, the Authority will mitigate at a 1:1 ratio at a USFWS-approved site.

By avoiding, minimizing, rectifying and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plant species will be reduced.

There would be no secondary impacts from these mitigation measures. By avoiding, minimizing and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plants species will be reduced. The Authority finds that the above listed mitigation measures have been required in the project and that implementation of these measures will substantially lessen the direct and indirect impacts to special-status plant species and their habits by reducing the impact to a less-than-significant level under CEQA.

3.5.2 BIO IMPACT #2 – Construction Impacts on Special-Status Wildlife Species

Wildlife habitat and land cover types in the footprint of the Preferred Alternative have the potential to support a variety of special-status wildlife species. Construction activities have the potential to disturb the life cycles of these special-status species. Up to fifty-four special-status wildlife species have the potential to occur in and near the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by construction period activities. As indicated in Attachment D to these Findings (highlighted version of Final EIR/EIS Appendix 3.7-A, Att. 2), the potential for occurrence is identified as no potential, low, moderate, or high. The presence of and potential for special-status wildlife species to occur in a particular habitat is linked to the physical characteristics of the landscape and the species' known geographic range.

Direct (BIO #2) Impacts during Construction Period

Direct impacts associated with the Preferred Alternative on special-status wildlife species (including invertebrates, amphibians, reptiles, fish, birds, and mammals) and native fauna will disturb suitable habitats (e.g., damage or removal of host plants, disturbance to confining hardpans, destruction, alteration, degradation, fill, or pollution of suitable habitat) that have potential to support special-status wildlife species. As a result of construction activities, the Preferred Alternative may result in adverse effects on special-status wildlife species through harassment, disturbance, injury, nest abandonment or death of individuals. These impacts may occur to all life stages (i.e., eggs, larvae, young, juveniles or adults).

Direct impact may occur as a result of direct removal of host plants, permanent conversion of occupied habitat to project infrastructure, direct strike during operation and maintenance, trampling or crushing.

Indirect (BIO #2) Impacts during Construction Period

Construction period indirect impacts associated with the Preferred Alternative on special-status wildlife species (including invertebrates, amphibians, reptiles, fish, birds, and mammals,) and native fauna may result from increased noise, light, and ground disturbance. These impacts may indirectly result in water quality degradation, hydrological modifications, habitat degradation (through soil compaction, or alteration of vegetation cover), introduce nonnative invasive (noxious) weeds, reduce in host plant vigor, and in some cases may result in mortality of individuals.

Specifically, the indirect impacts may result in reduced reproductive success, decreased survivorship of these species and their food, abandonment of refugia (e.g., burrows), temporary shifts in foraging patterns or territories (displacement), and increased mortality or predation. These impacts may occur to all life stages (i.e., eggs, larvae, young, juveniles or adults).

The direct and indirect impacts on special-status wildlife species and their suitable habitats during construction are considered a significant impact under CEQA.

Implementation of the following mitigation measures will reduce BIO Impact #2 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings).

BIO-MM#1. Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist and Project Biological Monitor(s).

BIO-MM#2. Regulatory Agency Access.

BIO-MM#3. Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM#5. Prepare and Implement a Biological Resources Management Plan.

BIO-MM#6. Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM#7. Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM#8. Wildlife Exclusion Fencing.

BIO-MM#9. Equipment Staging Areas.

BIO-MM#10. Mono-Filament Netting.

BIO-MM#11. Vehicle Traffic.

BIO-MM#12. Entrapment Prevention.

BIO-MM#13. Work Stoppage.

BIO-MM#14. "Take" Notification and Reporting.

BIO-MM#15. Post-Construction Compliance Reports.

AVR-MM#1b. Minimize Light Disturbance during Construction.

BIO-MM#18. Conduct Preconstruction Sampling and Assessment for Vernal Pool Fauna.

BIO-MM#19. Seasonal Vernal Pool Work Restriction.

BIO-MM#20. Implement and Monitor Vernal Pool Protection.

BIO-MM#21. Implement Conservation Guidelines for the Valley Elderberry Longhorn Beetle.

BIO-MM#22. Conduct Preconstruction Surveys for Special-Status Reptile and Amphibian Species.

BIO-MM#23. Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance, and Relocation.

BIO-MM#24. Conduct Protocol and Preconstruction Surveys for California Tiger Salamander.

BIO-MM#25. Implement Avoidance and Minimization Measures for California Tiger Salamander.

- BIO-MM#26.** Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard.
- BIO-MM#27.** Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard.
- BIO-MM#28.** Blunt-Nosed Leopard Lizard Avoidance.
- BIO-MM#29.** Conduct Preconstruction Surveys and Delineate Active Nest Exclusion Areas for Other Breeding Birds.
- BIO-MM#30.** Conduct Preconstruction Surveys and Monitoring for Raptors.
- BIO-MM#31.** Bird Protection.
- BIO-MM#32.** Conduct Preconstruction Surveys for Swainson’s Hawks.
- BIO-MM#33.** Swainson’s Hawk Nest Avoidance and Monitoring.
- BIO-MM#34.** Monitor Removal of Nest Trees for Swainson’s Hawks.
- BIO-MM#35.** Conduct Protocol Surveys for Burrowing Owls.
- BIO-MM#36.** Burrowing Owl Avoidance and Minimization.
- BIO-MM#37.** Conduct Preconstruction Surveys for Nelson’s Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.
- BIO-MM#38.** Implement Avoidance and Minimization Measures for Nelson’s Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.
- BIO-MM#39.** Implement Avoidance and Minimization Measures for Fresno Kangaroo Rat.
- BIO-MM#40.** Conduct Preconstruction Surveys for Special-Status Bat Species.
- BIO-MM#41.** Bat Avoidance and Relocation.
- BIO-MM#42.** Bat Exclusion and Deterrence.
- BIO-MM#43.** Conduct Preconstruction Surveys for American Badger and Ringtail.
- BIO-MM#44.** American Badger and Ringtail Avoidance.
- BIO-MM#45.** Conduct Preconstruction Surveys for San Joaquin Kit Fox.
- BIO-MM#46.** Minimize Impacts on San Joaquin Kit Fox.
- BIO-MM#49.** Monitor Construction Activities within Jurisdictional Waters.
- BIO-MM#54.** Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp.
- BIO-MM#55.** Implement Conservation Guidelines during project operation for Valley Elderberry Longhorn Beetle.
- BIO-MM#56.** Compensate for Impacts on California Tiger Salamander.
- BIO-MM#57.** Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson’s Antelope Squirrel.

BIO-MM#58. Compensate for Loss of Swainson's Hawk Nesting Trees.

BIO-MM#59. Compensate for Loss of Burrowing Owl Active Burrows and Habitat.

BIO-MM#60. Compensate for Destruction of San Joaquin Kit Fox Habitat.

BIO-MM#65. Offsite Habitat Restoration, Enhancement and Preservation.

Impacts to special-status wildlife species from construction activities will be avoided and minimized where feasible. The following general avoidance/minimization measures will be implemented in order to track mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects. Many of the mitigation measures described in BIO Impact #1 have the same or similar ability to reduce impacts to special-status wildlife species.

As such, they are not repeated here except for those measures that are unique to BIO Impact #2.

To minimize entanglement of special-status wildlife species, the erosion control materials will not include plastic mono-filament netting (BIO-MM#10 Mono-Filament Netting). Wildlife exclusion barriers will keep wildlife out of the construction work area as specified and designed through consultation with USFWS and/or CDFW (BIO-MM#8 Wildlife Exclusion Fencing). In areas that have the potential to entrap wildlife, entrapment prevention measures will be enacted (BIO-MM#12 Entrapment Prevention). These measures may include covering holes, providing escape ramps or covering culverts.

To further avoid impacts to special-status wildlife species, work will stop in the event a special-status wildlife species enters the construction footprint in an area where construction is occurring (BIO-MM#13 Work Stoppage). Work will be suspended until the individual leaves voluntarily or is relocated using USFWS- and/or CDFW-approved techniques or methods.

To minimize impacts from light during nighttime construction, lighting will be directed so that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage off-site (AVR-MM#1b Minimize Light Disturbance during Construction).

Qualified, agency-approved Biologists (where required, or as designated by the Project Biologist) will conduct preconstruction, protocol-level and focused surveys for special-status wildlife where suitable habitat is present within the construction footprint. Conducting protocol level surveys will aid in the avoidance and minimization of impacts to special-status wildlife species by identifying the locations where each species occurs and/or has the potential to occur in order to guide the avoidance and minimization mitigation measures and implement performance standards:

- BIO-MM#18. Conduct Preconstruction Sampling and Assessment for Vernal Pool Fauna;
- BIO-MM#21. Implement Conservation Guidelines for the Valley Elderberry Longhorn Beetle;
- BIO-MM#22. Conduct Preconstruction Surveys for Special-Status Reptile and Amphibian Species;
- BIO-MM#24. Conduct Protocol and Preconstruction Surveys for California Tiger Salamander;
- BIO-MM#26. Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard;
- BIO-MM#27. Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard;

- BIO-MM#29. Conduct Preconstruction Surveys and Delineate Active Nest Exclusion Areas for Other Breeding Birds;
- BIO-MM#32. Conduct Preconstruction Surveys for Swainson's Hawks;
- BIO-MM#30. Conduct Preconstruction Surveys and Monitoring for Raptors;
- BIO-MM#35. Conduct Protocol Surveys for Burrowing Owls;
- BIO-MM#37. Conduct Preconstruction Surveys for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse
- BIO-MM#40. Conduct Preconstruction Surveys for Special-Status Bat Species
- BIO-MM#43. Conduct Preconstruction Surveys for American Badger and Ringtail;
- BIO-MM#45. Conduct Preconstruction Surveys for San Joaquin Kit Fox.

The result of the surveys will identify areas where additional mitigation measures are required in order to avoid and minimize impacts on special-status wildlife species. The surveys will provide additional information that will be used to guide the placement of ESAs, ERAs, and wildlife exclusion fencing, the extent and location of construction buffers, focus monitoring efforts, and in some instance species relocation. As a result impacts on special-status species and their habitat will be avoided and minimized. These measures include BIO-MM#19 Seasonal Vernal Pool Work Restriction; BIO-MM#20 Implement and Monitor Vernal Pool Protection; BIO-MM#21 Implement Conservation Guidelines for the Valley Elderberry Longhorn Beetle; BIO-MM#23 Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance and Relocation; BIO-MM#25. Implement Avoidance and Minimization Measures for California Tiger Salamander; BIO-MM#28 Blunt-Nosed Leopard Lizard Avoidance; BIO-MM#33 Swainson's Hawk Nest Avoidance and Monitoring); BIO-MM#34 Monitor Removal of Nest Trees for Swainson's Hawk; BIO-MM#36. Burrowing Owl Avoidance and Minimization; BIO-MM#38 Implement Avoidance and Minimization Measures for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse; BIO-MM#39 Implement Avoidance and Minimization Measures for Fresno Kangaroo Rat; BIO-MM#41 Bat Avoidance and Relocation; BIO-MM#42 Bat Exclusion and Deterrence; BIO-MM#44 American Badger and Ringtail Avoidance; BIO-MM#46 Minimize Impacts on San Joaquin Kit Fox; and BIO-MM#49 Monitor Construction Activities within Jurisdictional Waters;

In many instances these avoidance and minimization measures follow existing natural resource agency guidelines or protocols. These include the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999a); CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012); and USFWS' *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS [1999] 2011).

Further avoidance and minimization measures for impacts to special-status bird species include engineering design of catenary systems, masts, fencing and other structures in accordance with design standards of transmission lines, where applicable (BIO-MM#31 Bird Protection).

Where direct or indirect impacts to special-status wildlife species, cannot be sufficiently avoided, minimized or rectified, the Authority will conduct compensatory mitigation. The compensatory mitigation may include preservation, enhancement, restoration, or creation of suitable habitats that will protect in perpetuity suitable occupied habitat for impacted species at a level commensurate to or in excess of the project's direct and indirect impacts. Applicable compensatory mitigation measures include:

- BIO-MM#54 Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp;
- BIO-MM#56 Compensate for Impacts on California Tiger Salamander;
- BIO-MM#57 Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel;
- BIO-MM#58 Compensate for Loss of Swainson's Hawk Nesting Trees;
- BIO-MM#59 Compensate for Loss of Burrowing Owl Active Burrows and Habitat;
- BIO-MM#60 Compensate for Destruction of San Joaquin Kit Fox Habitat;
- BIO-MM#63 Compensate for Permanent and Temporary Impacts on Jurisdictional Waters.

In many instances the compensatory mitigation follows existing natural resource agency guidelines or protocols. These include the USFWS' *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999a) and CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012).

Examples of compensatory mitigation may include the conservation of similar vegetation communities to that of the impact area, a conservation easement, and the development and implementation of a land management plan to address the long-term sustainability of the mitigation site for special-status wildlife species. Habitat compensation may be accomplished by (1) purchasing "credits" from a USFWS-approved and/or CDFW-approved conservation bank with a service area covering the impact area; (2) acquiring appropriate properties in fee-title; or (3) establishing a conservation easement over a property. The USFWS- and CDFW- approved compensation will be consistent with the USFWS Biological Opinion and/or CDFW 2081(b).

Where offsite mitigation is necessary to offset short-term temporary and/or long-term permanent residual impacts that have not been sufficiently avoided, reduced, rectified or minimized to a less-than-significant level, the Authority will identify suitable habitat restoration, enhancement, and preservation sites to compensate for the residual impacts on special-status wildlife species (BIO-MM#65 Offsite Habitat Restoration, Enhancement, and Preservation). In order to minimize secondary impacts associated with the offsite compensatory mitigation, the offsite habitat restoration, enhancement, and preservation program will be designed, implemented, and monitored in ways that are consistent with the terms and conditions of the USACE Section 404 Permit, CDFW 1600 Streambed Alteration Agreement, and CESA and federal ESA as they apply to their jurisdiction and resources onsite.

There would be no secondary impacts from these mitigation measures. By avoiding, minimizing and compensating for direct and indirect impacts to special-status wildlife, long-term effects to the future success of special-status wildlife species will be reduced. The Authority finds that the combination of the above list of mitigation measures would substantially lessen the direct and indirect impacts to special-status wildlife species by reducing them to a less than significant impact under CEQA.

3.5.3 BIO Impact #3 – Construction Effects on Habitats of Concern

As described in Section 3.7.4 of the Final EIR/EIS, habitats of concern occurring within the study area for the Preferred Alternative include special-status plant communities, jurisdictional waters, conservation areas, and protected trees. These are identified for the Preferred Alternative in Attachment E to these Findings (highlighted version of Final EIR/EIS Appendix 3.7-B, Atts. 3, 4, & 5). The avoidance of sensitive biological resources was an important consideration during the

design of the HST alternatives and the selection of the Preferred Alternative. Project design features, such as elevated sections, minimize direct effects while accommodating operation requirements.

Direct (BIO #3) Impacts during Construction Period

Construction activities within and adjacent to temporary impact areas of the construction footprint would have direct impacts on habitats of concern. These impacts would include removal or disruption (i.e., trampling and crushing) of special-status plant communities by construction vehicles and personnel. With respect to vegetation removal, it should be noted that vegetation within the HST right-of-way would be permanently removed (as discussed under BIO Impact #7). However, habitats of concern requiring removal to accommodate construction operations (i.e., access and laydown area) would be restored after construction activities are completed (BIO-MM#47, BIO-MM#48).

Direct construction impacts on jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Construction staging areas are planned adjacent to seasonal riverine features to facilitate construction of elevated structures, and are also planned where bridges are proposed at at-grade crossings. Temporary fill would be placed during the construction of access roads and staging/equipment storage areas. This fill would result in a temporary loss of jurisdictional waters; potential impacts on the physical, chemical and biological characteristics of aquatic substrates and food webs; and a potential increase in erosion and sediment transport into adjacent aquatic areas.

Direct construction impacts on satellite and linkage areas identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998) would include the creation of temporary partial or total movement barriers to special-status species, the loss or degradation of special-status plant and wildlife species, and the loss or degradation of the lands that could support or provide habitat for these species.

Construction of the HST project would result in the temporary removal or modification of protected trees within the construction footprint, which could conflict with the objectives, goals, and/or provisions identified in approved local, regional, or state conservation plans.

Indirect (BIO #3) Impacts during Construction Period

Indirect impacts would include contamination of habitats of concern outside the construction footprint from construction equipment leaks; construction dust reducing photosynthetic capability; and an increased risk of fire in adjacent open spaces.

Temporary indirect construction impacts on special-status plant communities would include fragmentation and introduction of nonnative, invasive plant species. These changes would result in decreased viability and gradual loss of special-status plant communities. Fragmentation would result from the construction of temporary features, especially linear features, including access roads that bisect special-status plant communities. Construction activities could facilitate the spread of nonnative invasive plant species through introduction of seeds by construction equipment, vehicles, and personnel.

Because Project period indirect impacts on jurisdictional waters are more extensive than and tend to encompass the construction period impacts, the indirect impacts on jurisdictional waters are discussed in BIO Impact #7 in Section 3.7.5.3, High-Speed Train Alternatives (Project Impacts, Habitats of Concern).

Indirect construction impacts on satellite and linkage areas identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998) would include fragmentation

of satellite and linkages areas where crossed by temporary construction activities (e.g., staging areas and access roads) and disturbance of natural lands within recovery areas that reduces habitat value for species recovery.

The direct and indirect impacts on habitats of concern during construction are considered a significant impact.

Implementation of the following mitigation measures will reduce BIO Impact #3 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings):

BIO-MM#1. Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist and Project Biological Monitor(s).

BIO-MM#2. Regulatory Agency Access.

BIO-MM#3. Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM#5. Prepare and Implement a Biological Resources Management Plan.

BIO-MM#6. Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM#7. Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM#9. Equipment Staging Areas.

BIO-MM#11. Vehicle Traffic.

BIO-MM#13. Work Stoppage.

BIO-MM#15. Post-Construction Compliance Reports.

BIO-MM#16. Conduct Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities.

BIO-MM#47. Restore Temporary Riparian Impacts.

BIO-MM#48. Restore Temporary Impacts on Jurisdictional Waters.

BIO-MM#49. Monitor Construction Activities within Jurisdictional Waters.

BIO-MM#50. Mitigation and Monitoring of Protected Trees.

BIO-MM#61. Compensate for Permanent Riparian Impacts.

BIO-MM#62. Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan.

BIO-MM#63. Compensate for Permanent and Temporary Impacts on Jurisdictional Waters.

BIO-MM#64. Compensate for Impacts to Protected Trees.

BIO-MM#65. Offsite Habitat Restoration, Enhancement and Preservation.

Impacts on habitats of concern from construction activities will be avoided and minimized where feasible. General avoidance/minimization measures will be implemented in order to track

mitigation success and provide assurance that measures are implemented correctly and fully. These mitigation measures are standard procedures, commonly used on large infrastructure projects. The measures are the same as the general mitigation measure described in BIO Impact #1 and 2 and have the same or similar ability to reduce impacts on habitats of concern. As such, they are not repeated here except for those additional measures that did not apply to Bio Impact #1 and 2.

To avoid and minimize impacts on habitats of concern, in areas of suitable habitat where floristic surveys could not be conducted, BIO-MM#16 (Conduct Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities) would identify the locations of all special-status plant communities in areas not previously surveyed.

The Authority will avoid and minimize impacts on Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS 1998) covered species through implementation of USFWS' Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS [1999] 2011) (BIO-MM#46 Minimize Impacts on San Joaquin Kit Fox).

To reduce impacts on jurisdictional waters, protective devices will be installed and construction will be monitored (BIO-MM#49 Monitor Construction Activities within Jurisdictional Waters).

Impacts to protected trees will be reduced by conducting preconstruction surveys to evaluate the condition of protected trees, fencing protected trees that may be indirectly affected by construction activities to form ERAs, or by transplanting trees (BIO-MM#50 Mitigation and Monitoring of Protected Trees).

Where avoidance and minimization of habitats is not feasible, both temporary and permanent impacts will be mitigated through habitat restoration. To reduce impacts to these sensitive habitats, during post-construction, the Contractor will revegetate all disturbed riparian areas (BIO-MM#47 Restore Temporary Riparian Impacts) and restore topography of jurisdictional waters using stockpiled and segregated soils and revegetate disturbed areas (BIO-MM#48 Restore Temporary Impacts on Jurisdictional Waters).

Since avoidance, minimization, rectification, or reduction of direct and indirect impacts will not alone fully mitigate all impacts on habitats of concern to a less than significant level, mitigation will also be secured by the Authority through compensatory mitigation. The Authority will compensate for permanent impacts on habitats of concern, as determined in consultation with the appropriate agencies (e.g., USACE, CDFW, SWRCB), through (1) purchasing "credits" from a Service-approved conservation bank with a service area covering the impact area; (2) acquiring appropriate properties in fee-title; or (3) establishing a conservation easement over a property. Specifically, the following compensatory mitigation will mitigate for loss of habitats of concern:

- BIO-MM#60 Compensate for Destruction of San Joaquin Kit Fox Habitat
- BIO-MM#61 Compensate for Permanent Riparian Impacts
- BIO-MM#63 Compensate for Permanent and Temporary Impacts on Jurisdictional Waters
- BIO-MM#64 Compensate for Impacts to Protected Trees

Compensation shall include aquatic resources restoration, establishment, enhancement, or preservation. For riparian areas, a 2:1 ratio for Valley Foothill Riparian is the proposed ratio for restoration and/or purchase of credits in a mitigation bank. For vernal pool habitat, a 2:1 ratio is the proposed minimum for compensation. For all other jurisdictional waters the Authority will mitigate impacts on aquatic resource at minimum of a 1:1 ratio, or as determined in consultation

with the appropriate agencies. For protected trees, the Authority will provide mitigation in accordance to the local regulations and laws in each jurisdiction.

Prior to the start of ground-disturbing activities, in order to ensure compliance with permit applications for USFWS, USACE, SWRCB, and CDFW, the Authority will develop a site specific Comprehensive Mitigation Monitoring Plan(s) containing performance standards (BIO-MM#62 Prepare and Implement a Site-Specific Comprehensive Mitigation and Monitoring Plan).

Offsite mitigation is necessary for short-term temporary and/or long-term permanent residual impacts that have not been sufficiently avoided, reduced, rectified or minimized to a less-than-significant level by project Design Features or other mitigation measures. The Authority will identify suitable habitat restoration, enhancement, and preservation sites to compensate for the residual impacts on habitats of concern (BIO-MM#65 Offsite Habitat Restoration, Enhancement, and Preservation). In order to minimize any potential mitigation impacts offsite, the offsite habitat restoration, enhancement, and preservation program will be designed, implemented, and monitored consistent with the terms and conditions of the USACE Section 404 Permit, CDFW 1600 Streambed Alteration Agreement, and CESA and federal ESA as they apply to their jurisdiction and resources onsite. There would be no significant secondary impacts from implementation of these mitigation measures. By avoiding, minimizing and compensating for direct and indirect impacts to habitats of concern, long-term effects to the future success of habitats of concern will be reduced. The Authority finds that the combination of the above list of mitigation measures would substantially lessen the direct and indirect impacts to habitats of concern by reducing the impacts to a less than significant level under CEQA.

3.5.4 BIO Impact #5 – Project Effects on Special-Status Plant Species

Up to thirty-eight special-status plant species have the potential to occur in and immediately adjacent to the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by project period activities. As indicated in Attachment D to these Findings (highlighted version of Final EIR/EIS Appendix 3.7A, Att. 1), the potential for occurrence is identified as no potential, low, moderate, or high, based on the presence of suitable habitat, the range of the species, and the proximity of known occurrences of the species.

In addition to the species that have been observed within the Special-Status Plant Study Area, special-status plant species have the potential to occur in areas of suitable habitat in parcels that have not been surveyed. These species include federally and/or state-listed species and species listed by the California Native Plant Society, all of which are considered rare in California. If these species occur in the construction footprint, they would be subject to the same adverse effects as those described below for species known to occur.

Direct (BIO #5) Project Impacts

Direct impacts on special-status plant species and native plant species would result from the permanent removal of vegetation from within the Preferred Alternative footprint. Disturbance of individuals, populations, or potential suitable habitat for special-status plant species could occur during construction of permanent infrastructure, and ongoing operation and maintenance activities (e.g., routine inspection and maintenance of the HST right-of-way).

Direct impacts include the permanent removal of special-status plant communities and land cover types that provide habitat for a number of special-status plants. Based on the habitat requirements of special-status plants, as many as 38 species have a potential to occur within the Preferred Alternative. Some areas within the Preferred Alternative were not made available for pedestrian field surveys. Therefore, inaccessible areas with potentially suitable habitat present

are considered occupied by special-status plant species. For these reasons, Preferred Alternative is assumed to have suitable habitat for special-status plant species.

Indirect (BIO #5) Project Impacts

Indirect impacts on special-status plant species and native plant species would potentially include erosion, siltation, and runoff into natural and constructed watercourses; soil and water contamination from construction equipment leaks; construction dust affecting plants by reducing their photosynthetic capability (especially during flowering periods); and an increased risk of fire (e.g., construction equipment use and smoking by construction workers) in adjacent open spaces.

Indirect impacts on special-status plant species and native plant species are anticipated to include erosion, sedimentation, siltation, and changes in hydrology that could affect adjacent aquatic habitats; wind erosion effects; increased risk of fire; habitat degradation through changes in habitat heterogeneity, fragmentation, and the introduction of nonnative invasive plant species; and introduction of noxious plant species.

The direct and indirect impacts on special-status plant species and habitats suitable for special-status plant species during the project period are considered a significant impact.

Implementation of the following mitigation measures will reduce BIO Impact #5 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings):

BIO-MM#1. Designate Project Biologist(s), Regulatory Specialist (Waters), Project Botanist and Project Biological Monitor(s).

BIO-MM#2. Regulatory Agency Access.

BIO-MM#3. Prepare and Implement a Worker Environmental Awareness Program.

BIO-MM#5. Prepare and Implement a Biological Resources Management Plan.

BIO-MM#6. Prepare and Implement a Restoration and Revegetation Plan.

BIO-MM#7. Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).

BIO-MM#9. Equipment Staging Areas.

BIO-MM#11. Vehicle Traffic.

BIO-MM#13. Work Stoppage.

BIO-MM#14. "Take" Notification and Reporting.

BIO-MM#15. Post-Construction Compliance Reports.

BIO-MM#16. Conduct Preconstruction Surveys for Special-Status Plant Species and Special-Status Plant Communities.

BIO-MM#17. Prepare and Implement Plan for Salvage, Relocation, and/or Propagation of Special-Status Plant Species.

BIO-MM#53. Compensate for Impacts on Special-Status Plant Species.

Project impacts on special-status plant species would be similar to construction impacts; however, impacts would be permanent and would result in continued indirect impacts resulting from construction of permanent infrastructure and train operation. Impacts to special-status plant species would be reduced by the Mitigation Measures described under BIO Impact #1.

There would be no secondary impacts from these mitigation measures. By minimizing and compensating for direct and indirect impacts to special-status plants, long-term effects to the future success of special-status plant species will be reduced. The combination of these mitigation measures would lessen the direct and indirect impacts to special-status plant species to a less than significant impact under CEQA.

3.5.5 BIO Impact #6 – Project Effects on Special-Status Wildlife Species

Up to fifty-four special-status wildlife species have the potential to occur in and near the footprint of the Preferred Alternative and as a result may be directly or indirectly impacted by project period activities. As indicated in Attachment D to these Findings (highlighted version of Final EIR/EIS Appendix 3.7-A, Att. 2), the potential for occurrence is identified as no potential, low, moderate, or high. The presence of and potential for special-status wildlife species to occur in a particular habitat is linked to the physical characteristics of the landscape and the species known geographic range.

Direct (BIO #6) Project Impacts

Direct impacts to special-status wildlife species (including invertebrates, amphibians, reptiles, fish, birds, and mammals) and native fauna may occur as a result of direct removal of host plants, permanent conversion of occupied habitat to project infrastructure, direct strike during operation and maintenance, trampling or crushing, exposure to contaminants, erosion, and sedimentation, etc. These direct impacts to individual special-status wildlife species occur within the limits of disturbance. As a result of project activities, the Preferred Alternative may result in adverse effects on special-status wildlife species through harassment, disturbance, injury, nest abandonment, or death of individuals. These impacts may occur to all life stages (i.e., eggs, larvae, young, juveniles, or adults). Ongoing operation and maintenance activities would also occur (e.g., routine inspection and maintenance of the HST right-of-way) and would similarly involve disturbance from trampling or crushing of native vegetation by vehicle or foot traffic.

Indirect (BIO #6) Project Impacts

Project period indirect impacts on special-status wildlife species (including invertebrates, amphibians, reptiles, fish, birds, and mammals) and native fauna associated with the Preferred Alternative may result from increased noise, light, visual (motion) and ground disturbance. During operation, maintenance activities could contribute to chemical runoff and pollution of adjacent habitat. Project elements including security fencing and electrical infrastructure may attract predators (e.g., raptors, coyotes) and increase prey on special-status wildlife species. These impacts may indirectly result in water quality degradation and contamination, hydrological modifications, habitat degradation (through soil compaction, or alteration of vegetation cover), introduce nonnative invasive (noxious) weeds, reduce host plant vigor, and in some cases may result in mortality of individuals.

Specifically, the indirect impacts may result in reduced reproductive success, decreased survivorship of these species and their food, abandonment of refugia (e.g., burrows), temporary shifts in foraging patterns or territories (displacement), dispersal movements, changes in behavior (e.g., startle and avoidance), reduced population viability, and increased mortality or

predation. These impacts may occur to all life stages (i.e., eggs, larvae, young, juveniles or adults).

The direct and indirect impacts on special-status wildlife species and native fauna during the project period are considered a significant impact. Implementation of the following mitigation measures will reduce BIO Impact #6 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings):

BIO-MM#18. Conduct Preconstruction Sampling and Assessment for Vernal Pool Fauna.

BIO-MM#19. Seasonal Vernal Pool Work Restriction.

BIO-MM#20. Implement and Monitor Vernal Pool Protection.

BIO-MM#21. Implement Conservation Guidelines for the Valley Elderberry Longhorn Beetle.

BIO-MM#22. Conduct Preconstruction Surveys for Special-Status Reptile and Amphibian Species.

BIO-MM#23. Conduct Special-Status Reptile and Amphibian Monitoring, Avoidance, and Relocation.

BIO-MM#24. Conduct Protocol and Preconstruction Surveys for California Tiger Salamander.

BIO-MM#25. Implement Avoidance and Minimization Measures for California Tiger Salamander.

BIO-MM#26. Conduct Protocol-Level Surveys for Blunt-Nosed Leopard Lizard.

BIO-MM#27. Phased Preconstruction Surveys for Blunt-Nosed Leopard Lizard.

BIO-MM#28. Blunt-Nosed Leopard Lizard Avoidance.

BIO-MM#29. Conduct Preconstruction Surveys and Delineate Active Nest Exclusion Areas for Other Breeding Birds.

BIO-MM#30. Conduct Preconstruction Surveys and Monitoring for Raptors.

BIO-MM#31. Bird Protection.

BIO-MM#32. Conduct Preconstruction Surveys for Swainson's Hawks.

BIO-MM#33. Swainson's Hawk Nest Avoidance and Monitoring.

BIO-MM#34. Monitor Removal of Nest Trees for Swainson's Hawks.

BIO-MM#35. Conduct Protocol Surveys for Burrowing Owls.

BIO-MM#36. Burrowing Owl Avoidance and Minimization.

BIO-MM#37. Conduct Preconstruction Surveys for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.

BIO-MM#38. Implement Avoidance and Minimization Measures for Nelson's Antelope Squirrel, Tipton Kangaroo Rat, Dulzura Pocket Mouse, and Tulare Grasshopper Mouse.

BIO-MM#39. Implement Avoidance and Minimization Measures for Fresno Kangaroo Rat.

- BIO-MM#40.** Conduct Preconstruction Surveys for Special-Status Bat Species.
- BIO-MM#41.** Bat Avoidance and Relocation.
- BIO-MM#42.** Bat Exclusion and Deterrence.
- BIO-MM#43.** Conduct Preconstruction Surveys for American Badger and Ringtail.
- BIO-MM#44.** American Badger and Ringtail Avoidance.
- BIO-MM#45.** Conduct Preconstruction Surveys for San Joaquin Kit Fox.
- BIO-MM#46.** Minimize Impacts on San Joaquin Kit Fox.
- BIO-MM#47.** Restore Temporary Riparian Impacts.
- BIO-MM#48.** Restore Temporary Impacts on Jurisdictional Waters.
- BIO-MM#49.** Monitor Construction Activities within Jurisdictional Waters.
- BIO-MM#51.** Install Flashing or Slats within Security Fencing.
- BIO-MM#52.** Construction in Wildlife Movement Corridors.
- BIO-MM#54.** Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp.
- BIO-MM#55.** Implement Conservation Guidelines during project operation for Valley Elderberry Longhorn Beetle.
- BIO-MM#56.** Compensate for Impacts on California Tiger Salamander.
- BIO-MM#57.** Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel.
- BIO-MM#58.** Compensate for Loss of Swainson's Hawk Nesting Trees.
- BIO-MM#59.** Compensate for Loss of Burrowing Owl Active Burrows and Habitat.
- BIO-MM#60.** Compensate for Destruction of San Joaquin Kit Fox Habitat.
- BIO-MM#61.** Compensate for Permanent Riparian Impacts.
- BIO-MM#63.** Compensate for Permanent and Temporary Impacts on Jurisdictional Waters.
- BIO-MM#65.** Offsite Habitat Restoration, Enhancement and Preservation.
- N&V-MM#3.** Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines.

Project impacts on special-status wildlife species would be similar to construction impacts; however, impacts would be permanent and would result in continued indirect impacts resulting from construction of permanent infrastructure and train operation. Impacts to special-status wildlife species would be reduced by the Mitigation Measures described under BIO Impact #1 and #2 (including the compensatory mitigation).

In addition to those measures, the following mitigation measures will also be implemented to avoid and minimize impacts on special-status wildlife species.

Noise impacts to special-status wildlife species present in developed areas will be minimized by the construction of sound walls (N&V-MM#3 Implement Proposed California High-Speed Train Project Noise Mitigation Guidelines).

Before the start of operation permanent special-status reptile and mammal-proof fencing consistent with applicable permits as determined in consultation with USFWS and CDFW will be installed (BIO-MM#51 Install Flashing or Slats in Security Fencing). The installation of flashing or slats within the security fencing will reduce impacts to wildlife species by preventing access to the HST which will reduce injury and mortality in special-status wildlife species

There would be no secondary impacts from these mitigation measures. By minimizing and compensating for direct and indirect impacts to special-status wildlife, long-term effects to the future success of special-status wildlife species will be reduced. The Authority finds that the combination of the above listed mitigation measures would substantially lessen the direct and indirect impacts to special-status wildlife species from project activities by reducing the impacts to a less than significant level under CEQA.

3.5.6 BIO Impact #7 – Project Effects on Habitats of Concern

As described in Section 3.7.4 of the Final EIR/EIS, habitats of concern occurring within the study area for the Preferred Alternative include special-status plant communities, jurisdictional waters, conservation areas, and protected trees. For purposes of the EIR/EIS, special-status plant communities include "sensitive natural communities" as defined by the California Department of Fish and Wildlife (Final EIR/EIS, p. 3.7-32). These are identified for the Preferred Alternative in Attachment E to these Findings (highlighted version of Final EIR/EIS Appendix 3.7-B, Atts. 3-6). The avoidance of sensitive biological resources was an important consideration during the design of the HST alternatives and the selection of the Preferred Alternative. Project design features, such as elevated sections, minimize direct effects while accommodating operation requirements.

Direct (BIO #7) Project Impacts

Direct impacts include the permanent conversion of habitats of concern (e.g., special-status plant communities, jurisdictional waters, conservation areas, and protected trees). Direct project impacts on habitats of concern would result from operation and maintenance and also includes the various permanent project components (e.g., embankments, rail bed, road overcrossings, and aerial structure footings).

Impacts on special-status plant communities would include the permanent removal of vegetation from within the construction footprint, and the disturbance (i.e., trampling or crushing) of plants due to an increase of pedestrian access/activity in the area. Ongoing operation and maintenance activities would also occur (e.g., routine inspection and maintenance of the HST right-of-way) and would similarly involve disturbance from trampling or crushing of native vegetation by vehicle or foot traffic.

The contouring and placement of fill in jurisdictional waters would result in the permanent loss of jurisdictional waters; irreversible impacts on the physical, chemical, and biological characteristics of aquatic substrates and food webs; and a potential increase in erosion and sediment transport into adjacent aquatic areas. Direct impacts on jurisdictional waters (i.e., natural and man-made features) would also include the removal or modification of local hydrology and the redirection of flow within jurisdictional waters. Permanent impacts on jurisdictional waters would occur during construction of bridges and viaducts over biological resources such as rivers or creeks (e.g., Kings River, Dutch John Slough, Cole Slough, Cross Creek, Tule River, Deer Creek, and Kern

River) and wetlands, as well as man-made ditches and basins (including shading, support piers, and removal of vegetation).

Many of the jurisdictional waters (canal/ditches, and seasonal riverine) are heavily managed by local irrigation districts, which serve public water needs, and agricultural production. The construction of the Preferred Alternative would eliminate or further degrade these man-made jurisdictional waters but would maintain existing agriculture-based functions and services.

Project direct impacts on federal recovery plan areas include the creation of permanent partial barriers to special-status species, the loss or degradation of special-status plant and wildlife species, and the loss or degradation of the lands that could support or provide habitat for these species.

The Final EIR/EIS describes that the Bakersfield Hybrid Alternative and Bakersfield Hybrid station portion of the Preferred Alternative would result in a loss of satellite area for the *Recovery Plan for Upland Species of the San Joaquin Valley*. These portions of the Preferred Alternative that would cause this impact are not, however, part of the portion of the Preferred Alternative proposed for approval in conjunction with these findings (Final EIR/EIS, pp. 157-158, 160, 162-63.)

Project period activities would result in the permanent removal or modification of protected trees, which could conflict with the objectives, goals, and/or provisions identified in approved local, regional, or state conservation plans. Where the alignment is located at-grade, removal or trimming of all protected trees is anticipated. In urban areas where the majority of the landscaped ornamental trees are located and where the alignment is on an elevated structure, trimming and limited removal of protected trees would occur.

Indirect (BIO #7) Project Impacts

Indirect impacts would include contamination of habitats of concern outside the construction footprint from increased erosion, sedimentation, siltation, and runoff due to alterations in topography and hydrology; wind erosion effects; an increased risk of fire in adjacent open spaces; and the introduction of noxious plant species from increased human activity/disturbance.

Permanent indirect impacts on special-status plant communities, including riparian areas, would include fragmentation and introduction of nonnative, invasive plant species. These changes would result in decreased viability and gradual loss of special-status plant communities. Fragmentation would result from the construction of permanent features, especially linear features, including track that bisects contiguous natural areas. Project activities could facilitate the spread of nonnative, invasive plant species through introduction of seeds by construction and operation equipment, vehicles, and personnel.

Potential indirect impacts on jurisdictional waters include a number of temporary construction related impacts and permanent water-quality-related impacts: erosion, siltation, and runoff into natural and constructed water features and deposition downstream of the construction footprint. In addition, permanent changes to jurisdictional waters within the Preferred Alternative may also result in changes in hydrology to areas outside of the footprint. For many of the man-made features these indirect impacts would be minor, and hydrologic changes would be minimal. However, for natural features such as seasonal wetlands, and vernal pools and swales (located outside the project footprint) the changes may result in changes in the natural hydrological regime. In some areas the hydroperiod may be either reduced, or extended where sheet flow is limited. Indirect impacts on seasonal riverine include the changes in water temperature through the removal of the riparian trees that provide shade, shading of open water, and reduced contribution to and ability to recycle nutrients. These indirect impacts would adversely affect adjacent or downstream jurisdictional waters up to 250 feet from the project disturbances.

Indirect impacts on portions of vernal pools and swales that abut but occur outside on either side of the footprint are categorized and identified as "indirect-bisected" impacts. Indirect impacts would occur where these features occur within the footprint; however, given the highly sensitive nature of these features, vernal pools and swales will be mitigated as though directly impacted. These features are sensitive to disturbance; therefore, indirect-bisected impacts could result in either significant changes in the hydrological regime, or complete and permanent loss, as a result of drilling, excavation, or other activities that occur within the footprint. These impacts would potentially alter the surface and subsurface water flow within the watershed, affecting the hardpan, volume, and flow direction. Because these impacts would not result from the direct removal or placement of fill material, and are more severe than other indirect impacts described above, these indirect-bisected impacts would adversely affect adjacent or downstream sensitive jurisdictional waters up to 250 feet from project disturbances.

Project indirect impacts on satellite and linkages areas within the USFWS *Recovery Plan for Upland Species of the San Joaquin Valley, California* would occur as a result of implementation of the project. These indirect impacts include fragmentation of habitats where recovery areas are crossed by permanent project elements and disturbance of natural lands, which reduces habitat value for special-status species recovery.

Direct and indirect impacts on habitats of concern during the project period are a significant impact.

Implementation of the following mitigation measures will reduce BIO Impact #7 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings).

Construction and Project Mitigation Measures BIO-MM#16 through BIO-MM#65.

Project impacts on special-status plant communities, jurisdictional waters, conservation areas, and protected trees would be permanent and would result in continued indirect impacts resulting from construction of permanent project elements and train operation. Impacts to special-status plant communities, jurisdictional waters, conservation areas, and protected trees would be reduced by the Mitigation Measures described under BIO Impact #1, #2 and #3 (BIO-MM#1 through BIO-MM#65).

There would be no significant secondary impacts from implementation of these mitigation measures. By minimizing and compensating for direct and indirect impacts to habitats of concern, long-term effects these habitats of concern will be reduced. The Authority finds that combination of the above listed mitigation measures would substantially lessen the direct and indirect impacts to special-status plant communities, jurisdictional waters, conservation areas, and protected trees from project activities by reducing the impact to a less-than-significant level under CEQA.

3.5.7 BIO Impact #8 – Project Effects on Wildlife Movement Corridors

The Preferred Alternative incorporates a number of project design features that would facilitate wildlife movement, including elevated tracks, road overcrossings and undercrossings, and dedicated wildlife crossing structures (as described in Chapter 2, Alternatives). Nevertheless, the placement of the project infrastructure, and the need for ongoing operations and maintenance activities, will cause direct and indirect impacts to wildlife movement corridors during the project period.

Direct (BIO #8) Project Impacts

The project design features of the Preferred Alternative would facilitate wildlife movement; however, direct impacts on wildlife movement may occur. Direct impacts include the placement of temporary and permanent linear barriers to wildlife movement with restricted crossing opportunities. This may cause habitat shifts (toward nonnative and/or disturbed type communities) over time (through direct effects), because it could degrade linkages, which may no longer provide food, cover, or ease of travel for many species. These shifts in habitat use can result in increased competition for resources, as well as the potential for genetic isolation of populations.

Developed areas are generally barriers to natural wildlife movement and are of marginal habitat value to most special status plant and wildlife species. Outside of riparian corridors and known linkages, much of the project footprint has been converted to agricultural or developed urban areas. Although these areas are generally disturbed on a daily-to-seasonal basis, wildlife species that have adapted to urban and agricultural environments may be affected by the placement of barriers, but the impact would be less severe than in natural areas.

The Preferred Alternative is designed on an elevated or viaduct structure in areas identified as riparian and wildlife movement corridor (linkages) areas. These structures would facilitate wildlife movement, but would incrementally affect movement patterns and linkage connectivity in the region. In urban Bakersfield, where the track is predominantly elevated, the Preferred Alternative will not impede wildlife movement. In at-grade sections, security fencing will be installed for safety and security purposes; in these sections wildlife movement will be facilitated through dedicated wildlife movement structures, bridges, road overcrossings and undercrossings, culverts and other drainage facilities.

Indirect (BIO #8) Project Impacts

Implementation of the project (construction of a fully dedicated HST System) may result in indirect disruption of wildlife movement through lighting, noise, motion, and startle effects.

Indirect disturbance from HST operation and maintenance activities (e.g. routine inspection and maintenance of HST right of way) of the habitats associated with a wildlife corridor may cause habitat shifts (toward nonnative and/or disturbed type communities) over time (through indirect effects) because wildlife are no longer able to move freely between areas of natural habitat.

In at-grade crossings the noise screening distance (i.e., distance from the trackway centerline within which an impact could result) for a single-train pass-by sound exposure level (SEL) of 100 dBA would be approximately 100 feet from the track centerline (for a total width of 200 feet). In at-grade crossings where the right-of-way is less than a width of 200 feet and that are adjacent to substantive wildlife habitat (e.g., identified habitat linkages), the HST could expose wildlife to noise levels that exceed the 100-dBA SEL threshold. In such cases indirect effects may cause wildlife to avoid use of a habitat linkage.

Direct and indirect impacts to wildlife movement corridors during the project period are a significant impact.

Implementation of the following mitigation measures will reduce BIO Impact #8 to less than significant (due to length, the text of the biological resources mitigation measures are presented separately in Attachment F to these CEQA Findings):

BIO-MM#51. Install Flashing or Slats within Security Fencing.

BIO-MM#52. Construction in Wildlife Movement Corridors.

BIO-MM#54. Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp.

BIO-MM#55. Implement Conservation Guidelines during project operation for Valley Elderberry Longhorn Beetle.

BIO-MM#56. Compensate for Impacts on California Tiger Salamander.

BIO-MM#57. Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel.

BIO-MM#58. Compensate for Loss of Swainson's Hawk Nesting Trees.

BIO-MM#59. Compensate for Loss of Burrowing Owl Active Burrows and Habitat.

BIO-MM#60. Compensate for Destruction of San Joaquin Kit Fox Habitat.

Impacts to wildlife movement would be reduced by the Mitigation Measures which are described, in part, under BIO Impact # 2, and #6. Impacts to wildlife species will be reduced by preventing access to the HST right of way and directing animals toward wildlife crossing structures by installation of permanent special-status reptile- and mammal-proof fencing consistent with applicable permits as determined in consultation with USFWS and CDFW (BIO-MM#51 Install Flashing or Slats in Security Fencing). A construction avoidance and minimization plan (BIO-MM#52. Construction in Wildlife Movement Corridors) will reduce impacts to special-status wildlife by optimizing the location of dedicated wildlife movement structures, minimizing ground-disturbance in and near identified wildlife movement corridors, particularly during the nighttime hours. Compensation for the impacts to special-status wildlife species will also minimize impacts to wildlife movement corridors because compensatory mitigation will be selected based, among other things, on its significance within the local and/or regional landscape of the Central Valley; consideration of a compensatory mitigation's contribution to landscape-level ecological planning includes lands that offer large, contiguous blocks of high quality habitat, adjacency to or within a matrix of other preserved lands, adjacency to or within wildlife movement corridors, and opportunities for wildlife linkages. (BIO-MM#54 Compensate for Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp, BIO-MM#55 Implement Conservation Guidelines during project operation for Valley Elderberry Longhorn Beetle, BIO-MM#56 Compensate for Impacts on California Tiger Salamander, BIO-MM#57 Compensate for Impacts on Blunt-Nosed Leopard Lizard, Tipton Kangaroo Rat, and Nelson's Antelope Squirrel, BIO-MM#58 Compensate for Loss of Swainson's Hawk Nesting Trees, BIO-MM#59 Compensate for Loss of Burrowing Owl Active Burrows and Habitat, and BIO-MM#60 Compensate for Destruction of San Joaquin Kit Fox Habitat).

The Authority finds that the combination of the project design and its incorporation of dedicated wildlife crossings, as well as the combination of the above-listed mitigation measures, including permanent preservation of areas that provide habitat linkages, will substantially lessen the impacts to wildlife movement corridors during the project period from the Preferred Alternative by reducing the impacts to a less than significant level under CEQA.

3.6 Hazardous Materials and Waste (Section 3.10 in the Final EIR/EIS)

With implementation of the recommended mitigation measure identified in the finding for HMW Impact # 4, below, the project would not result in any significant and unavoidable impacts related to hazardous materials and waste. This conclusion is further supported by the Project Design Features that the Authority has included as part of the project, consistent with and in

furtherance of the Statewide Program EIR/EIS commitments. (See Attachment A; see also Final EIR/EIS, Section 3.10.6 and Appendix 2-D of the Final EIR/EIS.) These design features would minimize impacts due to hazardous materials as they relate to the proper transport, storage, use and disposal of hazardous materials, preparation of plans to handle unforeseen spills or undocumented contamination to reduce the exposure of workers and the public and the spread of contaminants, and specific investigation of properties before acquisition to remove or avoid contaminated areas to reduce exposure of workers and the public to hazardous material, including the following: In adopting the resolution of approval of the project, the Authority confirms that the Project Design Features are part of the project.

3.6.1 HMW IMPACT #4 - Temporary Hazardous Material and Waste Activities in the Proximity of Schools

During construction, demolition, and excavation activities, the project would potentially emit hazardous air emissions or handle extremely hazardous wastes above threshold quantities referenced in Public Resources Code section 21151.4 and described in Health and Safety Code Section 25532(j). Nine schools are located in the vicinity (0.25 mile) of potential construction activities for the Preferred alternative north of 7th Standard Road. (Final EIR/EIS, Table 3.10-5.) Potentially hazardous materials and items containing potentially hazardous materials would be used in railway construction. Demolition of existing structures within the construction footprint could require the removal of asbestos containing materials and lead-based paint from the project site.

Because the project would comply with the above Public and Health and Safety codes, as well as all other federal, state, and local regulations related to the transport, handling, and disposal of hazardous waste, the effect of HST construction related to routine transport and handling of hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school would have a less than significant impact.

The effect of hazardous materials released to the environment in the unlikely event of a leak or spill as the result of an accident or collision during construction would largely be minor because of the generally small quantities of materials transported or used at any given time and because of the precautions required by existing State and federal regulations. However, in the most unlikely and extreme case, such a release could be a significant impact.

HMW-MM#1: Limit use of extremely hazardous materials near schools during construction. The contractor shall not handle an extremely hazardous substance (as defined in California Public Resources Code Section 21151.4) or a mixture containing extremely hazardous substances in a quantity equal to or greater than the state threshold quantity specified pursuant to subdivision (j) of Section 25532 of the Health and Safety Code within 0.25 mile of a school. Prior to construction activities signage would be installed to delimit all work areas within 0.25 mile of a school stopping construction activities from bringing hazardous materials near a school. The contractor would be required to monitor all use of extremely hazardous substances.

The above construction mitigation measure for hazardous materials and wastes is consistent with California Public Resources Code Section 21151.4, and would be effective in reducing the impact to a less-than-significant level. Implementation of the mitigation measure is not expected to result in secondary impacts.

The installation of signage to alert contractors of the presence of nearby schools will result in negligible visual impacts because they will be similar to other traffic signs in school areas. No other secondary impacts would occur in other areas. For this reason, the impacts of this mitigation measure would be less than significant.

The Authority finds that Mitigation Measure HMW-MM#1 has been required in the project and that implementation of this mitigation measure will substantially reduce or avoid the project's impacts associated with temporary hazardous material and waste activities in the proximity of schools; with implementation of Mitigation Measure HMW-MM#1, this impact will be reduced to less than significant.

3.7 Safety and Security (Section 3.11 in the Final EIR/EIS)

With implementation of the recommended mitigation measure identified in the findings for S&S Impact #10 below, the project would not result in any significant and unavoidable safety and security impacts. This conclusion is further supported by the Project Design Features that the Authority has incorporated into the project, consistent with and in furtherance of the Statewide EIR/EIS commitments. (See Attachment A; see also Final EIR/EIS, Section 3.11.6 and Appendix 2-D of the Final EIR/EIS.) In adopting the resolution of approval of the project, the Authority confirms that the Project Design Features that are set forth in Attachment A are part of the project.

3.7.1 S&S IMPACT #10 – Need for Expansion of Existing Fire, Rescue, and Emergency Services Facilities

The Downtown Fresno Station and Kings/Tulare Regional Station-East Station would introduce new passengers into these locations, which could increase the demand for fire and ambulance services. These stations would have onsite security patrols, so no increased demand for police protection at these stations is anticipated. However, there is potential for an impact on emergency response times, which is considered a significant impact.

S&S-MM #1: Monitor response of local fire, rescue, and emergency service providers to incidents at stations and provide a fair share of cost of service. Upon approval of the project, the Authority will monitor service levels in the vicinity of the Fresno and Kings/Tulare Regional Station—East stations, to determine baseline service demands. ("Service levels" consist of the monthly volume of calls for fire and police protection, as well as city- or fire protection district-funded EMT/ambulance calls that occur in the station service areas.)

Prior to operation of the stations for HST service, the Authority will enter into an agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services above the average baseline service demand level or in order to maintain acceptable response times for the station service areas (as established during the monitoring period). The fair share will be based on the percentage increase in demand created by projected passenger use for the first year of operations, with a growth factor for the first 5 years of operation. This cost-sharing agreement will include provisions for ongoing monitoring and future negotiated amendments as the stations are expanded or passenger use increases. Such amendments will be made on a regular basis for the first 5 years of station operation, as will be provided in the agreement. To make sure that services are made available, impact fees will not constitute the sole funding mechanism, although impact fees may be used to fund capital improvements or fixtures (i.e., police substation, additional fire vehicle, on-site defibrillators, etc.) necessary to service delivery.

After the first 5 years of operation, the Authority will enter into a new or revised agreement with the public service providers of fire, police, and emergency services to fund the Authority's fair share of services. The fair share will take into account the volume of ridership, past record and trends in service demand at the stations, new local revenues derived from station area development, and any services that the Authority may be providing at the station.

No secondary effects are anticipated with the above mitigation measure. If the only need for mitigation is the provision of additional emergency response equipment, this mitigation measure will result in no impacts. If the project requires funding of additional public-service facilities, such as a police substation, mitigation may result in impacts on the physical environment. Those impacts would include emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and cultural resources that may be present on the site of new structures. Any new or expanded government facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts. For this reason, it is expected that impacts of mitigation would be less than significant.

The Authority finds that Mitigation Measure S&S-MM #1 has been required in the project and that implementation of this mitigation measure will substantially lower impacts of safety and security hazards. With mitigation, this impact is less than significant.

3.8 Socioeconomics and Communities (Section 3.12 in the Final EIR/EIS)

Under CEQA, economic and social impacts resulting from a project are not environmental impacts (CEQA Guidelines, § 15064, subd. (e)). The Authority has nevertheless incorporated several design features into the project, consistent with, and in furtherance, of the Statewide Programmatic EIR/EIS environmental commitments and mitigation measures. (See Attachment A; see also Final EIR/EIS, Section 3.12.10, Project Design Features.) In adopting the resolution of approval of the project, the Authority confirms that the design features identified in Attachment A are part of the project.

Although economic and social impacts are not environmental impacts within the meaning of CEQA, where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project (CEQA Guidelines, Section 15131, Economic and Social Effects). Furthermore, if the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. (*Ibid.*) The following sets forth the Authority's determination whether the physical change is significant, as determined by the significance criteria listed in Section 3.12.4.3 of the Final EIR/EIS and the requirements set forth in CEQA Guidelines section 15064 subdivision (e) regarding social and economic impacts.

3.8.1 SO IMPACT #6 – Division of Existing Communities and Displacement of Facilities

As explained in the Revised DEIR/Supplemental DEIS and Final EIR/EIS, under CEQA, the effect of a project on a neighborhood or community is significant if a project would create a new physical barrier that isolates one part of an established community from another and potentially results in a physical disruption to community cohesion. Community impacts are therefore typically considered less than significant under CEQA unless they divide an existing community. With respect to the HST project, the Preferred Alternative north of 7th Standard Road has the potential to divide communities by physically removing homes, businesses, and community facilities and placing a new linear project through the community outside of and away from the existing railroad right-of-way.

Much of the Preferred Alternative north of 7th Standard Road would follow existing rail lines in established transportation corridor. In most areas where the alignment would diverge from

existing rail corridors, it would cross rural agricultural land or open space, where, generally, no concentrations of homes, businesses, or community facilities are found. However, some rural residential developments or small, unincorporated communities are present along the alignment. Also, because of the predominance of agricultural activities in the region, the project alignment passes through some agricultural communities consisting of individual or clustered farmsteads on actively farmed lands along the alignment, especially in Fresno and Kings counties.

In Fresno, the project would displace the Fresno Rescue Mission, which provides meals and services, including overnight shelter accommodations for up to 250 persons, and onsite 18-month drug and alcohol recovery program that currently has approximately 110 persons enrolled full-time. It complements services provided to the homeless population by nearby Poverello House. The Fresno Rescue Mission owns and operates other related facilities (and some additional vacant land) in the immediate vicinity, including an emergency family shelter, a food warehouse, and the Save the Children playground. Because the displacement of the Fresno Rescue Mission would result in the division of a community and the loss of access to an important community resource, the impact is significant. With implementation of the mitigation measures identified below, this impact is reduced to less than significant.

Farther south, the project alignment would travel through Kings County, traversing primarily rural agricultural areas. It would bypass the City of Hanford, but would travel through a rural residential development with 25 homes in the vicinity of East Lacey Boulevard and Ponderosa Road (the Ponderosa Road community). In the Ponderosa Road community, seven units are within the project footprint that would be relocated. Remaining homes would be close (less than 200 feet) to the new HST guideway, which would be elevated 40 feet above ground level. The Kings/Tulare Regional Station–East would be built on the elevated guideway in the immediate vicinity of this community, just north of the existing freight-rail tracks. Because the project would affect the community character, social interactions, and community cohesion by displacing several households, and by exposing the remaining residential homes to increased noise and visual impacts, the impacts to the Ponderosa Road community are significant.

The Preferred Alternative north of 7th Standard Road would bypass the city of Corcoran on the eastern side, thereby avoiding impacts to the city of Corcoran, but in doing so would divide the small, unincorporated rural residential community that lies immediately northeast of the city limits, in the vicinity of Newark Avenue, between SR 43 and the irrigation canal. The alignment would pass through the middle of this community, which consists of about 20 homes on adjacent large lots. The HST tracks and associated roadway work would displace about 40% of the homes, and leave some of the remaining homes very close (within 50 to 150 feet) of the HST train tracks. Similar impacts would occur at the smaller enclave of rural residential homes approximately 1 mile to the southeast, in the vicinity of 4th Avenue and Waukena Avenue. The residential displacement occurring in these small, rural residential communities is a significant impact.

South of Shafter, the project would pass the small, unincorporated community of Crome, a cluster of about 25 to 30 homes on the northwestern quadrant of the intersection of 7th Standard Road and Central Valley Highway. The project would relocate Santa Fe Way to the west through Crome to accommodate the HST tracks. This activity would displace approximately one-third (8 to 10) of the homes in Crome and the only non-residential use in the community—a church building that houses both the 7th Standard Pentecostal Church of God and the India Pentecostal Assembly. Because of the magnitude of the displacement (the high proportion of community facilities affected) and the visual and noise impacts that would occur as a result of the project, this is a significant impact.

SO-MM#1: Implement measures to reduce impacts associated with the division of residential neighborhoods. The Authority will minimize impacts associated with the Preferred

Alternative in the rural residential areas around Ponderosa Road/Edna Way east of Hanford, in the Newark Avenue vicinity northeast of Corcoran, the 5th Avenue and Waukena Avenue vicinity east of Corcoran, and Crome, as well as in urban residential areas in Fresno, Corcoran, Wasco, and Shafter by conducting special outreach to affected homeowners and residents to fully understand their unique relocation needs. The Authority will make every effort to locate suitable replacement properties that are comparable to those currently enjoyed by these residents, including constructing suitable replacement facilities if necessary. These replacement properties will be provided consistent with the information regarding comparable replacement dwellings in Appendix 3.12-A Relocation Assistance Program Brochures of the Final EIR/EIS.

In cases where residents wish to remain in the immediate vicinity, the Authority will take measures to purchase vacant land or buildings in the area, and consult with local authorities over matters such as zoning, permits, and moving of homes and replacement of services and utilities, as appropriate. Prior to land acquisition the Authority will conduct community workshops to obtain input from those homeowners whose property would not be acquired, but whose community would be substantially altered by construction of HST facilities, including the loss of many neighbors, to identify measures that could be taken to mitigate impacts on those who remain (including placement of sound walls and landscaping, and potential uses for remnant parcels that could benefit the community in the long term).

SO-MM#2: Implement measures to reduce impacts associated with the division of existing communities. The Authority will minimize impacts associated with Preferred Alternative in the existing communities through a program of additional outreach to homeowners, residents, business owners, and community organizations in affected neighborhoods.

As a part of this program, before land acquisition, the Authority will consult with officials and representatives of community facilities affected by significant noise impacts (e.g., churches and schools) to identify suitable noise abatement measures or to help affected businesses and organizations find more-suitable locations in the community. Similarly, the Authority locate suitable replacement housing for displaced residents, as discussed in SO-MM#1.

Before the completion of final design, the Authority will also conduct community workshops about the future use of the area beneath the rail guideway. These meetings will provide residents the opportunity to identify design and use options that could strengthen community cohesion and be compatible with the character of the impacted community.

A minimum of three facilitated workshops will be held in each of community where elevated rail guideway would be constructed. To maximize attendance and generate awareness of the workshops, the Authority will work with either community organizations, or community leaders within the neighborhoods. A location and time will be selected based on the needs of the community to increase attendance.

Information will be presented at the workshops that give the community options for the future use of the area beneath the rail guideway, as well as an opportunity for individuals to provide feedback. For example, if safety considerations prohibit such uses as bike paths or community gardens, alternatives, such as sculpture gardens or managed landscaping, could be considered. The comments and feedback will be considered in planning for the future use of the sites.

Upon gathering feedback from the community, the Authority will report the finds either through a fourth public workshop, or written report that would be made available to the public.

The Authority will be responsible for implementing the results of the community workshops through project design and through the long-term management of the area beneath the elevated rail guideway. This will involve documenting the desired design concepts, incorporating them into the final design, and facilitating ongoing maintenance. The Authority will identify potential uses

that may be developed in the project right-of-way. These uses will be compatible with the character of the adjacent community and sensitive to project needs (as outlined in the Final EIR/EIS, Section 3.11, Safety and Security). The costs associated with the development of these associated uses and how costs will be paid will be determined during consultations with the affected city, county, or parks district. Furthermore, the parties or entities (i.e., the Authority, local government, park or recreation district, or nonprofit organization) responsible for some ongoing maintenance of these community areas will be determined. There would be no secondary impacts resulting from outreach programs. Secondary impacts from business and residential displacements are discussed in Chapter 3.12.

Mitigation Measure SO-MM#3: Implement measures to reduce impacts associated with the relocation of important facilities. The Authority will minimize impacts resulting from the disruption to key community facilities: Fresno Rescue Mission, the church in Crome, and an important livestock rendering facility (Baker Commodities) in the Hanford area.

The Authority will consult with the appropriate respective parties before land acquisition to assess potential opportunities to reconfigure land use and buildings and/or relocate affected facilities, as necessary, to minimize the disruption of facility activities and services, and also to ensure relocation that allows the community currently served to continue to access these services.

Because many of these community facilities are located in Hispanic communities, the Authority will continue to implement a comprehensive Spanish-language outreach program for these communities as land acquisition begins. This program will facilitate the identification of approaches that would maintain continuity of operation and allow space and access for the types of services currently provided and planned for these facilities. Also, to avoid disruption to these community amenities, the Authority will ensure that all reconfiguring of land uses or buildings, or relocating of community facilities is completed before the demolition of any existing structures.

Because the unique services provided by the rendering facility and the California Department of Food and Agriculture sampling station in Kings County are critical to agricultural operations in the region, relocation of this facility will occur before the existing facility is closed or steps will be taken to ensure that sufficient capacity is available at other facilities so there is no interruption to the services provided.

This mitigation measure will be effective in minimizing the impacts of the project by completing new facilities before necessary relocations, and by involving affected facilities in the process of identifying new locations for their operations.

Mitigation Measure SO-MM-#5: Develop measures to minimize the potential for physical deterioration. The Authority will work with the communities on the design of project features consistent with Technical Memorandum 200.6, Aesthetic Guidelines for Non-Station Structures (Authority 2011a). The guidelines for station and non-station structures allow for contextual design responses to site-specific or unique conditions, or "context sensitive solutions". Context sensitive solutions mean structural aesthetics must respond to local settings with concern for the human scale, building scale, and the vantage points from which the structures will be viewed. Included in the Authority's design principles is the requirement that the structures enhance local environments and community context. Landscaping will be used to visually integrate project structures into the local context with plantings that recreate the natural setting into which they are placed. The aesthetic design of project structures, in combination with landscape and urban design that serve the local community can create a positive contribution to the surrounding visual context and minimize the potential for physical deterioration.

All of the above mitigation measures include plans to conduct outreach activities in affected communities and to consult with property owners; these activities will result in no impacts on the

physical environment. In addition to consultation with affected parties, Mitigation Measure SO-MM#3 will require the reconfiguration of land or construction of replacement structures for community facilities impacted by the HST. Potential impacts on the physical environment from this mitigation would result from construction activities, including emissions and fugitive dust from construction equipment, construction-related noise, visual impacts associated with new structures, and impacts on biological and cultural resources that may be present on the site of new structures. Any new facilities would be designed and constructed to be consistent with local land use plans, and would be subject to separate site-specific analysis under CEQA, including measures to mitigate impacts. For this reason, it is expected that impacts of mitigation would be less than significant.

The Authority finds that Mitigation Measure SO-MM#3 has been required in the project and that implementation of this mitigation measure will reduce the project's impacts to the Fresno Rescue Mission and associated facilities, and the project's impacts to the church in Crome, to less-than-significant levels. As to the remaining impacts described above, the Authority finds that Mitigation Measures SO-MM#1, SO-MM#2, SO-MM#3, and SO-MM#5 have been required in the project and that implementation of these measures will reduce, but will not completely avoid or substantially lessen these impacts. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.8.2 SO IMPACT #7 – Effects to the Regional Agricultural Community

The Preferred Alternative north of 7th Standard Road would displace homes in the unincorporated areas of the region of the four affected counties. Although many of these displacements would occur in areas just outside of city limits, a substantial number of them would be farmsteads that would be displaced by construction of roadway overcrossings. The largest number would occur in Fresno County, where farm homesteads and rural residences would have to be displaced at intervals of approximately every mile or so along the alignment to accommodate new roadway overcrossings. These displacements would cause considerable disruption to the agricultural community south of Malaga in the agricultural areas surrounding Bowles, Monmouth, and similar small farm towns stretching from Kings County to the vicinity of Corcoran.

The displacement of numerous farm homesteads in a region that takes pride in its agricultural heritage and where agriculture is a dominant economic activity would cause disruption not only to the individual property owners but also to the wider agricultural community. Rural neighbors often rely on each other for assistance (e.g., for responding to an emergency, lending resources in the event of unexpected equipment failure, finding extra hands at harvest). This interdependence can build community cohesion, even in areas with low population density, especially where the same families may have been neighbors for many years. Displacement of rural homes can cause substantial disruption to families faced with having to move or replace their established home, along with outbuildings, gardens, irrigation and fencing systems, mature landscaping, and other improvements that have been carefully built over decades or several generations. The broader farming community can also suffer disruption from the displacement of multiple neighbors—who may or may not decide to continue farming in proximity to a new high-speed train line—and through having other farming operations in the area divided by a new linear feature. This disruption to the agricultural community in the rural areas of Fresno and Kings counties is a significant impact.

SO-MM#1: Implement measures to reduce impacts associated with the division of residential neighborhoods. Details regarding SO-MM#1 are described above.

SO-MM#2: Implement measures to reduce impacts associated with the division of existing communities. Details regarding SO-MM#2 are described above.

Mitigation Measure SO-MM-#4: Provide access modifications to affected farmlands.

In cases where partial-property acquisitions result in division of agricultural parcels, the Authority will evaluate with property owner input the effectiveness of providing overcrossings or undercrossings of the HST track to allow continued use of agricultural lands and facilities. This would include the design of overcrossings or undercrossings to allow farm equipment passage. (Refer to Section 3.14, Agricultural Lands, for additional information.) This mitigation measure will be effective because it will maintain access to farmlands for farmers whose property is bisected.

Mitigation Measure SO-MM#5. Details regarding Mitigation Measure SO-#5 are described above.

Implementation of Mitigation Measures SO-MM#1, SO-MM#2, SO-MM#4, and SO-MM#5 will ensure that social and economic impacts to the regional agricultural economy are substantially lessened, which, in turn, will ensure that no significant adverse physical environmental impacts (e.g., blight or substantial deterioration of existing facilities causing visual or other impacts) would result from the economic impact to the regional agricultural community. Furthermore, as explained in the Final EIR/EIS, as farm operations logically reallocate land resources and relocate agricultural facilities and given the regional context of a productive agricultural economy, this impact would be less than significant. (Final EIR/EIS, § 3.12-13.2.)

The Authority finds that Mitigation Measures SO-MM#1, SO-MM#2, SO-MM#4, and SO-MM#5 have been required in the project and that implementation of these measures will substantially lessen or avoid the project's impacts relating to effects on the regional agricultural economy; this impact is less than significant.

3.9 Station Planning, Land Use, and Development (Section 3.13 in Final)

3.9.1 LU IMPACT #1 – Potential for Construction to Alter Land Use Patterns

Construction of the project would result in temporary impacts, including increases in noise levels, dust and other air pollutants, traffic congestion, visual changes, disrupted access to properties and neighborhoods, and temporary use of land for construction fabrication, laydown, and staging areas. Noise, dust, and visual change would inconvenience residents along the Preferred Alternative. For this reason, construction effects would be significant.

AQ-MM#1: Reduce Criteria Exhaust Emissions from Construction Equipment. This mitigation measure will apply to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix, as set forth in CARB's Non-Road 2007 database. The Authority will require the contractor to document efforts it undertook to locate newer equipment (such as, in order of priority, Tier 4, Tier 3 or Tier 2 equipment) and/or tailpipe retrofit equivalents. The Authority will require the contractor to provide documentation of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required CARB or SJVAPCD operating permit will be made available at the time of mobilization of each piece of equipment. The Authority will require the contractor to keep

a written record (supported by equipment-hour meters where available) of equipment usage during project construction for each piece of equipment.

AQ-MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction

Equipment. This mitigation measure applies to all on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material hauling trucks will consist of an average fleet mix of equipment model year 2010, or newer, but no less than the average fleet mix for the current calendar year as set forth in CARB's EMFAC 2011 database. The Authority will require the contractor to provide documentation of efforts to secure such fleet mix. The Authority will require the contractor to keep a written record of equipment usage during project construction for each piece of equipment.

AQ-MM#3: Reduce the Potential Impact of Concrete Batch Plants. Concrete batch plants will be sited at least 1,000 feet from sensitive receptors, including daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The concrete batch plant will utilize typical control measures to reduce the fugitive dust, such as water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central dust collection systems and other suitable technology, to reduce emissions to be equivalent to the U.S. EPA AP-42 controlled emission factors for concrete batch plants.

AQ-MM#4: Offset Emissions through the VERA Program. This mitigation measure will address exceedance of the general conformity applicability and CEQA emissions thresholds for VOC and NO_x, and the CEQA emission thresholds for PM₁₀ and PM_{2.5}. The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero the project's actual emissions of VOC, NO_x, PM₁₀ and PM_{2.5} by providing funds for the district's Emission Reduction Incentive Program to fund grants for projects that achieve emission reductions, thus offsetting project-related impacts on air quality. Projects funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase shall be provided at the beginning of the construction phase. At a minimum, mitigation/offsets shall occur in the year of impact, or as otherwise permitted by 40 CFR Part 93 Section 93.163.

N&V-MM#1: Construction Noise Mitigation Measures. During construction the Authority will require the contractor to monitor construction noise to verify compliance with the noise limits as shown in Table 3.4-1 of the Final EIR/EIS. The contractor will be given the flexibility to meet the FTA construction noise limits in the most efficient and cost-effective manner. This can be done by either prohibiting certain noise-generating activities during nighttime hours or providing additional noise control measures to meet the noise limits. A noise monitoring program will be developed to meet required noise limits, the following noise control mitigation measures will be implemented as necessary, for nighttime and daytime:

- Install a temporary construction site sound barrier near a noise source.
- Avoid nighttime construction in residential neighborhoods.
- Locate stationary construction equipment as far as possible from noise-sensitive sites.
- Re-route construction truck traffic along roadways that will cause the least disturbance to residents.
- During nighttime work, use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with spotters.
- Use low-noise emission equipment.
- Implement noise-deadening measures for truck loading and operations.
- Monitor and maintain equipment to meet noise limits.
- Line or cover storage bins, conveyors, and chutes with sound-deadening material.

- Use acoustic enclosures, shields, or shrouds for equipment and facilities.
- Use high-grade engine exhaust silencers and engine-casing sound insulation.
- Prohibit aboveground jackhammering and impact pile driving during nighttime hours.
- Minimize the use of generators to power equipment.
- Limit use of public address systems.
- Grade surface irregularities on construction sites.
- Use moveable sound barriers at the source of the construction activity.
- Limit or avoid certain noisy activities during nighttime hours.
- To mitigate noise related to pile driving, the use of an auger to install the piles instead of a pile driver would reduce noise levels substantially. If pile driving is necessary, limit the time of day that the activity can occur.

N&V-MM#2: Construction Vibration Mitigation Measures. Building damage from construction vibration is only anticipated from impact pile driving at very close distances to buildings. If piling is more than 25 to 50 feet from buildings, or if alternative methods such as push piling or auger piling can be used, damage from construction vibration is not expected to occur. Other sources of construction vibration do not generate high enough vibration levels for damage to occur. When a construction scenario has been established, preconstruction surveys would be conducted at locations within 50 feet of piling to document the existing condition of buildings in case damage is reported during or after construction. The Authority will arrange for the repair of damaged buildings or will pay compensation to the property owner.

AVR-MM#1a: Minimize Visual Disruption from Construction Activities. The project will adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:

- Minimize pre-construction clearing to that necessary for construction.
- Limit the removal of buildings to those that would obstruct project components.
- When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views.
- After construction, regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and types to that which was removed based upon local jurisdictional requirements. If there are no local jurisdictional requirements, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage similar to the coverage provided by the trees that were removed for construction.
- To the extent feasible, do not locate construction staging sites within the immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days.

AVR-MM#1b: Minimize Light Disturbance during Construction. Where construction lighting will be required during nighttime construction, shield such lighting and direct it downward in such a manner that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage off-site.

Secondary impacts from implementation of the above-identified mitigation measures are described in Section 3.2, Air Quality and Global Climate Change, 3.3, Noise and Vibration, and 3.12, Aesthetic and Visual Resources, of these findings as well as in the respective resource chapters of the Final EIR/EIS.

As found in in Section 3.2, Air Quality and Global Climate Change, 3.3, Noise and Vibration, and 3.12, Aesthetic and Visual Resources of these Findings, implementation of the mitigation measures adopted for the Project's construction air quality, construction noise and vibration, and construction effects on aesthetic and visual resources impacts would reduce each of these construction-related impacts to less-than-significant levels. Therefore, implementation of the mitigation measures adopted for these construction impacts would be effective at mitigating or avoiding the noise, dust, and visual changes that would otherwise inconvenience residents along the project. Implementation of the Project Design Features set forth in Attachment A of these Findings and described in Section 4.1 will ensure that the project would not result in any transportation-related land use impacts. For the reasons described in Section 3.12, Socioeconomics, Communities, and Environmental Justice of the Final EIR/EIS, project construction would not result in any significant construction-related socioeconomic or communities impacts. Any use of land for construction fabrication, laydown, and staging areas would be temporary and the land would be restored to its previous use or other compatible use once construction is complete. For these reasons, the project will not result in a significant construction-related land use impacts.

The Authority finds that Mitigation Measures AQ-MM #1, AQ-MM #2, AQ-MM #3, AQ-MM #4, N&V-MM #1, N&V-MM# 2, AVR-MM #1a, and AVR-MM #1b have been required in the project and that implementation of these measures would be effective in reducing the impact from altering land use patterns as a result of construction activities to a less-than-significant level.

3.9.2 LU IMPACT #2 – Permanent Conversion of Existing Land Uses to Transportation Use

The permanent conversion of land from residential, commercial, industrial, community facilities, agricultural and other uses for the project would result in a significant land use impact.

The project would not cause a significant land use impact for the sections of the HST alignment that runs adjacent to the existing railroad right-of-way; in these areas, the project would be compatible with adjacent land uses and consistent with land use plans and policies. Where the alignment diverges from the BNSF Railway and is adjacent to agricultural lands, the HST would convert agricultural land to other uses, but it would not have an indirect effect on the continued use of adjoining agricultural lands for agricultural purposes. Nevertheless, because of the increase in intensity of land use (i.e., transportation uses rather than agricultural uses within the footprint of the alignment), the Final EIR/EIS and these Findings conservatively conclude that this impact would be significant.

The Kings/Tulare Regional Station–East Station would convert approximately 22 acres of agricultural land in unincorporated Kings County into a transportation use. The Authority will work with the City of Hanford and Kings County to discourage growth in the vicinity of the station by restricting onsite parking and encouraging transit uses to the station from downtown Hanford, Visalia, and Tulare, and purchasing agricultural conservation easements from willing sellers of adjacent agricultural lands. However, it is likely that the location of the station at this site would attract at least some transportation-oriented commercial development. While current zoning allows for industrial uses of some of the land adjoining the station, much of the area continues to be zoned for agriculture and is in agricultural use. In addition, current plans and policies of the City of Hanford call for development to the west of the city and not to the east. This is partially due to the lack of sewer conveyance facilities on the eastern edge of Hanford and the expense of

extending this infrastructure out to the site. It should be noted, however, that since the release of the Revised DEIR/Supplemental DEIS, the City of Hanford has indicated it may be extending a sewer line to the east. In particular, a review of the City of Hanford Draft EIR for the Highway 43/198 Commercial Center now indicates that the City is planning to extend a sewer line along East Lacey Boulevard closer to the Kings/Tulare Regional Station – East site. The Fresno to Bakersfield Section Final Project EIR/EIS proposes to further extend that sewer line eastward to the Kings/Tulare Regional Station – East site south along the proposed HST right-of-way to East Lacey Boulevard and then west on East Lacey Boulevard. Nevertheless, the Kings/Tulare Regional Station–East would change the pattern and intensity of the use of the land that could be incompatible with adjacent land uses. The presence of the station is likely to result in some unplanned changes in the use of existing land. Therefore, this impact would be significant.

AG-MM#1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland.

The Authority has entered into an agreement with the DOC California Farmland Conservancy Program to implement agricultural land mitigation for the High-Speed Train Project. The Authority will fund the California Farmland Conservancy Program’s work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers in the Fresno to Bakersfield Section. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio of not less than 1:1 for lands that are permanently converted to nonagricultural use by the project. In addition, the Authority will provide an additional increment of Important Farmland mitigation acreage, above the 1:1 ratio minimum, at a level consistent with the terms of a settlement agreement the Authority reached with agricultural interests in *County of Madera, et al. v. California High-Speed Rail Authority*. This approach will provide a consistent approach to calculating the total amount of acres of agricultural conservation easements across the Central Valley.

The California Farmland Conservancy Program will work with local, regional, or statewide entities whose purpose includes the acquisition and stewardship of agricultural conservation easements. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements. These will include, but are not limited to, provisions to ensure that the easements will conform to the requirements of Public Resources Code Section 10252 and to prioritize the acquisition of willing seller easements on lands that are adjacent to other protected agricultural lands or that would support the establishment of greenbelts and urban separators.

Although implementation of AG-MM#1 will not avoid the significant impact of converting Important Farmland to HST project use, the Authority nevertheless finds that AG-MM#1 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that this mitigation measure will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HST project will cause a net loss of the Important Farmland resource in the study area. In light of the net loss of the resource, the conversion of Important Farmlands land to non-agricultural use from the HST project cannot be mitigated to a less-than-significant level and this impact is therefore considered significant and unavoidable. Additional mitigation measures suggested by commenters are discussed in Section 6.6.

There would be no secondary impacts resulting from this mitigation measure. This mitigation measure would be effective given the nationwide and local success of farmland preservation programs using agricultural conservation easements and the experience of the DOC California Farmland Conservancy program. However, because the mitigation does not anticipate the creation of new farmland (e.g., conversion of natural lands to agriculture), the mitigation measure would not reduce impacts to less than significant.

The Authority finds that Mitigation Measure AG-MM #1 has been required in the project and that implementation of this measure would substantially reduce, but not completely avoid or mitigate the project's permanent conversion of existing uses to transportation use. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this significant adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.9.3 LU IMPACT #3 – Land Use Effects of Parking Demand at Station Sites

There are no existing parking facilities at the Kings/Tulare Regional Station–East, or in the vicinity of the proposed station. The Kings/Tulare Regional Station-East would change the pattern and intensity of the use of the land in order to meet the projected parking demand of the proposed station and would be incompatible with adjacent land uses. The presence of the station is likely to result in some unplanned changes in the use of existing adjacent land, and could indirectly contribute to changes that are incompatible with adjoining land uses. Therefore, the land use effect of the Kings/Tulare Regional Station-East would have a significant impact would be significant regardless of the amount of parking provided at the station.

AG-MM#1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Details regarding AG-MM#1 are described above.

There would be no secondary impacts resulting from this mitigation measure. This mitigation measure would be effective given the nationwide and local success of farmland preservation programs using agricultural conservation easements and the experience of the DOC California Farmland Conservancy program. Although implementation of AG-MM#1 will not avoid the significant impact of converting Important Farmland to HST project use, the Authority nevertheless finds that AG-MM#1 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that this mitigation measure will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HST project will cause a net loss of the Important Farmland resource in the study area. In light of the net loss of the resource, the conversion of Important Farmlands land to non-agricultural use from the HST project cannot be mitigated to a less-than-significant level and this impact is therefore considered significant and unavoidable.

The Authority finds that Mitigation Measure AG-MM #1 has been required in the project and that implementation of this measure would substantially reduce, but not completely avoid or mitigate the land use effects of parking demands at the Kings/Tulare Regional Station–East. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this significant adverse impact remains

significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.9.4 LU IMPACT #4 – Indirect Effects on Surrounding Land Uses from HST Station

The Kings/Tulare Regional Station-East could indirectly result in development of supporting uses, such as restaurants and rental car agencies, on adjacent lands to serve the traveling public. These changes to adjacent lands would be incompatible with their current land uses and designations. Therefore, the indirect land use impact would be significant.

AG-MM#1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Details regarding AG-MM#1 are described above.

There would be no secondary impacts resulting from this mitigation measure. This mitigation measure would be effective given the nationwide and local success of farmland preservation programs using agricultural conservation easements and the experience of the DOC California Farmland Conservancy program. Although implementation of AG-MM#1 will not avoid the significant impact of converting Important Farmland to HST project use, the Authority nevertheless finds that AG-MM#1 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that this mitigation measure will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HST project will cause a net loss of the Important Farmland resource in the study area. In light of the net loss of the resource, the conversion of Important Farmlands land to non-agricultural use from the HST project cannot be mitigated to a less-than-significant level and this impact is therefore considered significant and unavoidable.

The Authority finds that Mitigation Measure AG-MM #1 has been required in the project and that implementation of this measure would substantially reduce, but not completely avoid or mitigate the indirect effects on surrounding land uses from the Kings/Tulare Regional Station-East. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this significant adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.9.5 LU IMPACT #5 – Potential for Future Increased Density at HST Stations

Indirect changes to adjacent lands at the Kings/Tulare Regional Station-East would substantially change the pattern and intensity of land use in a way that would be incompatible with adjacent land uses. These changes to adjacent lands would be incompatible with their current land uses and designations. Therefore, the indirect land use impact would be significant.

AG-MM#1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. Details regarding AG-MM#1 are described above.

There would be no secondary impacts resulting from this mitigation measure. This mitigation measure would be effective given the nationwide and local success of farmland preservation programs using agricultural conservation easements and the experience of the DOC California Farmland Conservancy program. Although implementation of AG-MM#1 will not avoid the significant impact of converting Important Farmland to HST project use, the Authority nevertheless finds that AG-MM#1 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that this mitigation measure will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HST project will cause a net loss of the Important Farmland resource in the study area. In light of the net loss of the resource, the conversion of Important Farmlands land to non-agricultural use from the HST project cannot be mitigated to a less-than-significant level and this impact is therefore considered significant and unavoidable.

The Authority finds that Mitigation Measure AG-MM #1 has been required in the project and that implementation of this measure would substantially reduce, but not completely avoid or mitigate the potential land use effects associated with potential for future increased density and TOD development at the Kings/Tulare Regional Station–East. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this significant adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.10 Agricultural Lands (Chapter 3.14 of the Final EIR/EIS)

3.10.1 AG IMPACT #4 - Permanent Conversion of Agricultural Land to Nonagricultural Use

The Preferred Alternative would permanently convert approximately 3472 acres of Important Farmland to non-agricultural use to construct HST infrastructure and ancillary facilities. Important Farmland includes farmland classified as prime, unique, statewide important, and locally important as shown on maps prepared for the Department of Conservation's Farmland Mapping and Monitoring Program. Included within this acreage are remnant parcels identified to be unlikely to continue to support agricultural use due to their size, shape, access, location, or other factors. The permanent conversion of Important Farmland to non-agricultural use is a significant impact.

The following measure mitigates this impact:

AG-MM #1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. The Authority has entered into an agreement with the DOC California Farmland Conservancy Program to implement its agricultural land mitigation for the HST project in the Merced to Fresno and Fresno to Bakersfield sections. The Authority will fund the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers in the Fresno to Bakersfield section. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio

of not less than 1:1 for lands that are permanently converted to agricultural use by the project. In addition, the Authority will provide an additional increment of Important Farmland mitigation acreage, above the 1:1 minimum ratio, at a level consistent with the terms of a settlement agreement the Authority reached with agricultural interests in *County of Madera, et al. v. California High-Speed Rail Authority*. This approach will provide consistency in calculating the total amount of acres of agricultural conservation easements across the Central Valley.

The California Farmland Conservancy Program will work with local, regional, or statewide entities whose purpose includes the acquisition and stewardship of agricultural conservation easements. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements. These will include, but are not limited to, provisions to ensure that the easements will conform to the requirements of Public Resources Code Section 10252 and to prioritize the acquisition of willing seller easements on lands that are adjacent to other protected agricultural lands or that would support the establishment of greenbelts and urban separators.

Although implementation of AG-MM#1 will not avoid the significant impact of converting Important Farmland to HST project use, the Authority nevertheless finds that AG-MM#1 will substantially lessen this impact by providing compensation in the form of permanently preserved Important Farmlands that otherwise may be converted to non-agricultural use. The Authority further finds that this mitigation measure will be effectively implemented based on the strong record of success by the Department of Conservation California Farmland Conservancy Program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. The Authority finds, however, that because Important Farmland is not a renewable resource, and the creation of new Important Farmland is not feasible, the HST project will cause a net loss of the Important Farmland resource in the South San Joaquin Valley, which is the State's leading agricultural production region. In light of the net loss of the Important Farmland resource, the Authority finds that the conversion of Important Farmlands land to non-agricultural use from the HST Project cannot be mitigated to a less-than-significant level. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.10.2 AG IMPACT#6 - Effects on Land under Williamson Act or FSZ Contracts, Local Zoning, or Conservation Easement Lands

The Preferred Alternative will affect land currently under Williamson Act contracts and Farmland Security Zone contracts. Specifically, the Authority will acquire right of way needed for HST facilities, and in the process it may split a parcel of land that is currently under a Williamson Act or FSZ contract in a manner that leaves the private property owner with a privately owned remainder parcel that may be physically farmable, but is now smaller than the minimum qualifying size under County rules for Williamson Act and FSZ tax benefits. The Final EIR conservatively identifies the potential for the Preferred Alternative to cause land (including Important Farmland) currently under a Williamson Act or FSZ contract to no longer qualify for the tax benefits, and to potentially be converted to non-agricultural use, as a significant impact under CEQA. For the Preferred Alternative, there is a possible conversion of 333 acres of Williamson Act contracted land, and 14 acres of FSZ contracted land, not all of which is Important Farmland.

The following measure mitigates this impact:

AG-MM #1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland.

The Authority has entered into an agreement with the DOC California Farmland Conservancy Program to implement its agricultural land mitigation for the HST project in the Merced to Fresno and Fresno to Bakersfield sections. The Authority will fund the California Farmland Conservancy Program's work to identify suitable agricultural land for mitigation of impacts and to fund the purchase of agricultural conservation easements from willing sellers in the Fresno to Bakersfield section. The performance standards for this measure are to preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands, within the same agricultural regions as the impacts occur, at a replacement ratio of not less than 1:1 for lands that are permanently converted to agricultural use by the project. In addition, the Authority will provide an additional increment of Important Farmland mitigation acreage, above the 1:1 minimum ratio, at a level consistent with the terms of a settlement agreement the Authority reached with agricultural interests in *County of Madera, et al. v. California High-Speed Rail Authority*. This approach will provide consistency in calculating the total amount of acres of agricultural conservation easements across the Central Valley.

The California Farmland Conservancy Program will work with local, regional, or statewide entities whose purpose includes the acquisition and stewardship of agricultural conservation easements. The Authority and California Farmland Conservancy Program will develop selection criteria under this agreement to guide the pursuit and purchase of conservation easements. These will include, but are not limited to, provisions to ensure that the easements will conform to the requirements of Public Resources Code Section 10252 and to prioritize the acquisition of willing seller easements on lands that are adjacent to other protected agricultural lands or that would support the establishment of greenbelts and urban separators.

The Authority finds that this mitigation measure has been required in the project and that it will permanently protect more than 3472 acres of Important Farmland from conversion to a non-agricultural use, whereas AG-Impact# 6 has the potential to remove 333 acres of land under Williamson Act contracts and 14 acres of land under FSZ contracts from temporary protections provided by tax benefits. The Authority thus finds that AG-MM#1 provides ten times more permanently protected acres of Important Farmland than land that may lose temporary protection under Williamson Act and FSZ contracts. The Authority also finds that AG-MM#1 will be effectively implemented based on the strong record of success by the DOC California Farmland Conservancy program in securing agricultural conservation easements in the Central Valley, as well as the success of other farmland preservation programs in the Central Valley. Based on the magnitude of permanently preserved acres of Important Farmland under AG-MM#1 relative to the number of acres that potentially could lose Williamson Act and FSZ contract tax benefits, and based on the fact that of those lands, not all are Important Farmland, the Authority finds that this impact is substantially lessened and reduced to a less than significant level.

The Authority further finds that Fresno, Kings, Tulare, and Kern counties have both jurisdiction over and procedures in place to allow for a variance in minimum parcel size for Williamson Act and FSZ contracts, depending on the size of the remainder parcel and its proximity to other parcels the owner may have under a separate contract, that has the potential to further minimize the significant impact of additional agricultural land conversion. The Authority finds that these counties can and should allow for landowners to apply for and receive a variance to maintain Williamson Act and FSZ contracts where the remainder parcel size falls below the county minimum and above the state's minimum parcel size, but would otherwise qualify for a variance under each county's procedures and rules.

3.11 Parks, Recreation, and Open Space (Section 3.15 in the Final EIR/EIS)

3.11.1 PK IMPACT #1 – Common Aesthetic and Visual Quality Construction Impacts on Parks, Recreation, Open-Space Impacts, and School District Recreation Facilities

Construction of the Preferred Alternative north of 7th Standard Road could cause visual degradation in areas adjacent to parks, recreational areas, open space areas, and school district recreation facilities.

The following measures mitigate this impact:

AVR-MM#1a Minimize Visual Disruption from Construction Activities. The project will adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:

- Minimize pre-construction clearing to that necessary for construction.
- Limit the removal of buildings to those that would obstruct project components.
- When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views.
- After construction, regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and types to that which was removed based upon local jurisdictional requirements. If there are no local jurisdictional requirements, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage similar to the coverage provided by the trees that were removed for construction.
- To the extent feasible, do not locate construction staging sites within the immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days.

AVR-MM#1b: Minimize Light Disturbance during Construction. Where construction lighting will be required during nighttime construction, the contractor will be required to shield such lighting and direct it downward in such a manner that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spillage offsite.

There would be no secondary impacts resulting from this mitigation measure. Although the visual degradation during construction would be more noticeable in urban areas adjacent to residences and parkways, the construction activities are considered temporary as they would cease after completion. Implementation of AVR-MM#1b would substantially lessen or avoid impacts associated with the use of nighttime lighting during construction by reducing the amount of nighttime lighting emitted by construction sites and avoiding off-site light spillage visible to viewers. The Authority finds that Mitigation Measures AVR-MM#1a and AVR-MM#1b have been

required in the project and that implementation of Mitigation Measure AVR-MM#1a will substantially lessen or avoid impacts associated with the visual disturbance during construction, and that implementation of Mitigation Measure AVR-MM#1b will substantially reduce the amount of nighttime lighting emitted; therefore these impacts are less than significant.

3.12 Aesthetics and Visual Resources (Section 3.16 in the Final EIR/EIS)

3.12.1 AVR IMPACT #2 –Construction Impact on Existing Visual Quality

Clearing, earthmoving, and erection of project facilities would introduce new lines, forms, and colors that would typically contrast with the existing landscape forms and patterns in urban and rural areas causing a decrease in the visual unity and intactness of most existing views. This would be most noticeable in rural areas where largely pastoral scenes would be disturbed by intensive construction activities, causing a reduction in the visual quality of landscapes by one to two levels of visual quality depending on the setting. Most construction activities would cease within 1 to 2 years at any given location. The exception to this would be concrete batch plants used to fabricate project components and some construction laydown areas that would be used for up to 5 years. Because construction could reduce the visual quality category of a landscape by one or two levels, depending upon the setting and viewer sensitivity would often be moderate or, in some cases, high, the effect of project construction on existing visual quality is significant.

AVR-MM#1a Minimize Visual Disruption from Construction Activities. The project will adhere to local jurisdiction construction requirements (if applicable) regarding construction-related visual/aesthetic disruption. In order to minimize visual disruption, construction will employ the following activities:

- Minimize pre-construction clearing to that necessary for construction.
- Limit the removal of buildings to those that would obstruct project components.
- When possible, preserve existing vegetation, particularly vegetation along the edge of construction areas that may help screen views.
- After construction, regrade areas disturbed by construction, staging, and storage to original contours and revegetate with plant material similar in replacement numbers and types to that which was removed based upon local jurisdictional requirements. If there are no local jurisdictional requirements, replace removed vegetation at a 1:1 replacement ratio for shrubs and small trees, and 2:1 replacement ratio for mature trees. For example, if 10 mature trees in an area are removed, replant 20 younger trees that after 5 to 15 years (depending upon the growth rates of the trees) would provide coverage similar to the coverage provided by the trees that were removed for construction.
- To the extent feasible, do not locate construction staging sites within the immediate foreground distance (0 to 500 feet) of existing residential, recreational, or other high-sensitivity receptors. Where such siting is unavoidable, staging sites will be screened from sensitive receptors using appropriate solid screening materials such as temporary fencing and walls. Any graffiti or visual defacement of temporary fencing and walls will be painted over or removed within 5 business days.

Implementation of this mitigation measure is not expected to result in secondary impacts.

Although the visual degradation during construction would be more noticeable in urban areas adjacent to residences and parkways, particularly the Fresno downtown area, the construction activities are considered temporary as they would cease after completion.

The Authority finds that Mitigation Measure AVR-MM#1a has been required in the project and that implementation of this mitigation measure will substantially lessen or avoid impacts associated with the visual disturbance during construction; this impact will be reduced to less than significant.

3.12.2 AVR IMPACT #3 –Construction Impacts from Light and Glare

Project construction would create new sources of light and glare that may temporarily affect nighttime views. Lighting associated with nighttime construction would increase ambient light, which may adversely affect nighttime views. This may be an annoyance in urban areas, such as Fresno, Wasco, and Shafter; it may also be an annoyance in rural residential areas along all of the HST alignment. Construction would not occur at night at all times; therefore, this impact would be intermittent over the construction period. Construction at any given location would typically last 1 to 2 years, although construction activities at concrete batch plants and some construction laydown areas would last for up to 5 years. Because construction light and glare could be an annoyance to viewers particularly in rural areas, reducing the visual quality category of a landscape by one level, depending upon the setting, and because viewer sensitivity would often be moderate or, in some cases, high, the impact would be significant.

AVR-MM#1b: Minimize Light Disturbance during Construction. Where construction lighting will be required during nighttime construction, the contractor will be required to shield such lighting and direct it downward in such a manner that the light source is not visible off-site, and so that the light does not fall outside the boundaries of the project site to avoid light spill offsite.

Implementation of this mitigation measure is not expected to result in secondary impacts.

The Authority finds that Mitigation Measure AVR-MM #1b has been required in the project and that implementation of AVR-MM #1b will substantially lessen or avoid impacts associated with the use of nighttime lighting during construction this impact would be reduced to a less-than-significant impact.

3.12.3 AVR IMPACT #4 – Lower Visual Quality in the Rural Valley/Agricultural Landscape Unit

As described in Section 3.16.4 of the Final EIR/EIS, the San Joaquin Valley Rural/Agricultural Landscape Unit makes up the great majority of the project. Panoramic views toward the Sierra Nevada are among the aesthetic and visual resources present throughout the Central Valley. Other natural aesthetic amenities in the area include vast areas comprising a mix of orchards and open field crops. The operation of the HST would result in permanent changes to the visual quality in this landscape. These visual changes would occur through new features introduced in the environment, including the HST elevated guideways, guideway support columns, contact power system, bridges and roadway grade separations, and a variety of HST infrastructure, such as traction power substations, HST alignment fencing, required sound walls up to 14 feet high in some locations, and the HST itself. These features would be incompatible and out of scale with the existing visual character in many locations in the Rural Valley/Agricultural Landscape Unit to rural residents, the only viewer group identified with both high viewer sensitivity and exposure to the HST project in the San Joaquin Valley/Agricultural Landscape Unit. These viewers would experience a decline in visual quality of one to two levels in areas where scenes do not include agro-industrial facilities. This reduction in visual quality would be experienced by rural residents

for a distance of 0.25 mile where the HST is at-grade and 0.5 mile where the HST is elevated. Rural residents abutting the Kings/Tulare Regional Station—East would also experience a significant decline in visual quality.

AVR-MM#2a: Incorporate Design Criteria for Elevated Elements That Can Adapt to Local Context.

During final design of the elevated guideways and the Kings/Tulare Regional stations, the Authority will coordinate with local jurisdictions on the design of these facilities so that they are designed appropriately to fit in with the visual context of the areas near them. This will include the following activities:

- For stations: During the station design process, establish a local consultation process with the cities and communities surrounding the Kings/Tulare Regional Station, as necessary, to identify and integrate local design features into the station design through a collaborative, context-sensitive solutions approach. The process will include activities to solicit community input in their respective station areas. This effort will be coordinated with the station area planning process that will be undertaken by those cities under their station area planning grants.
- For elevated guideways in unincorporated communities: During the elevated guideway design process, establish a process with the city or county with jurisdiction over the land along the elevated guideway to advance the final design through a collaborative, context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements that are to be incorporated into the final guideway designs. The process will include activities to solicit community input in the affected neighborhoods.

Actions taken to help achieve integration with the local design context during the context-sensitive solutions process will include the following:

- Design HST stations and associated structures such as elevators, escalators, and walkways to be attractive architectural elements or features that add visual interest to the streetscapes near them.
- Design HST station parking structures and adjacent areas to integrate visually into the areas where they would be located. Where the city has adopted applicable downtown design guidelines, the parking structures and adjacent areas will be designed to be compatible with the policies and principles of those guidelines.
- For the elevated guideways and columns, incorporate architectural elements, such as graceful curved or tapered sculptural forms and decorative surfaces, to provide visual interest. Include decorative texture treatments on large-scale concrete surfaces such as parapets and other portions of elevated guideways. Include a variety of texture, shadow lines, and other surface articulation to add visual and thematic interest. Closely coordinate the design of guideway columns and parapets with station and platform architecture to promote unity and coherence where guideways lie adjacent to stations.
- Integrate trees and landscaping into the station streetscape and plaza plans where possible to soften and buffer the appearance of guideways, columns, and elevated stations. This will be consistent with the principles of crime prevention through environmental design.
- For the stations, structures, and related open spaces: incorporate design features that provide interest and reflect the local design context. These features could include landscaping, lighting, and public art.

The designs in cities and unincorporated communities will reflect the results of the context-sensitive solutions design process. During the context-sensitive solutions design process, the HST project's obligations and constraints related to planning, mitigation, engineering, performance, funding, and operational requirements will be taken into consideration.

AVR-MM#2b: Integrate Elevated Guideway into Affected Cities, Parks, and Trail Designs. During development of the final design, the Authority will work with the affected cities and counties to develop a project site and landscape design plan for the areas disturbed by the project. As a result of following these plans, the design features identified in AVR-MM#2a and the park mitigation measure PK-MM#3 will be implemented.

AVR-MM#2c: Screen At-Grade and Elevated Guideways Adjacent to Residential Areas. Consistent with the design features developed under AVR-MM#2a, the Authority will plant trees along the edges of the rights-of-way in locations adjacent to residential areas. This will help reduce the visual contrast between the elevated guideway and the residential area. The species of trees to be installed will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The crowns of trees used should ultimately be tall enough so that upon maturity they will partially, or fully, block or screen views of the elevated guideway from adjacent at-grade areas. Trees should allow ground-level views under the crowns (with pruning if necessary) while not interfering with the 15-foot clearance requirement for the guideway. The trees will be continuously maintained and appropriate irrigation systems will be installed within the tree planting areas.

AVR-MM#2d: Replant Unused Portions of Lands Acquired for the HST. After construction is complete, the Authority will plant vegetation within lands acquired for the project (e.g., shifting roadways) that are not used for the HST or related supporting infrastructure. Plantings will allow adequate space between the vegetation and the HST alignment and catenary lines. All street trees and other visually important vegetation removed in these areas during construction will be replaced with similar vegetation that, upon maturity, will be similar in size and character to the removed vegetation. The Authority will ensure that vegetation will be continuously maintained and appropriate irrigation systems will be installed within the planting areas. The Authority will ensure that landscaped areas will be continuously maintained and appropriate irrigation systems will be installed. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted.

AVR-MM#2e: Provide Offsite Landscape Screening Where Appropriate. Where onsite landscape screening measures as described under AVR-MM#2d cannot provide effective screening to significantly affected high-sensitivity receptors such as nearby rural residential areas, provide offsite screening, as appropriate, if desired by affected residential owners.

AVR-MM#2f: Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST. Upon the completion of construction, the Authority will plant the surface of the ground supporting the overpasses (slope-fill overpasses) and retained fill elements with vegetation consistent with the surrounding landscape in terms of vegetative type, color, texture, and form. During final design, the Authority will consult with the affected cities and counties regarding the landscaping program for planting the slopes of the overcrossings and retained fill. Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed if needed. Where wall structures supporting the overpasses or retained fill are proposed, the structure will employ architectural details and low-maintenance trees and other vegetation to screen the structure, minimize graffiti, and reduce the effects of large walls. Surface coatings will be applied on wood and concrete to

facilitate cleaning and the removal of graffiti. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable time after notification.

AVR-MM#2g: Provide Sound Barrier Treatments. The Authority will design a range of sound barrier treatments for visually sensitive areas, such as those where residential views of open landscaped areas would change or in areas where sound barriers would adversely affect the existing character and setting (see the description of sound barriers in Table 3.16-2 in the Final EIR/EIS). The Authority will develop the treatments during final design and integrate them into the final project design. The treatments will include, but are not limited to, the following:

- Sound barriers along elevated guideways may incorporate transparent materials where sensitive views would be adversely affected by solid sound barriers.
- Sound barriers will use non-reflective materials and will be of a neutral color.
- Surface design enhancements and vegetation appropriate to the visual context of the area will be installed with the sound barriers. Vegetation will be installed consistent with the provisions of AVR-MM#2f. Surface enhancements will be consistent with the design features developed under AVR-MM#2a, and will include architectural elements (i.e., stamped pattern, surface articulation, and decorative texture treatment as determined acceptable to the local jurisdiction. Surface coatings will be used on wood and concrete sound barriers to facilitate cleaning and the removal of graffiti.

AVR-MM#2h: Screen Traction Power Distribution Facilities. Upon completion of station construction, the Authority will screen the traction power distribution facilities, including substations (located at approximately 30-mile intervals along the Preferred Alternative) and radio communications towers, from public view through the use of landscaping or solid walls/fences. This will consist of context-appropriate landscaping of a type and scale that does not draw attention to the station. Plant species will be selected on the basis of their mature size and shape, growth rate, hardiness, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed within the landscaped areas. Walls will be constructed of cinder-block or similar material and will be painted a neutral color to blend in with the surrounding context. If a chain-link or cyclone fence is used, it will include wood slats in the fencing. Any graffiti or visual defacement or damage of fencing and walls will be painted over or repaired within a reasonable period as agreed between the Authority and local jurisdiction.

None of the mitigation measure options is expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds Mitigation Measures AVR-MM#2a, AVR-MM#2b, AVR-MM#2c, AVR-MM#2d, AVR-MM#2e, AVR-MM#2f, AVR-MM#2g, and AVR-MM#2h have been required in the project and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within rural areas. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.12.4 AVR IMPACT #4 – Lower Visual Quality in the Wasco and Shafter Landscape Units

The presence of at-grade and elevated structures, HSTs, road overcrossings, or other prominent project features would substantially impact the existing visual character and quality of the site and its surroundings. The substantial degradation of existing visual quality in the Wasco and Shafter Landscape Units is considered a significant impact. The HST would degrade visual quality and character by blocking views, changing the views and landscape, and therefore would be a significant impact. Notably, visual impacts in the town of Corcoran would be avoided by the Corcoran Bypass alignment, which is part of the Preferred Alternative (Final EIR/EIS, p. 3.16-146; see also Final EIR/EIS, Table 3.16-4).

AVR-MM#2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context. Details regarding AVR-MM#2a are described above.

AVR-MM#2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. Details regarding AVR-MM#2b are described above.

AVR-MM#2c: Screen At-Grade and Elevated Guideways Adjacent to Residential Areas. Details regarding AVR-MM#2c are described above.

AVR-MM#2d: Replant Unused Portions of Lands Acquired for the HST. Details regarding AVR-MM#2d are described above.

AVR-MM#2e: Provide Offsite Landscape Screening Where Appropriate. Details regarding AVR-MM#2e are described above.

AVR-MM#2f: Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST. Details regarding AVR-MM#2f are described above.

AVR-MM#2g: Provide Sound Barrier Treatments. Details regarding AVR-MM#2g are described above.

AVR-MM#2h: Screen Traction Power Distribution Facilities. Details regarding AVR-MM#2h are described above.

None of the mitigation measure options is expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

The Authority finds that Mitigation Measures AVR-MM#2c, AVR-MM#2d, AVR-MM#2e, AVR-MM#2f, AVR-MM#2g, and AVR-MM#2h, have been required in the project and that implementation of these measures would reduce, but not completely avoid or substantially lessen the permanent impacts on the views, visual character, and visual quality within the Wasco and Shafter landscape units. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.12.5 AVR-IMPACT #4 – Traction Power Distribution Facilities Would Alter Visual Character or Block Views

The Preferred Alternative north of 7th Standard Road would require the placement of Traction Power Distribution Facilities of varying sizes at intervals along the alignment, which would potentially alter the visual character of adjacent lands and/or block views toward areas beyond the alignment.

The substantial degradation of existing visual quality or character of the site and its surroundings is considered a significant impact. The traction power distribution facilities would degrade visual quality and character by blocking views, changing the views and landscape, and therefore would be a significant impact.

AVR-MM#2h: Screen Traction Power Distribution Facilities. Details regarding AVR-MM#2h are described above.

Depending on the size and location of the traction power distribution stations, there could be impacts with substantial impacts. However, these facilities are located distant from sensitive viewers or can be screened such that over time they become integrated into the landscape. Where appropriate, stations would be screened from public view by landscaping and a wall or fence.

The Authority finds that Mitigation Measure AVR-MM #2h is required in the project and that implementation of AVR-MM #2h will substantially lessen or avoid impacts associated with the traction power distribution facilities; therefore, this impact will be reduced to less than significant.

3.12.6 AVR IMPACT #4 – Sound Barriers Would Lower Visual Quality or Block Views

The Preferred Alternative would require the use of sound barriers along portions of the guideway in urbanized areas, potentially lowering visual quality and/or blocking existing views, depending on the barrier location and materials.

The substantial degradation of existing visual quality or character of the site and its surroundings is considered a significant impact. The sound barriers would degrade visual quality and character by blocking views, changing the views and landscape, and therefore would be a significant impact.

AVR-MM#2a: Incorporate Design Criteria for Elevated and Station Elements That Can Adapt to Local Context. Details regarding AVR-MM#2a are described above.

AVR-MM#2b: Integrate Elevated Guideway into Affected Cities, Parks, Trail, and Urban Core Designs. Details regarding AVR-MM#2b are described above.

AVR-MM#2c: Screen At-Grade and Elevated Guideways Adjacent to Residential Areas. Details regarding AVR-MM#2c are described above.

AVR-MM#2d: Replant Unused Portions of Lands Acquired for the HST. Details regarding AVR-MM#2d are described above.

AVR-MM#2e: Provide Offsite Landscape Screening Where Appropriate. Details regarding AVR-MM#2e are described above.

AVR-MM#2f: Landscape Treatments along the HST Project Overcrossings and Retained Fill Elements of the HST. Details regarding AVR-MM#2f are described above.

AVR-MM#2g: Provide Sound Barrier Treatments. Details regarding AV-MM#2g are described above.

None of the mitigation measure options is expected to result in secondary effects. The mitigation measures are typical of visual treatments applied on linear transportation facilities; they have been defined to be specific in range and implementable according to context, and designed in coordination with local jurisdictions.

Mitigation Measure AVR-MM#2g requires the Authority to design a range of sound barrier treatments for visually sensitive areas. This mitigation measure will be implemented in conjunction with Mitigation Measure N&V-MM#3, which has been adopted to mitigate the project's noise impacts, although not every operational noise impact can be reduced to less-than-significant levels. Mitigation Measure N&V-MM#3 requires the Authority to work with the communities to determine the height of the sound barriers based on jointly developed performance criteria. To minimize visual impacts of the sound barriers, the barriers could be combined with sound insulation or higher noise thresholds than the FRA's current noise thresholds could be accepted. In other words, implementation of mitigation measures AVR-MM#2g and N&V-MM#3 may involve a trade-off between reducing visual impacts and reducing noise impacts, depending on input received from the community.

The Authority finds that Mitigation Measures AVR-MM#2a, AVR-MM#2b, AVR-MM#2c, AVR-MM#2d, AVR-MM#2e, AVR-MM#2f, and AVR-MM#2g have been required in the project and that implementation of this measure will reduce, but not completely avoid or substantially lessen the visual impacts of sound barriers. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-significant level. To the extent that this significant adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

3.13 Cultural and Paleontological Resources (Section 3.17 in the Final EIR/EIS)

This section sets forth the Authority's CEQA findings concerning the impacts of the Preferred Alternative north of 7th Standard Road on cultural and paleontological resources. Because the project is also a federal undertaking, the project is subject to NEPA and Section 106 of the National Historic Preservation Act (NHPA), which provides considerable protection for cultural resources. The development of the management documents and treatment plans pursuant to Section 106 regulations involve extensive impact analysis, project re-design, consultation with Native Americans, and other consultation with agencies to develop a plan that provides for the best possible preservation planning and other mitigation measures for the resource present at the project site. As described below, the Section 106 process is a separate, but complementary, method for protection for cultural resources, distinct from CEQA.

As explained in the Final EIR/EIS, a Programmatic Agreement (PA) to satisfy the requirements of Section 106 for the project has been signed by the FRA, the Authority, the ACHP, the SHPO, and consulting parties. The PA provides an overall regulatory framework for conducting the Section 106 process throughout the HST System and the documentation process for the Fresno to Bakersfield Section was conducted in accordance with the PA.

The PA also presents the approach for treatment of historic properties, including development of a Memorandum of Agreement (MOA) for each HST section to address the resolution of adverse effects on historic properties, defined as those cultural objects, sites, or districts that meet the

eligibility criteria for listing in the National Register of Historic Places.⁸ The MOA stipulates the treatment measures that will be applied for cultural resources impacted by the project and calls for the development of two treatment plans: an Archaeological Treatment Plan (ATP) and a Built Environment Treatment Plan (BETP). The ATP and BETP will set forth a prescriptive process by which these treatment measures will be applied to each known resource and will outline measures for the phased identification of historic properties as additional parcel access is obtained and design work is completed. The MOA and treatment plans provide specific performance standards that ensure each impact will be avoided, minimized, or mitigated to the extent possible and provide enforceable performance standards to follow the NRHP and the Secretary of Interior's (SOI's) standards and guidelines when implementing the mitigation measures (see Stipulations III and VIII in the PA, Appendix 3.17-A.) The Treatment Plans will conform to the principles of the Advisory Council on Historic Preservation's Treatment handbook, as well as SHPO Guidelines. These treatment plans dictate how the requirements of Section 106 will be met and also include the mitigation measure requirements.

3.13.1 CUL IMPACT #1 - Potential Adverse Effects on Archaeological Resources Caused by Construction Activities

As explained in the Revised DEIR/Supplemental DEIS, there are generally no known archeological sites that qualify as historical resources or unique archaeological resources are in the project study area. However, there is one recorded site, CA-TUL-473, which would be affected by the Allensworth Bypass alignment. This site is described as a "sparse scatter of lithic debitage and artifacts spread over a plowed field." Given the proximity of this site to Tulare Lake, it was probably a large site that has been disturbed and re-deposited over a large area. Due to the amount of re-deposition or spreading the site has experienced, no intact or discrete deposit at this location is currently recorded. The site area is currently the location of bermed holding ponds that are flooded as part of Alpaugh Irrigation District activities. Legal access to the parcel has not yet been obtained so there is currently insufficient information available to determine whether the site is eligible for the NRHP, or hence the CRHR, until additional testing is conducted at the site. As a result, and as part of the overall Section 106 responsibilities directed by the PA, and the MOA, additional surveys and potential testing will take place at the location of CA-TUL-473 and vicinity. Once more data are available, a more comprehensive evaluation of the site's integrity and importance will be determined as prescribed by in the PA and described below under the Mitigation Measures Cul-MM#1 through CUL-MM#5.

In addition, unknown or unrecorded archaeological resources, including subsurface buried archaeological deposits, may exist, but are currently unknown. Construction activities related to ground disturbance in some areas could contain such unknown resources. Unknown resources could also exist in areas where field surveys could not be conducted because permission to enter (PTE) was not granted. As such, construction of the HST could result in possible adverse effects on unknown archaeological deposits from ground-disturbing construction operations associated with the project, or in areas where PTE 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. Although the MOA for the Fresno to Bakersfield Section establishes mitigation measures to be implemented before, during, and after construction to ensure that construction activities would avoid and minimize these adverse effects or changes, to the extent possible, these operations

⁸ The California Register of Historical Resources (CRHR) is derived from the federal process; a resource considered eligible for the NRHP is assumed eligible for the CRHR. The criteria for listing are similar to those of NRHP.

would likely cause substantial adverse changes in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5 and is therefore considered a potentially significant impact.

Cul-MM#1: Complete Inventory for Archaeological Resources and Comply with the Stipulations Regarding the Treatment of Archaeological Resources in the PA and MOA.

The Authority will complete the following management steps for currently inaccessible areas once permission to enter has been obtained:

- The Authority will complete an inventory and evaluation report for archaeological resources.
- This work will be led or supervised by cultural resources specialists who meet the SOI's professional qualification standards provided in 36 C.F.R. Part 61.
- All newly identified resources will be mapped and described on Department of Parks and Recreation (DPR) forms, which have been established to map cultural resources. Mapping will be completed by recording data with global position system (GPS) hardware through which data can be imported and managed in Geographic Information Systems. Mapping of previously identified resources will be limited to updates of existing records where necessary to describe the current boundaries of the resource and any change in condition that has occurred after the first recordation.
- The Authority will evaluate the eligibility of identified archaeological and built environment resources for listing on the CRHR.
- Under delegated authority provided in the PA and MOA, the Authority, in consultation with the FRA, will also evaluate identified archaeological resources for the NRHP.
- For archaeological resources that are NRHP-eligible, the Authority, in consultation with the FRA, will assess the potential for adverse effects within the meaning of 36 C.F.R. Part 800.5(a)(1). For CRHR-eligible resources, the Authority will assess the potential for significant impacts by applying the criteria in CEQA Guidelines 15064.5(b).
- 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 will be considered in the order of priority provided in CEQA Guidelines Section 15126.4(b)(3). If data recovery is the only feasible treatment, the Authority will adopt a data recovery plan as required under CEQA Guidelines Section 15126.4(b)(3)(C).
- In addition to completion of inventory and evaluation for the larger project, the Authority will evaluate all existing cultural resources on compensatory mitigation sites. If any currently known archaeological sites on the compensatory mitigation sites are CRHR-eligible, they will be preserved in place. The Authority will prepare additional CEQA documentation describing the CRHR eligibility of all archaeological resources on compensatory mitigation sites. This documentation will comply with the requirements of CEQA Guidelines Sections 15162 through 15164.
- For archaeological resources, the Authority will also determine if the resource is a unique archaeological site. If the resource is not an historical resource but is an archaeological site, the resource will be treated as required in California Public Resources Code 21083.2.

Cul-MM#2: Conduct Archaeological Training. Before the start of ground-disturbing activities within the APE, a qualified professional archaeologist who meets the SOI Standards for Archaeology will develop a training program and printed material to be presented to construction personnel. The purpose of this training and accompanying materials will be to familiarize

construction personnel with the relevant legal (Section 106/NEPA/CEQA) context for cultural resources of the project and with the types of cultural sites, features, and artifacts that could be uncovered during construction activities. These training sessions will be conducted before commencing construction within the Area of Potential Effect (APE) and will be repeated as needed as construction crews and supervisors change.

Cul-MM#3: Conduct Archeological Monitoring in Areas of Sensitivity, Halt Work in the Event of an Archaeological Discovery. Prior to ground-disturbing construction the Authority will include a monitoring plan in the contract conditions of the construction contractor, identifying the following steps to be taken in the event of the inadvertent discovery of cultural resources.

- An archaeological monitor will be present to observe construction at geographic locations that are sensitive for unidentified cultural resources. Such locations may consist of construction areas near identified cultural resources where ground-disturbing construction will occur in proximity to major water features, or in other areas of identified sensitivity based on inventory work to be completed when permission to enter is granted.
- In the event of an archaeological resource discovery, work will cease 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. A qualified archaeologist will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. These steps shall 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 the resource is an historical resource (eligible for the CRHR) and an archaeological resource 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 mitigation, the Authority will adopt a data recovery plan as required under CEQA Guidelines § 15126.4(b)(3)(C).

The California State Lands Commission (CSLC) will be notified 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. The Authority will also comply with the PA. Performance tracking of this mitigation measure is based upon successful implementation and approval of the documentation by the SHPO and appropriate consulting parties.

The mitigation measures described above and provided in the Archaeological Treatment Plan (ATP) are consistent with best practices within the professional archaeological community and are commensurate with mitigation measures for similar scale transportation projects. They have proven to be effective in achieving the stewardship goals of Section 106 and CEQA review. Performance tracking of this mitigation measure is based upon successful implementation and approval of the documentation by the SHPO and appropriate consulting parties.

CUL-MM#4: Comply with State and Federal Law for Human Remains. Discoveries of human remains on private and state agency lands in California are governed by California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98. Native American remains discovered on federal lands are governed by the Native American Graves Protection and Repatriation Act (NAGPRA) (25 US Code Section 3001).

Pursuant to Stipulation XIII of the PA, if human remains are discovered on state-owned or private lands the Authority 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 Native

American Heritage Commission (NAHC) to identify the appropriate Native American tribal representative to consult with about the disposition of the remains and any funerary objects.

If human remains are part of an archaeological site the Authority shall, in consultation with the Native American tribal representatives and other stakeholders, 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 stakeholders, the Authority may conduct scientific analysis on the human remains if called for under a data recovery plan and amenable to all stakeholders. California and the Authority will work with the most likely descendant, 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 approval of the documentation by the SHPO and appropriate consulting parties.

Cul-MM#5: Conduct Additional Testing and Data Recovery for CA-TUL-473

Additional inventory and evaluation is needed CA-TUL-473, a sparse scatter of lithic debitage and artifacts spread over a plowed field. The general vicinity of the site is located in a sensitive archaeological region given the proximity to Tulare Lake and the abundant resources the lake likely provided in prehistory. The site area is currently the location of bermed holding ponds that are flooded as part of Alpaugh Irrigation District activities, and as a result it was probably a large site that has been disturbed and re-deposited over a large area. Due to the amount of re-deposition or spreading the site has experienced, no intact or discrete deposit at this location was recorded. Due to lack of access there was not enough information available to determine whether the site is eligible for the NRHP or the CRHR. Therefore, an archaeological testing program will be implemented to help identify whether substantial archaeological deposits exist within the APE at the recorded location of CA-TUL-473 when access to the parcel is obtained.

When access to the parcel is obtained, surveys and evaluative testing for CA-TUL-473 is required in order to assess the site's integrity and significance. Work will include a thorough pedestrian survey of the site followed by the excavation of surface transect units across the site. This work will include a combined program of auguring, trenching, and surface transect units to be placed throughout the site boundaries.

Should the testing determine that intact deposits are present at the recorded location of CA-TUL-473, work will include controlled excavation of areas with indications of intact subsurface deposits and the site will be evaluated for significance in accordance with the procedures outlined in the ATP. If the deposits are found significant under Section 106 and CEQA, additional provisions found in the ATP for data recovery will be followed if avoidance is determined to be infeasible.

None of the mitigation measure options is expected to result in secondary effects.

The Authority finds that Mitigation Measures CUL-MM#1, CUL-MM#2, CUL-MM#3, CUL-MM#4 and CUL-MM#5 have been required in the project and that implementation of these measures will reduce construction impacts on archaeological resources to less than significant even if data recovery is the only feasible mitigation.

3.13.2 CUL IMPACT #2 – Potential Adverse Effects on Historic Architectural Resources due to Construction Activities

Construction activities that may cause impacts on historic architectural resources can include excavation, staging, heavy-equipment usage and movement, drilling, demolition, or the need for relocation, as well as increases in vibration levels or introduction of new visual elements. The MOA for the Fresno to Bakersfield Section ensures that treatments implemented before, during, and after construction would avoid, minimize, and mitigate these impacts. Nevertheless, the

construction of the project would cause substantial adverse direct changes to 5, and indirect changes to 9 historical properties or resources (see Final EIR/EIS, Table 3.17-7). Furthermore, additional built environment surveys may be necessary as project design progresses and those surveys may identify additional historical resources. A substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 is considered a significant impact. For these reasons, built environment resources may be subject to treatment for significant mitigatable or unavoidable effects.

Cul-MM#6: Complete Inventories for Historic Architectural Resources. It may be necessary to conduct additional inventories for historic architectural resources as the design is finalized. The Authority, in consultation with the FRA, under delegated responsibility under the PA and MOA, shall complete inventory and evaluate historic architectural properties for the NRHP. The Authority will also evaluate historic architectural resources to determine if they are historical resources (CRHR-eligible). For identified NRHP historic properties the Authority, in consultation with the FRA, will assess the potential for adverse effects by applying the effects criteria in 36 C.F.R. Part 800.5(a)(1). For CRHR historic resources the Authority shall assess the potential for significant impacts by applying the criteria in CEQA Guidelines 15064.5(b).

CUL-MM#7: Avoid and/or Monitor Adverse Construction Vibration Effects. The HST project will develop construction methods to avoid indirect adverse effects or indirect substantial adverse change to any historic properties (Section 106) or historical resources (CEQA) from vibration caused by construction activities. Vibration from impact pile-driving during construction is anticipated to reach up to 0.12 in/sec ppv at 135 feet from the project centerline, a level that could cause the physical destruction, damage, or alteration of historic properties or historical resources if the pile-driving is within 80 to 140 feet of the building. Because impact pile-driving could cause adverse effects or substantial adverse changes, alternative construction methods causing less than 0.12 in/sec ppv measured at the receptor will be used for construction activities near historic properties or historical resources if they are determined to be susceptible to vibration damage at or above 0.12 in/sec ppv (Authority and FRA 2012e). The use of alternative construction methods that create less vibration, such as cast in drilled hole construction, at these locations would avoid indirect adverse vibration effects on historic properties (Section 106) and would avoid substantial adverse vibration changes to historical resources (CEQA). Indeed, any construction method that produces less than 0.12 in/sec ppv will be below the threshold for damage to older buildings (Wilson, Ihrig, & Associates et al. 2012; Ted Lindberg, personal communication, 2014). Implementation of avoidance measures will be monitored to ensure that damaging vibration levels are avoided during construction adjacent to the historic properties identified as requiring this treatment.

The mitigation measure described above is consistent with FRA's High-Speed Ground Transportation Noise and Vibration Impact Assessment (2005) for evaluation of noise and vibration impacts associated with HSTs. The Built Environment Treatment Plan (BETP), as required under the PA, will describe the methodology for the avoidance of adverse vibration effects in more detail and how such avoidance will be monitored and implemented during construction of the project.

CUL-MM#8: Implement Protection and/or Stabilization Measures. The BETP identifies historic properties/historical resources that may require protection and/or stabilization before the start of construction of the project. Properties subject to this mitigation activity include those that would be physically affected by the project, properties that would be relocated, and properties in close-enough proximity to require protection to avoid effects. This treatment will allow the project to avoid adverse effects on historic properties/historical resources outright or will minimize those effects to the extent possible. Application of this treatment would reduce significant impacts under CEQA to a less-than-significant level.

This treatment will be developed and implemented in consultation with the Authority, the landowner or land-owning agencies as well as the State Historic Preservation Officer (SHPO) and the MOA signatories, as required by the PA. Such measures will include, but will not be limited to, vibration monitoring of construction in the vicinity of 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. For buildings that would be moved, treatment will include stabilization before, during, and after relocation; protection during temporary storage; and relocation at a new site and during subsequent rehabilitation. Moving buildings could result in minor impacts on air emissions from equipment and vehicles and minor effects on developed or undeveloped sites.

Cul-MM#10: Minimize Adverse Effects through Relocation of Historic Structures.

Based upon the finalization of design and the completed inventory, the BETP will identify historic properties/historical resources that could be relocated to help avoid their destruction and minimize the direct adverse effect of their physical damage or alteration. The development of the plan for relocation and the implementation of relocation will take place before construction. The relocation of the historic properties/historical resources will take into account the historic site and layout (i.e., the orientation of the buildings to the cardinal directions) and their potential re-use. The properties subject to relocation will be documented in detailed recordation as described in Cul-MM#12.

The BETP will include input from consulting parties regarding relocation of historic structures to provide a comprehensive and thorough approach that will best meet the needs of the parties and the resources. This minimization measure is consistent with best practices within the professional historic preservation community and is commensurate with treatment of historic properties in similar-scale transportation projects. Relocating historic structures has proven to be effective in achieving the stewardship goals of Section 106 and CEQA review. Performance tracking of this treatment will be identified in the BETP. Application of this treatment will help minimize effects on historic properties (Section 106) or historical resources (CEQA) and will reduce impacts under CEQA to a less-than-significant level.

CUL-MM#11: Minimize Adverse Operational Noise Effects. The BETP identifies any additional historic properties/historical resources that will be subject to treatment to minimize the indirect adverse effects caused by the operational noise of the HST project. Properties subject to this mitigation will be treated in consultation with the landowner or land-owning agencies and the Authority. Preliminary project design options, such as noise walls, have been developed to help reduce noise impacts and follow FRA methodologies for noise abatement. As discussed in Chapter 3.4 of the Final EIR/EIS, assessments and mitigations (see Mitigation Measure N&V-MM#1) for noise exposure levels for sensitive receptors, not just historic buildings, in similar land use areas along the project footprint, would also be protective of historic buildings. Therefore, application of this treatment mitigation coupled with the implementation of N&V-MM#1 would help minimize effects on historic properties (Section 106) or historical resources (CEQA) and could reduce impacts under CEQA to a less-than-significant level.

Cul-MM#12: Prepare and Submit Additional Recordation and Documentation. Based on the finalization of design and the completed inventory, the BETP will identify specific historical resources that would be physically altered, damaged, relocated, or destroyed by the project that will be documented in detailed recordation that includes photography. This documentation may consist of preparation of updated recordation forms (DPR 523), or may be consistent with the HABS, the Historic American Engineering Record (HAER), or the Historic American Landscape Survey (HALS) programs; a Historic Structure Report; or other recordation methods stipulated in the MOA and described in the BETP. The recordation undertaken by this treatment would focus on the aspect of integrity that would be affected by the project for each historic property subject to this treatment. For example, historic properties in an urban setting that would experience an

adverse visual effect would be photographed to capture exterior and contextual views; interior spaces would not be subject to recordation if they would not be affected.

Consultation with the SHPO and the consulting parties will be conducted for the historic architectural resources to be documented. Recordation documents will follow the appropriate guidance for the recordation format and program selected.

Copies of the documentation will be provided to the consulting parties and offered to the appropriate local governments, historical societies and agencies, or other public repositories, such as libraries. The documentation will also be offered in printed and electronic form to any repository or organization to which the SHPO, the Authority, and the local agency with jurisdiction over the property, through consultation, may agree. The electronic copy of the documentation may also be placed on an agency or organization's website.

Performance tracking of this mitigation measure is described in the BETP and is included in the MMRP as part of the CEQA process.

CUL-MM#13: Prepare Interpretive or Educational Materials. Based on the finalization of design and the completed inventory, the MOA and BETP will identify historic properties and historical resources that will be subject for historic interpretation and determine when an interpretive program should be implemented as part of the ongoing consultation with consulting parties and the Authority. Interpretive exhibits will provide information regarding specific historic properties or historical resources and will address the aspect of the significance of the properties that would be affected by the project. Historic properties and historical resources subject to demolition by the project will be the subject of informative permanent metal plaques that will be installed at the site of the demolished historic property or at nearby public locations. Each plaque will provide a brief history of the subject property, its engineering/architectural features and characteristics, and the reasons for and the date of its demolition.

The interpretive exhibits will utilize images, narrative history, drawings, or other material produced for the mitigation described above, including the HABS/HAER/HALS or other recordation and other archival sources. The interpretive exhibits may be in the form of, but are not limited to, interpretive display panels and/or printed material for dissemination to the public. The interpretive exhibits may be installed at local libraries, historical societies, or public buildings.

This mitigation measure is consistent with best practices within the professional historic preservation community and is commensurate with the treatment of historic properties in similar-scale transportation projects. Preparing interpretive exhibits has proven to be effective in achieving the stewardship goals of Section 106 and CEQA review. Performance tracking of this mitigation measure is described in the BETP and will be included in the MMRP.

CUL-MM#14: Plan Repair of Inadvertent Damage. Based on the completed inventory and any additional inventory that may be required, the BETP provides that the Authority outline a plan for the repair of inadvertent damage to historic properties or historical resources be developed before project construction. The plan will consist of a general protocol for inadvertent damage to historic architectural resources and a listing of specific properties that should be the subject of an individual plan because of their immediate proximity to the project. Inadvertent damage from the project to any of the historic properties or historical resources near construction activities will be repaired in accordance with the SOI's Standards for Rehabilitation. Inadvertent damage will consist of any damage that results in a significant impact to a historical resource within the meaning of CEQA Guidelines Section 15064.5(b)(2) or adverse effects to historic properties within the meaning of 36 C.F.R. Part 800.5(a)(1).

The plan will utilize photographic documentation prepared for the other mitigation measures (such as the documentation associated with the HST or the HABS/HAER/HALS records) as the

baseline condition for assessing damage. The plan will include the protocols for notification, coordination, and reporting to the SHPO and the landowner or land-owning agencies. Before it can be implemented, the repair plan will be submitted for review and comment to the SHPO to verify conformance with the SOI's Standards for Rehabilitation.

This mitigation measure is consistent with best practices within the professional historic preservation community and is commensurate with treatment of historic properties in similar-scale transportation projects. This type of mitigation measure has proven to be effective in achieving the stewardship goals of Section 106 and CEQA review. Performance tracking of this treatment is described in the BETP.

Cul-MM#15: Visual Screening Planting. Based on the finalization of design and the completed inventory, the BETP will identify historic properties and historical resources that will be subject to visual screening planting. Visual screening will consist of plant material that will minimize the view of the project from the property subject to mitigation. This treatment will minimize adverse effects on historic properties/historical resources to the extent possible.

Plant species will be selected on the basis of their mature size and shape, growth rate, and drought tolerance. No species that is listed on the Invasive Species Council of California's list of invasive species will be planted. The landscaping will be continuously maintained and appropriate irrigation systems will be installed if needed. Visual screen planting may be undertaken in the form of boundary planting on the affected property, planting at affected viewpoints, and/or planting on project property as appropriate. This treatment will be developed in consultation with the landowner or land-owning agencies, as well as the SHPO and the MOA signatories, as required by the PA. The visual screen planting treatment will include preparation of a planting plan that utilizes evergreen tree or shrub species and will take into account both the growth rate and ultimate height and density for the selected species to ensure that the visual screen can be accomplished effectively.

None of the mitigation measure options is expected to result in secondary effects. Historical architectural resources would be directly or indirectly adversely affected or experience substantial adverse change from construction activities associated with the Preferred Alternative north of 7th Standard Road.

Execution of the treatments described in the mitigation measures above would avoid, minimize, or mitigate these adverse effects or changes, to the extent possible. Additionally, the MOA for the Fresno to Bakersfield section ensures that treatments implemented before, during, and after construction would avoid, minimize, and mitigate these impacts. The PA and MOA mandate that the BETP will set forth means to avoid, protect, or development treatment measures to minimize the project's effects when the Authority, in consultation with the appropriate agencies, the SHPO, and other MOA signatories, determines that adverse effects cannot be avoided. The BETP will provide specific performance standards to ensure that each impact will be avoided, minimized, or mitigated to the extent possible and provide enforceable performance standards to follow the NRHP and the SOI's standards when implementing the mitigation measures. Although the mitigation measures, which have been developed as part of the Section 106 of the NHPA process, are extremely stringent, it cannot be known, with certainty at this stage in the design process, whether such measures will be effective to mitigate all impacts to the historic built environment to less-than-significant levels.

The Authority therefore finds that Mitigation Measures CUL-MM #6, CUL-MM #7, CUL-MM #8, CUL-MM #10, CUL-MM#11, CUL-MM#12, CUL-MM#13, CUL-MM #14, and CUL-MM # 15 have been required in the project and that implementation of these measures will reduce, but not avoid or substantially lessen the impacts on historic architectural resources due to construction activities. The Authority finds that there are no other feasible mitigation measures or alternatives

that would reduce this impact to less-than-significant levels. To the extent that these significant adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project

3.13.3 CUL IMPACT #3 - Potential Adverse Effects on Paleontological Resources Due to Construction Activities

During construction, ground-disturbing activities could disturb sediments with high paleontological sensitivity. Depending on the depth of ground disturbance, construction could directly or indirectly destroy a unique paleontological resource. This is considered a potentially significant impact under CEQA.

CUL-MM#16: Engage a Paleontological Resources Specialist to Direct Monitoring during Construction. A paleontological resources specialist (PRS) will be designated for the project by the Authority and will be responsible for determining where and when paleontological resources monitoring should be conducted. Paleontological resources monitors (PRMs) will be selected by the PRS based on their qualifications (as detailed in Caltrans Standard Environmental Reference, Environmental Handbook, Volume 1, Chapter 8, Paleontology). The scope and nature of their monitoring will be determined and directed based on the Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The PRS will be responsible for developing and implementing the Worker Environmental Awareness Program training. All management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training before beginning work on the project and will be provided with the necessary resources for responding in case paleontological resources are found during construction. The PRS will document any discoveries, as needed, evaluate the potential resource, and assess the significance of the find under the guidance of the recommendations of the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995).

CUL-MM#17: Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan. Paleontological monitoring and mitigation measures are restricted to those construction-related activities that will result in the disturbance of paleontologically sensitive sediments. The PRMMP will include a description of when and where construction monitoring will be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; and procedures for reporting the results of the monitoring and mitigation program.

The monitoring program will be designed to accommodate site-specific construction of the selected option. The PRMMP will be consistent with Society of Vertebrate Paleontology (SVP 1995) guidelines for the mitigation of construction impacts on paleontological resources. The PRMMP will also be consistent with the SVP (1996) conditions for receivership of paleontological collections and any specific requirements of the designated repository for any fossils collected.

CUL-MM#18: Halt Construction When Paleontological Resources Are Found. If fossil or fossil-bearing deposits are discovered during construction, regardless of the individual making a paleontological discovery, construction activity in the immediate vicinity of the discovery will cease. This requirement will be spelled out in both the PRMMP and the Worker Environmental Awareness Program. Construction activity may continue elsewhere provided that it continues to be monitored as appropriate. If the discovery is made by someone other than a PRM or the PRS, a PRM or the PRS will immediately be notified.

None of the mitigation measure options is expected to result in secondary effects. Surficial activities such as staging and clearing usually do not affect paleontological resources because the

associated disturbance does not extend deep enough to impact paleontological sensitive sediment, but construction activities that may impact paleontological resources include excavation, heavy equipment usage and movement at depth, and drilling. However, with monitoring efforts during construction activities, prepare and implement a monitoring and mitigation plan, procedures to halt work in the case of the discovery of paleontological resources, construction impacts to significant paleontological resources will be substantially lessened or avoided, and reduced to a less-than-significant with implementation of CUL-MM #16, CUL-MM #17, and CUL-MM #18.

The Authority finds that Mitigation Measures CUL-MM # 16, CUL-MM #17, and CUL-MM #18 have been required in the project and that implementation of these measures will substantially lessen or avoid the potentially significant impact of construction on paleontological resources; this impact is less than significant with implementation of these mitigation measures.

3.14 Regional Growth (Section 3.18 in the Final EIR/EIS)

The Preferred Alternative north of 7th Standard Road would induce growth, but would not induce growth substantially beyond what is projected in city and county general plans, other than in unincorporated Kings County, near Hanford, due to proximity of the Kings/Tulare Regional Station. Compared to the No Project Alternative, the Preferred Alternative north of 7th Standard Road would encourage more compact, efficient land use in the region by providing an economic driver for higher-density infill development around the Fresno station in downtown Fresno. These effects would support anticipated regional land use policies consistent with SB 375, and would assist communities in realizing goals in these regional transportation plans.

The Fresno Station would be compatible with the planning goals of Fresno. The station area planning process has been strategized such that the stations would be sited and designed to maximize potential benefits. This process also allows cities to make relevant land use decisions well in advance of any project construction. The City of Fresno, under a station planning grant from the Authority, will develop a site-specific plan to adapt to the potential of a HST station and realize new land use patterns in the city's downtown area. These funds will be used to prepare land use plans for the areas around the stations, including compact development and mixed uses compatible with the Authority's Urban Design Guidelines.

The Kings/Tulare Regional Station—East would be located in an agricultural area because of the HST alternatives bypass the City of Hanford, and the Authority would support local government regulations to continue to discourage growth in the agricultural area around the Kings/Tulare Regional Station—East. In addition the Authority would work with local government, the California Department of Conservation, local land trusts, and farm organizations to identify and acquire agricultural conservation easements to limit the potential of low-density urban development caused by a station, as described in the agricultural mitigation measures (see Section 3.14.7 of the Final EIR/EIS). Pursuant to SB 375, sustainable community strategies (SCS) or alternative planning strategies (APS) planning in each county will likely rely upon HST System development to help reach its greenhouse gas emissions reduction targets of 5% by 2020 and 10% by 2035. These planning processes, together with steps the Authority will take to assist with station area planning, is expected to encourage more compact development within the region, particularly around HST station locations.

4.0 Cumulative Impacts (Section 3.19 of the Final EIR/EIS)

This section presents the Authority's findings regarding the cumulative effects of implementing the Preferred Alternative north of 7th Standard Road in combination with other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from the combination of individually minor but collectively significant projects over a period of time. (CEQA Guidelines, § 15355) Under CEQA, when a project would contribute to a cumulative impact, an EIR must discuss whether the project's incremental effect is "cumulatively considerable." Cumulatively considerable means that the project's incremental effect is significant when viewed in the context of past, present, and reasonably probable future projects. The discussion of cumulative impacts need not provide as much detail as is provided for the effects attributable to the project alone (CEQA Guidelines, § 15130, subd. (b)). As described in the EIR/EIS, the focus of the cumulative impacts analysis is on the Fresno to Bakersfield Section of the HST System and the regional context appropriate for each resource area, including adjacent sections of the HST System.

4.1 Transportation

The cumulative impact analysis for transportation is based on the planned and potential project lists (Appendices 3.19-A and 3.19-B of the Final EIR/EIS), as well as plans/projections listed in Table 3.2-1, Regional Plans and Policies in Section 3.2, Transportation of the Final EIR/EIS.

At a local level, the operation of the Preferred Alternative north of 7th Standard Road in combination with other past, present, and reasonably foreseeable projects would decrease the operating conditions below Level of Service (LOS) D on some roadway segments and at intersections in the vicinity of HST stations— causing a cumulatively significant effect on local traffic congestion. Mitigation measures for transportation that are described in Section 3.1 of these Findings (for impacts under that Future [2035] Plus Project scenario) would reduce these impacts by modifying intersections to improve level of service. These modifications will include widening approaches to intersections, adding exclusive turn lanes to intersections, and/or adding new lanes to roadways. With implementation of these measures, the contribution of the Preferred Alternative north of 7th Standard Road to cumulative local transportation impacts would be reduced to less than cumulatively considerable.

The Authority finds that transportation mitigation measures have been incorporated into the project (see Section 3.1 of these Findings) and that implementation of these mitigation measures will reduce the project's contribution to cumulatively considerable transportation impacts to less-than-cumulatively-considerable levels.

4.2 Air Quality and Global Climate Change

Construction of the Preferred Alternative north of 7th Standard Road would be above the San Joaquin Valley Air Pollution Control District's (SJVAPCD's) significance thresholds for regional criteria pollutants and together with other related projects, this combined impact would be cumulatively significant. In addition, some materials needed for construction of the project, such as ballast, may be sourced to areas outside of the San Joaquin Valley Air Basin (SJVAB). As described in Impact AQ#3, Section 4.2 of these Findings, the transport of ballast construction materials from areas outside the SJVAB to the project site may result in exceedences of NO_x mass emission thresholds in other air districts, thereby contributing to cumulatively considerable air quality impacts.

As explained below, implementation of the project's required mitigation measures will reduce the project's contribution to these cumulatively considerable impacts to less-than-cumulatively-considerable levels.

As described in Section 3.19, Cumulative Impacts, of the Final EIR/EIS, construction of the project would not result in cumulatively significant statewide or local air quality or greenhouse gas emissions impacts. At a regional level, however, the project would have a cumulatively considerable impact on air quality.

Within the SJVAB, for criteria pollutants, the SJVAPCD has adopted a cumulative threshold of significance of 10 tons per year for ozone precursors (ROG and NO_x) and 15 tons per year for particulate matter (PM₁₀ and PM_{2.5}). The SJVAPCD has determined that projects below these significance thresholds would not have a cumulatively considerable impact on air quality in the SJVAB as they are consistent with the SJVAPCD's attainment strategy and would not prevent the District from achieving attainment. Before implementation of mitigation, the project's construction emissions would exceed the SJVAPCD's limits for ROG, NO_x, PM₁₀, and PM_{2.5}, which would be a cumulatively considerable impact. Implementation of the mitigation measures adopted for the project's air quality construction impacts, which are described in Section 3.2 of these Findings, will reduce construction emissions of these criteria pollutants to net zero. In particular, mitigation measure AQ MM#4 offsets construction emissions above the SJVAPCD thresholds for ozone precursors and particulate matter through the Voluntary Emission Reduction Agreement. Therefore, the project's incremental contribution would not be cumulatively considerable.

With respect to the project's air quality impacts in areas outside the SJVAB, implementation of Mitigation Measure AQ-MM#5, which requires the purchase of offsets and emission mitigation for emissions associated with hauling ballast materials, would reduce this impact to less-than-cumulatively-considerable levels.

The Authority finds that construction air quality mitigation measures have been incorporated into the project (see Section 3.2 of these Findings) and that implementation of these mitigation measures will reduce the project's contribution to cumulatively considerable construction air quality impact on regional emissions, both inside and outside the SVAB, to less-than-cumulatively-considerable levels.

4.3 Noise and Vibration

Construction of the Preferred Alternative north of 7th Standard Road, in conjunction with other past, present, and reasonably foreseeable projects would result in noise effects that would be limited in duration. It is possible that multiple projects in urban areas that are in close proximity to the Preferred Alternative north of 7th Standard Road, such as projects developed under the Fulton Corridor Specific Plan, and the North Shafter Sewer Project, would be under construction at the same time as the HST project. Together with the HST project, construction of these projects could result in exceedance of significance thresholds for noise at sensitive receivers. (See Section 3.3.3, Noise and Vibration, of the Final EIR/EIS for the noise significance thresholds.) This would be a significant cumulative impact. Even after implementation of the noise mitigation measures set forth in Section 3.3 of these Findings, the project's contribution to this cumulative construction noise impact would be cumulatively considerable.

Furthermore, although no specific projects have been proposed in the rural areas of the project with construction schedules that overlap the project, it is possible that future construction of commercial, industrial, or infrastructure projects in rural areas could overlap with project construction. This would result in a significant cumulative impact. Even after implementation of

the noise mitigation measures set forth in Section 3.3 of these Findings, the project's contribution to this cumulative construction noise impact would be cumulatively considerable.

Construction of the elevated sections of the project is likely to require pile driving. It is possible that other projects in urban areas that are in close proximity to elevated sections of HST alternatives would also require pile driving. Construction of the project concurrently with such future projects could result in exceedance of significance thresholds for vibration at adjacent sensitive receivers. Even after implementation of the mitigation measures for vibration impacts set forth in Section 3.3 of these Findings, this would be a significant cumulative impact and the project's contribution to this cumulative construction vibration impact would be cumulatively considerable.

In addition, operation of the Preferred Alternative north of 7th Standard Road would create new long-term noise impacts. Increased vehicular traffic along existing and planned roadways and the anticipated increase in the number and length of freight trains along the BNSF Railway would also contribute to future elevated noise levels. Traffic from future land use projects, in combination with traffic related to the Preferred Alternative, is projected to increase noise levels up to 7 dBA day-night sound level, (L_{dn}) between 2010 and 2035 at noise-sensitive receivers. Project's such as the Fresno Freight Alignment project in Fresno, Houston Avenue widening project in Hanford, and the Poso Drive reconstruction in Wasco, could contribute to cumulative increases in traffic volumes, which would increase noise levels. Anticipated increases in the number and length of freight trains would result in a maximum increase of 3 dBA L_{dn} in future railroad noise exposure at noise-sensitive receivers. The HST alternatives would generate noise-level increases up to 28 dBA L_{dn} above projected 2035 noise levels at certain isolated locations; however a majority of the sensitive receivers located adjacent to the HST would not experience such a large increase due to the HST. Together with past, present, and reasonably foreseeable projects, the increased noise levels adjacent to transportation corridors would be a significant cumulative impact for sensitive receivers along the transportation corridors. Even after implementation of the mitigation measures set forth in Section 3.3 of these Findings, the incremental contribution of the project to the significant cumulative noise impact would be cumulatively considerable.

Mitigation measures for the construction noise impacts of the Preferred Alternative north of 7th Standard Road described in Section 3.3 of these Findings, would reduce the project's contribution to cumulative construction noise impacts by activities such as installing temporary and permanent sound barriers, using low-noise emission equipment, limiting or avoiding certain noisy activities during nighttime hours, installation of building sound insulation, acquiring easements on properties severely affected by noise, and using special types of trackwork.

Additionally, during operations, even with implementation of mitigation measures for noise provided in Section 3.3 of these Findings, the project's contribution to cumulative effects of operational noise would remain cumulatively considerable. This contribution would result because there would be some sensitive receptors near the HST alignment for whom additional mitigation is not practical because construction of a sound barrier is not economically feasible and there is no practical amount of sound insulation that can be added to the structure to reduce interior noise levels to acceptable standards.

The following mitigation measure would reduce the potential cumulative effects of overlapping construction activities within the same area.

CUM-N&V-MM#1: Consult with agencies regarding construction activities. To minimize the potential overlapping noise-generating construction activities within the same area, the Authority would consult with local city and county planning departments and other agencies as determined necessary. Consultation would entail notifying the departments/agencies regarding

the anticipated HST construction schedule and would allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HST alignment, to the extent feasible.

However, even with implementation of mitigation measure CUM-N&V-MM#1, the construction-related contribution of the Preferred Alternative north of 7th Standard Road to cumulative noise and vibration impacts would remain cumulatively considerable. Additionally, during operations, even with implementation of mitigation measures for noise and vibration, cumulative effects of operational noise would remain cumulatively considerable.

The Authority finds that noise and vibration mitigation measures, including Mitigation Measure CUM-N&V-MM#1, have been required in the project and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the project's contribution to cumulatively considerable construction noise and vibration impacts. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce these impacts to less-than-cumulatively-considerable levels. To the extent that these cumulatively considerable adverse impacts remain significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

4.4 Biological Resources and Wetlands

Cumulative Construction Impacts on Special-Status Plant and Wildlife Species

Construction of the project in combination with other past, present, and reasonably foreseeable projects may result in the loss of special-status plant and wildlife species within the Tulare Basin at temporary construction sites such as laydown and staging areas. Future projects within this region that are expected to contribute to the cumulative impacts associated with construction of the HST project include, but are not limited to, the Corcoran Irrigation District Solar Project and Generation Facilities, and the Smyrna and Goose Lake Solar Developments. Additionally, the construction of the adjacent HST sections, Merced to Fresno to the north, and Bakersfield to Palmdale to the south, would contribute to the net loss of special-status plant and wildlife species. These projects, including the Preferred Alternative north of 7th Standard Road, are located in areas containing similar habitat requirements for special-status plants and wildlife species; in particular they are located in areas of vernal pool swales and desert washes which provide suitable habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, western burrowing owl, coast horned lizard, heartscale, alkali goldfields, and spinescale scrub, which are known to occur in the area. Other special-status plant species such as little mouse tail, and other special-status wildlife species such as valley elderberry longhorn beetle, western spadefoot toad, blunt-nosed leopard lizard, Swainson's hawk, Tipton kangaroo rat, and San Joaquin kit fox have potential to occur in the construction footprint of the HST project and the footprints of other cumulative projects. Impacts could include the temporary loss of wetlands, hydrological changes to wetlands, and loss of habitat for special-status species. Construction activities may result in the "take" of individuals in the form of mortality, injury, or harassment due to trampling, noise, dust, motion disturbance, or temporary destruction and degradation of suitable habitat. These impacts are considered cumulatively significant.

However, with implementation of the mitigation measures set for biological resources forth in Section 3.5 of these Findings, the project's incremental contribution to this cumulatively significant impact would not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the project that will reduce the project's contribution to cumulatively considerable construction impacts to special-status plant and wildlife species to less-than-cumulatively-considerable levels.

Cumulative Construction Impacts on Habitats of Concern

Construction of the project in combination with other past, present, and foreseeable projects may result in the temporary destruction or degradation of special-status plant communities; impede implementation of recovery plans; temporarily place fill or increase erosion, siltation, and runoff in jurisdictional waters (i.e., seasonal wetlands, vernal pools); and remove or modify protected trees (i.e., native oaks). Cumulative impacts to jurisdictional wetlands and waters may be caused by the combined construction of numerous transportation and development projects. These projects include, but are not limited to, the Fresno Freight Rail Alignment Project in Fresno County which crosses the Kings River, Murphy Slough, and several unnamed canals and ditches, the Goose Lake Solar Project and the Smyrna Solar Project. Additionally, construction of the adjacent HST sections, Merced to Fresno to the north, and Bakersfield to Palmdale to the south, would contribute to the net loss of wetlands and other habitats of concern in the cumulative study area. Cumulative impacts to recovery plans, such as the Recovery Plan for Upland Species of the San Joaquin Valley, California, as well as the additional removal of protected trees as a result of past, present, and foreseeable projects, including those listed above, would be cumulatively significant. Impacts to jurisdictional waters and recovery plans would be cumulatively significant.

However, with implementation of the mitigation measures for biological resources set forth in Section 3.5 of these Findings, the project's incremental contribution to this cumulatively significant impact would not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the project that will reduce the project's cumulatively considerable construction impact to habitats of concern to less-than-cumulatively-considerable levels.

Cumulative Operational Impacts on Special-Status Plant and Wildlife Species

Potential impacts on special-status species from operation of the project and other past, present, and foreseeable projects include permanent habitat loss, habitat fragmentation, introduction of invasive species, and harassment due to increased noise and human disturbance. Planned and potential development projects and transportation projects, including, but not limited to, the Smyrna and Goose Lake Solar Developments, would contribute to significant impacts on special-status species because these projects together with the HST project, could impact habitat with potential for special-status plant and wildlife species presence. Additionally, the adjacent HST sections, Merced to Fresno to the north and Bakersfield to Palmdale to the south, would contribute to the net loss of special-status plant and wildlife species. Cumulative operations impacts on special-status plant and wildlife species would be significant. Because of the large area that would be permanently occupied by HST facilities, impacts to special-status plant and wildlife species would be substantial as a result of permanent habitat conversion and loss. Mitigation measures for the HST project include preconstruction surveys, avoidance, habitat restoration, and offsite habitat preservation, enhancement and compensation, which would reduce the project's contribution to this impact. In the context of the loss of special-status plant and wildlife species from past, present, and reasonably foreseeable agricultural and urban development in the Tulare Basin, the contribution of the HST project to these significant cumulative impacts would be cumulatively considerable before mitigation.

However, mitigation for the project includes restoration, enhancement, and preservation of jurisdictional waters and riparian habitats to the extent that there will be no net loss of aquatic resources, functions, and services. These habitats are important for many special-status plant and wildlife species. In addition, project mitigation includes preservation of habitat occupied by special-status plant and wildlife species. This preservation in combination with restoration, enhancement, and preservation of jurisdictional waters will improve biological resources in the region over existing conditions. For these reasons, with implementation of the mitigation

measures for biological resources set forth in Section 3.5 of these Findings, the project's incremental contribution to this cumulatively significant impact to special-status plant and wildlife species will not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the project that will reduce the project's contribution to cumulatively considerable operational impacts to special-status plant and wildlife species to less-than-cumulatively-considerable levels.

Cumulative Operational Impacts on Habitats of Concern

Several projects planned within the Tulare Basin in combination with the HST project would have cumulative impacts on habitats of concern prior to mitigation. These projects include, but are not limited to: Goose Lake Solar, Smyrna Solar, Kettleman Photovoltaic Solar Farm Project, and Avenal Park Photovoltaic Solar Farm. Additionally, the adjoining HST sections, Merced to Fresno to the north and Bakersfield to Palmdale to the south, would contribute to the net loss of wetlands and other habitats of concern in the basin. Operational impacts of these projects in association with the HST project could include permanent fragmentation, degradation, or conversion of habitats of concern including jurisdictional waters, as well as loss of wetlands, and hydrological changes to wetlands, loss of special-status plant communities, loss of recovery plan areas and the removal or modification of protected trees. The operation of the HST project prior to mitigation in combination with other past, present, and foreseeable projects would result in a significant cumulative impact to habitats of concern within the Tulare Basin.

However, mitigation for the project includes restoration, enhancement, and preservation of jurisdictional waters and riparian habitats to the extent that there will be no net loss of aquatic resources, functions, and services. These habitats are important for many special-status plant and wildlife species. In addition, project mitigation includes preservation of habitat occupied by special-status plant and wildlife species. This preservation in combination with restoration, enhancement, and preservation of jurisdictional waters will improve biological resources in the region over existing conditions. For these reasons, with implementation of the mitigation measures for biological resources set forth in Section 3.5 of these Findings, the incremental contribution of the project to this cumulative impact to habitats of concern will not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the project that will reduce the project's contribution to cumulatively considerable operational impacts to habitats of concern to less-than-cumulatively-considerable levels.

Cumulative Operational Impacts on Wildlife Movement Corridors

Past projects have significantly degraded the ability of wildlife to freely move across natural habitats, and wildlife movement would be further limited with the Preferred Alternative north of 7th Standard Road and other past, present, and reasonably foreseeable projects in the Tulare Basin. Planned and potential projects which could reduce the ability of wildlife to move freely across natural habitats include, but are not limited to, the Fresno Freight Rail Alignment Project, which extends through Fresno County, and the 7th Standard Road widening in Bakersfield. Additionally, the adjacent HST sections, Merced to Fresno to the north and Bakersfield to Palmdale to the south would contribute to blockage of wildlife movement corridors. Impacts from these projects could include the permanent blockage of corridors and/or linkages and disruption of wildlife due to increased lighting, noise, and motion. These cumulative impacts would be significant. Because the project is linear, spanning much of the southern San Joaquin Valley, its impact on wildlife movement corridors would be cumulatively considerable before mitigation.

However, mitigation measures for the project includes extensive installation of wildlife crossings in areas of wildlife mitigation corridors where the HST alignment is at grade and preservation of habitat occupied by special-status plant and wildlife species, much of which is located within wildlife movement corridors. For these reasons, with implementation of the mitigation measures

for biological resources set forth in Section 3.5 of these Findings, the incremental contribution of the HST project to cumulative impacts would be not be cumulatively considerable. The Authority therefore finds that mitigation measures have been incorporated in the project that will reduce the project's contribution to cumulatively considerable operational impacts to on wildlife movement corridors to less-than-cumulatively-considerable levels.

4.5 Socioeconomics and Communities

Cumulative Construction Impacts Contributing to Division of Communities

Construction of projects under the cumulative condition in the vicinity of the Preferred Alternative north of 7th Standard Road would contribute to cumulative impacts associated with the division and/or disruption of communities in the cities of Fresno, Hanford, Wasco, and Shafter, and, as well as unincorporated communities in Kings and Kern counties. In Fresno, the widening of Ventura Boulevard, the construction of a 3-million-gallon water storage tank, and the reconstruction of the SR 99 Monterey Bridge are all planned within 1 mile of each other in the Central and Edison districts of Fresno. Construction of the projects themselves would not displace any residents or impact the community's character. However, there could be temporary increases in traffic, changes in traffic patterns and access to community facilities, and construction noise and dust if the projects were constructed simultaneously with the Preferred Alternative north of 7th Standard Road. In addition, division and/or disruption of communities could result from construction of the HST project and other cumulative projects such as: reconstruction and widening of roads, including Excelsior Avenue, 13th Avenue, SR 198, 10th Avenue, and 10½ Avenue in and around Hanford, construction of the BNSF Railway double tracking and roadway improvements and widening, including Palm Avenue, Poso Drive, Beech Street, Mannel Avenue, Lerdo Highway, and 7th Standard Road and in the cities of Wasco, Shafter, and unincorporated communities nearby such as Crome. Construction activities associated with these projects could hinder access and interaction among neighborhoods because of increased congestion, detours, and lane or road closures. Construction of the Preferred Alternative north of 7th Standard Road, which may coincide with construction of the projects described above, would result in a significant cumulative impact. The incremental contribution of the Preferred Alternative north of 7th Standard Road to this cumulative impact would be cumulatively considerable.

With implementation of mitigation measures for Socioeconomics, Communities, and Environmental Justice described in Section 3.8 of these Findings, impacts would be reduced, but not to less-than-significant levels.

In addition, the following mitigation measure would be implemented.

CUM-SO-MM#1: Consult with agencies regarding construction activities. To minimize the potential cumulative effects of overlapping construction activities within the same area, the Authority would consult with the local city and county planning departments and other agencies as determined necessary, to notify the departments/agencies regarding the anticipated HST construction schedule and allow for adjustment of construction schedules for adjacent projects or projects in close proximity to the HST alignment, to the extent feasible, in order to limit the overlap of community disruption.

With implementation of the above mitigation measure, the cumulative division and/or disruption of communities during construction would be somewhat reduced. However, the contribution of the Preferred Alternative north of 7th Standard Road to these impacts would remain cumulatively considerable.

The Authority finds that mitigation measures, including Mitigation Measure CUM-SO-MM#1, have been required in the project and that implementation of these mitigation measures would reduce,

but not completely avoid or substantially lessen the project's contribution to the construction impacts associated with the division and/or disruption of communities. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this incremental contribution to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

Cumulative Operational Socioeconomic and Communities Impacts

Under the cumulative scenario, several communities could experience division and/or disruption. On the east side of Hanford, the reconstruction and widening of roads including Excelsior Avenue, SR-198, 10th Avenue, and 10 ½ Avenue could result in division of existing communities. The HST project would also contribute to division of rural communities east of Hanford, and in Crome between Shafter and Bakersfield. Therefore, the cumulative impacts to division of communities would be significant. Even with implementation of the mitigation measures adopted for the project's Socioeconomic and Communities impacts, which are set forth in Section 3.8 of these Findings, the contribution of the project to this cumulative impact would be cumulatively considerable.

The Authority finds that socioeconomic and communities mitigation measures have been required in the project and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the project's cumulatively considerable operational impact associated with the division and/or disruption of communities. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

4.6 Station Planning, Land Use, and Development

Although future development under the cumulative condition would generally be implemented in compliance with local zoning and land use plans, several proposed or planned projects, including, but not limited to, the HST project and the Merced to Fresno section of the HST, could result in significant cumulative land use changes compared to the existing intensity of land uses as well as new uses incompatible with adjacent land uses. Therefore, the cumulative land use impacts would be cumulatively significant.

The HST project would result in the permanent conversion of land to transportation uses, which in many locations would be incompatible with existing land uses. Although the amount of land affected by the conversion of uses under the HST project would be a relatively small percent of the four-county study area, there is the potential for significant land use incompatibilities to occur. To reduce operation impacts, the Authority has considered avoidance and minimization measures that are consistent with commitments in the Program EIR/EIS documents. In addition, the Authority has adopted the mitigation measures for the project's station planning, land use, and development impacts, as described in Section 3.9 of these Findings. No additional measures are available to minimize or avoid significant land use impacts. The Authority will work with local governments to amend their plans to reduce the land use conflicts where appropriate. Even with these measures, the contribution of the Preferred Alternative north of 7th Standard Road to cumulative land use impacts would remain cumulatively considerable.

The Authority finds that station planning, land use, and development mitigation measures have been required in the project and that implementation of these mitigation measures would reduce,

but not completely avoid or substantially lessen the project's cumulatively considerable operational station planning, land use, and development impact. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

4.7 Agricultural Lands

Development of other past, present, and reasonably foreseeable projects, including, but not limited to, the Rockwell Pond Commercial Project in Fresno, the Live Oak Residential Project in Hanford, and the South I Street Industrial Park Specific Plan in Tulare, would result in the conversion of Important Farmland to non-agricultural uses. In addition, the HST project would require the acquisition of Important Farmland. The conversion of Important Farmland to non-agricultural uses resulting from the HST project and other past, present, and foreseeable projects would be a significant cumulative impact.

With implementation of the agricultural mitigation measure described in Section 3.10 of these Findings, impacts would be reduced through the purchase of agricultural conservation easements from willing sellers. However, because Important Farmland is irreplaceable, the contribution of the Preferred Alternative north of 7th Standard Road during project operations to cumulative agricultural impacts would remain cumulatively considerable.

The Authority finds that agricultural mitigation has been required in the project and that implementation of this mitigation measure would reduce, but not completely avoid or substantially lessen the project's contribution to the cumulatively considerable operational agricultural impact. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

4.8 Aesthetics and Visual Resources

Cumulative Construction Impacts on Aesthetics and Visual Resources

Development of cumulative projects, including oil and gas wells (e.g., Vintage Production California Oil and Gas Wells, California Department of Oil, Gas and Geothermal development Oil and Gas Well Development), solar power generation plants (e.g., the Kettleman Photovoltaic Solar Farm Project), roadway and highway improvement projects (e.g., SR 198 improvements), and residential and commercial developments (e.g., Highway 43/198 Commercial center project) in the vicinity of the HST project, would result in construction activities that would create temporary visual changes from demolition, vegetation removal, establishment of construction staging areas, and construction lighting. Even though construction activities would be temporary, due to the scale and proximity of cumulative projects listed in Appendix 3.19-A and 3.19-B of the Final EIR/EIS, including the adjacent HST sections (the Merced to Fresno and Bakersfield to Palmdale sections), the combined impacts of the cumulative projects could be significant and could overlap with construction of the Preferred Alternative north of 7th Standard Road in certain views. These construction-related cumulative impacts to visual resources could be cumulatively considerable.

Construction of the Preferred Alternative north of 7th Standard Road and other cumulative projects would also create temporary visual changes from demolition, vegetation removal, construction staging areas, construction lighting, and general construction activities. The HST project would noticeably affect the Fresno downtown area during construction. Where the cumulative projects and the Preferred Alternative north of 7th Standard Road have overlapping construction schedules and are located in close proximity, construction could result in significant cumulative visual impacts.

Implementation of the aesthetics and visual resource mitigation measure described in Section 4.9 of these findings would reduce the incremental contribution of the Preferred Alternative north of 7th Standard Road to these significant cumulative construction impacts to less-than-cumulatively-considerable levels. Because the Preferred Alternative north of 7th Standard Road does not include an alignment or station in Bakersfield, there would be no cumulatively considerable construction or operational impacts on aesthetic and visual resources that are significant and unavoidable.

The Authority finds that mitigation measures for construction impacts to aesthetic and visual resources have been required in the project and that implementation of these mitigation measures would reduce the project's cumulatively considerable construction impact on aesthetic and visual resources to less-than-cumulatively-considerable levels.

4.9 Cultural and Paleontological Resources

Under the cumulative condition, cultural resources would continue to be affected in the San Joaquin Valley urbanizing areas due to growth, changes in land use, and other types of ground disturbance. Development in the urban areas would likely result in further unearthing of sensitive archaeological resources, disturbance of traditional cultural properties, disturbance and possible damage to paleontological resources, and removal of—or changes to—the historic character and settings of historic resources. Prehistoric and historic archaeological sites would be affected during project construction activities. Prehistoric sites are common in riverbank and floodplain areas, and burial sites are sometimes encountered during ground-disturbing activities. It is likely that known and unknown archaeological resources could be disturbed and cultural resources damaged or destroyed during construction activities associated with the Preferred Alternative north of 7th Standard Road and other past, present, and reasonably foreseeable projects. Linear projects that require extensive excavation, such as the Merced to Fresno and Bakersfield to Palmdale sections of the HST, the Central Valley Independent Network Fiber Optic Communications Network Project, the Cawelo S5 Lateral to Conduit F Interconnection Pipeline, and the Caltrans SR-46 project have the potential to cause substantial adverse change to archaeological resources. Significant and unavoidable losses of unique archaeological resources (as defined in Public Resources Code Section 21083.2) or a historical resource (as defined in Section 21083.2 of CEQA and Section 15064.5 of the CEQA Guidelines) could occur if excavation exposes archaeological deposits that cannot be effectively removed or recovered due to the circumstances of their exposure (e.g., in railroad rights-of-way or urbanized settings) or if recovery would not be sufficient to prevent the loss of significant cultural resources.

Historical architectural resources could also be damaged or require removal due to implementation of the projects under the cumulative condition. Local projects and the secondary effects of redevelopment pressures around the HST stations would potentially result in the removal of historical buildings in downtown Fresno. Adverse effects on eligible resources could result in the neglect, abandonment, or removal of historic properties, by such projects as the Merced-Fresno and Bakersfield to Palmdale HST sections. Other projects could also have similar impacts on the existing built environment as the HST. If these resources meet the definition of a historical resource or a historic resource (as defined in Section 106, 36 CFR 800), their modification or destruction would be significant. The Preferred Alternative north of 7th Standard

Road could result in significant, unavoidable impacts on historic resources, as described in Section 3.17, Cultural and Paleontological Resources of the Final EIR/EIS. Therefore, construction of the HST in conjunction with past, present, and reasonably foreseeable projects under the cumulative condition could result in significant cumulative impacts to historical architectural resources.

The Preferred Alternative north of 7th Standard Road would minimize cumulative impacts on cultural resources by adhering to federal and state regulations and by providing guidance on the treatment of significant properties (as defined in the PA). Implementation of the mitigation measures for cultural resources described in Section 3.13 of these Findings such as monitoring during construction, avoidance, compliance with applicable regulations, worker training, relocation of resources, and preparation of applicable documentation would minimize impacts. However, even with implementation of these mitigation measures, the contribution of the Preferred Alternative north of 7th Standard Road to cumulative impacts would remain cumulatively considerable. The Authority finds that cultural and paleontological mitigation measures have been required in the project and that implementation of these mitigation measures would reduce, but not completely avoid or substantially lessen the project's cumulatively considerable construction impact on cultural and paleontological resources. The Authority finds that there are no other feasible mitigation measures or alternatives that would reduce this impact to a less-than-cumulatively-considerable level. To the extent that this cumulatively considerable adverse impact remains significant and unavoidable, the Authority finds that specific economic, social, and other considerations identified in the Statement of Overriding Considerations support certification of the EIR/EIS and approval of the project.

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5.0 Feasibility of Potential Alternatives

CEQA requires the lead agency, the High-Speed Rail Authority, to consider a reasonable range of potentially feasible alternatives to the proposed project (Public Resources Code, §§ 21002, 21081; see also CEQA Guidelines, § 15126.6). "Feasible" means capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, legal, social and technological factors (CEQA Guidelines, § 15364). The range of alternatives to be considered is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project (CEQA Guidelines, § 15126.6(f)). At the same time, an EIR need not study in detail an alternative that a lead agency "has reasonably determined cannot achieve the project's underlying fundamental purpose" (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165).

As discussed above, prior to moving forward with the project, CEQA requires that the lead agency find that "specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the project alternatives identified in the environmental impact report" (Public Resources Code, § 21081). The determination of infeasibility "involves a balancing of various 'economic, environmental, social, and technological factors'" (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417). Where there are competing and conflicting interests to be resolved, the determination of infeasibility "is not a case of straightforward questions of legal or economic feasibility," but rather, based on policy considerations (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001-02). "[A]n alternative that is 'impractical or undesirable from a policy standpoint' may be rejected as infeasible" (Id. at p. 1002 citing 2 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act, (Cont.Ed.Bar 2010) section 17.29, p. 824).

The key policy considerations that must be balanced in determining the feasibility of the project alternatives include the following:

- The Authority's statutory responsibility, which is to:
 - "direct the development and implementation of intercity high-speed rail service that is fully integrated with the state's existing intercity rail and bus network, consisting of interlinked conventional and high-speed rail lines and associated feeder buses. The intercity network in turn shall be fully coordinated and connected with commuter rail lines and urban rail transit lines developed by local agencies, as well as other transit services, through the use of common station facilities whenever possible" (Public Utilities Code, § 185030).
- The purpose of the statewide HST System, which is to provide a reliable high-speed electrified train system that links the major metropolitan areas of the state, and that delivers predictable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit and the highway network and relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources (Final EIR/EIS, page 1-5).
- The Authority's prior determination that serving intermediate markets in the Central Valley, rather than bypassing them, is an important component of the high-speed train system.

- The purpose of the Fresno to Bakersfield Section, which is to implement the Fresno to Bakersfield Section of the California HST System to provide the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers and connectivity to airports, mass transit, and the highway network in the south San Joaquin Valley, and connect the northern and southern portions of the system (Final EIR/EIS, p. 1-6).
- The Authority's objectives, which are:
 - Provide intercity travel capacity to supplement critically over-used interstate highways and commercial airports.
 - Meet future intercity travel demand that will be unmet by current transportation systems, and increase capacity for intercity mobility.
 - Maximize intermodal transportation opportunities by locating stations to connect with local transit, airports, and highways.
 - Improve the intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel.
 - Provide a sustainable reduction in travel time between major urban centers.
 - Increase the efficiency of the intercity transportation system.
 - Maximize the use of existing transportation corridors and rights-of-way, to the extent feasible.
 - Develop a practical and economically viable transportation system that can be implemented in phases by 2020 and generate revenues in excess of operations and maintenance costs.
 - Provide intercity travel in a manner sensitive to and protective of the region's natural and agricultural resources and reduce emissions and vehicle miles traveled for intercity trips.
- The characteristics enumerated in Streets and Highways Code section 2704.09 for the statewide high-speed train system as a whole, which include:
 - 2704.09(a) – Electric trains that are capable of sustained maximum revenue operating speeds of no less than 200 miles per hour
 - 2704.09(b) - Maximum nonstop service travel times for each corridor that shall not exceed the following:
 - (1) San Francisco-Los Angeles Union Station: two hours, 40 minutes.
 - (2) Oakland-Los Angeles Union Station: two hours, 40 minutes.
 - (3) San Francisco-San Jose: 30 minutes.
 - (4) San Jose-Los Angeles: two hours, 10 minutes.
 - (5) San Diego-Los Angeles: one hour, 20 minutes.
 - (6) Inland Empire-Los Angeles: 30 minutes.
 - (7) Sacramento-Los Angeles: two hours, 20 minutes.
 - 2704.09(c) - Achievable operating headway (time between successive trains) shall be five minutes or less.
 - 2704.9(d) - The total number of stations to be served by high-speed trains for all of the corridors described in subdivision (b) of Section 2704.04 shall not exceed 24. There shall be no station between the Gilroy station and the Merced station.

- 2704.09(e) - Trains shall have the capability to transition intermediate stations, or to bypass those stations, at mainline operating speeds.
 - 2704.09(f) - For each corridor described in subdivision (b), passengers shall have the capability of traveling from any station on that corridor to any other station on that corridor without being required to change trains.
 - 2704.09(g) - In order to reduce impacts on communities and the environment, the alignment for the high-speed train system shall follow existing transportation or utility corridors to the extent feasible and shall be financially viable, as determined by the authority.
 - 2704.09(h) - Stations shall be located in areas with good access to local mass transit or other modes of transportation.
 - 2704.09(i) - The high-speed train system shall be planned and constructed in a manner that minimizes urban sprawl and impacts on the natural environment.
 - 2704.09(j) - Preserving wildlife corridors and mitigating impacts to wildlife movement, where feasible as determined by the authority, in order to limit the extent to which the system may present an additional barrier to wildlife's natural movement.
- The ability of an alternative to comply with Clean Water Act section 404 by qualifying as the "least environmentally damaging practicable alternative" (LEDPA) in terms of adverse effects on waters of the United States and jurisdictional wetlands (Clean Water Act, section 404(b)(1)). Alternatives other than the LEDPA would not receive the federal Section 404 permit that is necessary for construction. The USACE and EPA concurred that the Preferred Alternative is the preliminary LEDPA (letters from USACE March 26, 2012 and U.S. EPA March 23, 2012).
 - Complexity of construction – Generally, construction is more complex within urban areas than in rural areas due to the necessity to minimize impacts on neighboring residences and businesses that are substantially more numerous in urban areas and the greater potential for conflicts with public utilities and infrastructure (i.e., sewer and water lines, local streets) in urban areas.
 - The inherent tradeoffs in terms of environmental impacts that occur between (1) following existing transportation corridors, minimizing impacts on the biological resources, and agricultural lands and communities, but increasing impacts on urban communities and the urban environment and (2) departing from existing transportation corridors, minimizing impacts on urban communities and the urban environment, but increasing impacts on biological resources, agricultural lands, and agricultural communities.

As discussed above in Section 2.1.2, this decision involves the Preferred Alternative north of 7th Standard Road in Kern County only. The Authority is reserving a decision on an alignment/station south of 7th Standard Road and a decision on an HMF location to a future time. The following discussion is therefore focused on the scope of the project approval at hand.

5.1 Alternatives Considered in the Project EIR/EIS and Not Selected for Approval

The Final EIR/EIS included the BNSF Alternative, which extends from the northern end of the Fresno station tracks to Oswell Street in Bakersfield, and ten alignment alternatives. The BNSF Alternative most closely follows the Authority's corridor selection decision at the conclusion of the

Statewide Program EIR/EIS process in 2005. In addition to the alignment alternatives, the EIR/EIS included HST station location and heavy maintenance facility (HMF): two station location alternatives in Fresno, two station location alternatives in the Hanford area, three station location alternatives in Bakersfield, and five HMF location alternatives. The required No-Project Alternative has also been analyzed in the EIR/EIS. These alternatives are described in detail in Chapter 2 of the EIR/EIS.

The alignment, station location, and HMF location alternatives analyzed in the EIR/EIS were all determined to be potentially feasible by the Authority and to merit study in the EIR/EIS. In these findings, the High-Speed Rail Authority Board is making the final determination of actual feasibility for alternatives that it will not select (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981). The determination of final feasibility is a necessary preliminary step before the Authority's adoption of its statement of overriding considerations (*City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341). The Final EIR/EIS is the basis for the following discussion, except where reference is made to the LEDPA or to specific statutes and plans.

5.1.1 The No Project Alternative

The **No Project Alternative** would result in no construction and operation of the HST System as a whole, or in the Fresno to Bakersfield section. This is the case because the Fresno to Bakersfield section is an essential component of the system in connecting the northern and southern portions of the state. The No Project Alternative is contrary to the Authority's 2005 programmatic decision to choose the HST System to meet the state's transportation demands instead of expanding airports or freeways, or doing nothing, and contrary to the Authority's Business Plans as submitted to the Legislature in 2012 and 2014. As a result, the No Project Alternative would not meet any of the project objectives, would not meet the project's underlying fundamental purpose, and would not allow the Authority to comply with its statutory mandate to "prepare a plan for the construction and operation of a high-speed train network for the state" (Public Utilities Code, § 185032) and of Proposition 1A (Streets and Highways Code Section 2704, et seq.) to develop an HST project. The Authority therefore finds the No Project Alternative is infeasible and rejects it on that basis.

5.1.2 Hanford Area Alternatives

The **Hanford West Bypass 1 (at-grade and below-grade) Alternative** diverges from the BNSF corridor just south of East Elkhorn Avenue. This alternative has an at-grade and a below-grade design options. The Hanford West Bypass 1 Alternative, at-grade and below-grade options would each result in four permanent road closures, affecting circulation patterns. The Hanford West Bypass 1 Alternative options would displace seven businesses and induce commercial business displacement costs. In addition, the Hanford West Bypass 1 Alternative at-grade option would displace 53 total residential units and the Hanford West Bypass 1 Alternative below-grade option would displace 52 total residential units. The Hanford West Bypass 1 Alternative options would result in indirect impacts to wetlands and the at-grade option would result in the greatest acreage of direct permanent impacts on waters of the U.S. of the Hanford Area alternatives. The Hanford West Bypass 1 (both at-grade and below-grade options) would result in the use of two Section 4(f) properties: Last Chance Ditch and 11029 Kent Avenue. The Hanford West Bypass 1 Alternative, at-grade and below-grade options, would permanently affect 842 acres of agricultural land, including potential conversion from parcel severance. This alternative does not qualify as part of the preliminary LEDPA for the HST Fresno to Bakersfield section (refer to the USACE's "Checkpoint C" determination).

The **Hanford West Bypass 2 (at-grade) Alternative** is the same as the Hanford West Bypass 1 Alternative from East Kamm Avenue to just north of Jackson Avenue. At that point, the Hanford

West Bypass 2 Alternative curves away from the Hanford West Bypass 1 Alternative to travel to the east at the intersection of Kent and Eleventh avenues toward the BNSF corridor. This alternative has an at-grade and a below-grade design option; however, this discussion will only reflect information regarding the at-grade option. The Hanford West Bypass 2 Alternative (at-grade option) would result in four permanent road closures, affecting circulation patterns. The Hanford West Bypass 2 Alternative (at-grade option) would displace seven businesses and induce commercial business displacement costs. The Hanford West Bypass 2 Alternative would displace 52 total residential units. This alternative would result in indirect impacts to wetlands and the greatest acreage of indirect impacts on waters of the U.S. of the Hanford Area alternatives. The Hanford West Bypass 2 Alternative (at-grade option) would result in a use of one Section 4(f) property: Last Chance Ditch and would permanently affect 798 acres of agricultural land, including potential conversion from parcel severance. This alternative does not qualify as part of the preliminary LEDPA for the HST Fresno to Bakersfield section (refer to the USACE's "Checkpoint C" determination).

The Hanford West Bypass alternatives would result in the conversion of fewer acres of agricultural lands to nonagricultural uses and fewer impacts to Williamson Act lands than the BNSF Alternative in this area, but because they would pass close to the communities of Grangeville and Armona, slightly more housing and business displacements and a larger number of sensitive noise receivers would be significantly impacted under these alternatives than under the BNSF Alternative. Also, these alternatives would affect a larger number of historically significant cultural resources than the BNSF Alternative. Because this alternatives would travel west of Hanford, they would provide a comparatively less effective regional station location due to being farther away from and less accessible to Tulare and Visalia. Balancing environmental impact, project purpose, long-term planning, and policy considerations, the Authority finds that the Hanford West Bypass alternatives are not environmentally superior but offer environmental impact tradeoffs to the Preferred Alternative in the Hanford area, are not part of the preliminary LEDPA for Clean Water Act section 404 purposes, and provide a less desirable location for a regional HST station than the Preferred Alternative. For these reasons, the Authority finds the Hanford West Bypass alternatives to not offer a substantial environmental advantage and to also be infeasible and rejects them for these reasons.

5.1.3 Corcoran Area Alternatives

The **BNSF (through Corcoran) Alternative** (referred to as the BNSF Corcoran Alternative) follows the BNSF right-of-way on its western side through the community of Corcoran and travels through the eastern edge of the city. The BNSF Corcoran Alternative would have the greatest displacement costs of the Corcoran area alternatives, 16 businesses, and an estimated 52 housing units. The BNSF Corcoran Alternative would also have disproportionately high and adverse noise and visual resource effects on an environmental justice community. The BNSF Corcoran Alternative would result in two permanent road closures, affecting circulation patterns. This alternative would result in impacts to wetlands and the greatest acreage of direct permanent impacts to waters of the U.S. of the Corcoran Area alternatives. The BNSF Corcoran Alternative would affect 261 acres of Important Farmland. This alternative does not qualify as the LEDPA for the HST Fresno to Bakersfield section (refer to the USACE's "Checkpoint C" determination).

The **Corcoran Elevated Alternative** is the same as the corresponding section of the BNSF Alternative from approximately Nevada Avenue to Avenue 136, except that it passes through Corcoran on the eastern side of the BNSF right-of-way on an aerial structure. The Corcoran Elevated Alternative would displace one business and three housing units. The Corcoran Elevated Alternative would also have disproportionately high and adverse noise and visual resource effects on an environmental justice community. The Corcoran Elevated Alternative would result in one permanent road closure, affecting circulation patterns. This alternative would result in impacts to wetlands and the greatest acreage of indirect impacts to waters of the U.S. of the Corcoran area

alternatives. The Corcoran Elevated Alternative would permanently affect 106 acres of Important Farmland. This alternative does not qualify as part of the preliminary LEDPA for the HST Fresno to Bakersfield section (refer to the USACE's "Checkpoint C" determination).

Balancing environmental impact and policy considerations, the Authority finds that the BNSF (through Corcoran) Alternative and the Corcoran Elevated Alternative are not environmentally superior to the Preferred Alternative in the Corcoran area (Corcoran Bypass), but offer environmental impact tradeoffs. The Authority further finds that these Corcoran area alternatives are not part of the preliminary LEDPA for Clean Water Act section 404 purposes. For these reasons, the Authority finds the BNSF (through Corcoran) Alternative and the Corcoran Elevated Alternative do not offer a substantial environmental advantage and are infeasible and rejects them for these reasons.

5.1.4 Allensworth Area Alternatives

The **BNSF (through Allensworth) Alternative** (referred to as the BNSF Allensworth Alternative) follows the BNSF corridor and passes through both the Allensworth Ecological Reserve and the Colonel Allensworth State Historic Park (Section 4[f] properties). This alternative continues to follow the BNSF corridor until it elevates over the Tule River, Deer Creek, and the Stoil railroad spur from the BNSF corridor. The BNSF Allensworth Alternative would have greater displacement costs, including the loss of nine housing units, as compared to the Allensworth Bypass. The BNSF Allensworth Alternative would also have a disproportionate effect on parks and recreation for an environmental justice community. This alternative would result in three permanent road closures, affecting circulation patterns. The BNSF Allensworth Alternative would result in greater impacts to wetlands and the greatest acreage of direct permanent, indirect-bisected, and indirect impacts to waters of the U.S. of the Allensworth Area alternatives. The BNSF Allensworth Alternative would affect 468 acres of Important Farmland. This alternative does not qualify as part of the preliminary LEDPA for the HST Fresno to Bakersfield Section (refer to the USACE's "Checkpoint C" determination).

Balancing environmental impact and policy considerations, the Authority finds that this alternative is not environmentally superior to the Preferred Alternative in the Allensworth area (Allensworth Bypass). The Authority further finds that this alternative would result in the acquisition of property from Allensworth State Historic Park and the Allensworth Ecological Reserve, and would cause unacceptable visual and noise effects on the park that are not acceptable from a policy perspective. The Authority further finds that this alternative is not part of the preliminary for Clean Water Act section 404 purposes. For these reasons, the Authority finds the BNSF (through Allensworth) Alternative does not offer a substantial environmental advantage and is infeasible and rejects it for these reasons.

5.1.5 Wasco-Shafter Area Alternatives

The **Wasco-Shafter Bypass** Alternative diverges from the BNSF Alternative between Taussig Avenue and Zachary Avenue, crossing over to the eastern side of the BNSF Railway tracks and bypassing Wasco and Shafter to the east. This alternative is at-grade except where it travels over Seventh Standard Road and the BNSF Railway to rejoin the BNSF Alternative. The Wasco-Shafter Bypass Alternative would result in visual impacts to the rural areas outside Wasco and Shafter. It would include more permanent road closures and would also affect many more historic structures. This alternative would have lower displacement costs for this segment; these costs would include the loss of one religious facility, 2 businesses, and 10 housing units. This alternative would result in lower acreage of direct permanent, direct temporary and indirect impacts to waters of the U.S. of the Wasco-Shafter area alternatives. The project would create long-term noise impacts from the introduction of a new transportation system, including potential vibration impacts, resulting in 61 severely affected receivers, a lower number than the Preferred

Alternative. The Wasco-Shafter Bypass Alternative would permanently affect 573 acres of Important Farmland and permanently convert 304 acres of Williamson Act land. This alternative does not qualify as part of the preliminary LEDPA for the HST Fresno to Bakersfield section (refer to the USACE's "Checkpoint C" determination).

Balancing environmental impact and policy considerations, the Authority finds that this alternative is not environmentally superior to the Preferred Alternative in the Wasco-Shafter area. Natural resource impacts are similar with the Wasco-Shafter Bypass alternative as with the Preferred Alternative (BNSF alternative) in the Wasco-Shafter area. Agricultural land impacts are slightly higher for the BNSF alternative, but agricultural landowners in the area have expressed that the Wasco-Shafter Bypass would cause greater interference to agricultural operations. Community impacts associated with following the BNSF corridor, including residential and business displacements, are greater than for the Wasco-Shafter Bypass alternative, but the impacts can be mitigated. From a policy perspective the Authority acknowledges the strong interest in the City of Shafter in ensuring an alternative that would not interfere with the Paramount Logistics Park, an important inland port. The Authority therefore finds in addition, to not offering a substantial environmental advantage, the Wasco-Shafter Bypass has greater technological, logistical, and cost uncertainty due to it traversing an actively growing oil field and having more active and abandoned oil wells. For these reasons, the Authority rejects this alternative as infeasible.

5.1.6 Station Alternatives

The **Fresno Station–Kern Alternative** was rejected by the Authority in 2012 in favor of the Fresno-Station-Mariposa Alternative, for the reasons set forth in the Authority's May 2012 CEQA Findings of Fact attached to resolution # HSRA12-20. The Fresno Station-Mariposa Alternative has formed the basis for the Authority's planning subsequent to May 2012. The Authority rejects the Fresno Station-Kern Alternative on this basis.

The **Kings/Tulare Regional Station–West Alternative** would be located east of 13th Avenue and north of the San Joaquin Valley Railroad on the Hanford West Bypass 1 and 2 alternatives. The station would only be chosen if Hanford West Bypass alignment is chosen. The Preferred Alternative is the BNSF Alternative-Hanford East. Therefore, this station alternative is rejected as it would not serve the BNSF Alternative-Hanford East Alternative.

5.2 Alternatives Suggested by Commenters

Comments on both the Draft EIR/EIS and Revised Draft EIR/Supplemental Draft EIS suggested a number of additional alternatives that the commenters believed merited consideration and analysis in the EIR/EIS. These include the following general proposals:

- Build the HST project completely within/along existing San Joaquin Valley Railroad (SJVR) corridor.
- Build the HST project completely within/along UPRR/SR99 corridor.
- Build the HST project completely within BNSF corridor.
- Build the HST project along the I-5 corridor only.
- Build the HST project along the I-5 corridor alignment with spur connections to Fresno and Bakersfield.
- Build the HST project all underground or on viaduct.
- Improve the existing Amtrak line in order to provide faster service along that line and do not build a HST project.
- Build the HST line around Bakersfield instead of through Bakersfield.

If an EIR contains a reasonable range of alternatives, it is not deficient for excluding analysis of other potential alternatives suggested in comments by members of the public or agencies. The

Authority finds that the EIR/EIS included a reasonable range of alternatives and that the range of alternatives was sufficient to permit a reasoned choice. The Authority therefore finds that no further alternatives were required to be evaluated in the EIR/EIS.

The Authority further finds that the alternatives suggested in comments are not environmentally superior, do not adequately meet the project purpose/objectives, and/or are infeasible for the reasons summarized below, and considering the policy factors discussed above in section 6.0.

Build the HST Project Within/Along Existing Transportation Corridors (SJVR). This suggested alternative is discussed in FB-Response-GENERAL-02 in the Final EIR/EIS, which is hereby incorporated by reference. A HST alignment paralleling the SJVR on the east side of the San Joaquin Valley would not have fewer impacts than the alternatives considered in the environmental document. An alignment that paralleled the SJVR from Fresno to Bakersfield was considered in response to public comments. Existing transportation corridors, specifically, the San Joaquin Valley Railroad rail lines, are not designed to accommodate HST service. The SJVR Alternative was compared with the BNSF Alternative using the principal environmental screening parameters that were considered for the initial evaluation of potential alternatives for the Fresno to Bakersfield Section.

The SJVR Alternative may have fewer impacts to special aquatic resources than the BNSF Alternative; however, initial screening indicates that the SJVR Alternative would have greater impacts to farmlands and urban centers than the BNSF Alternative. The SJVR Alternative passes through a region of the San Joaquin Valley that is as intensely cultivated as the area crossed by the BNSF Alternative. Between Fresno and Bakersfield, the BNSF Alternative would cross through the communities of Corcoran, Wasco, and Shafter. The SJVR Alternative would cross through the communities of Reedley, Dinuba, Ivanhoe, Exeter, Lindsay, Shafter, and Richgrove, twice as many as the BNSF Alternative. The SJVR Alternative would be approximately 11 miles longer than the BNSF Alternative and would add about 3 minutes to the travel time between Fresno and Bakersfield. Because the SJVR Alternative is substantially longer than the BNSF Alternative and crosses through more communities, the capital cost for constructing the HST on this alignment is likely to be higher than the construction costs for the BNSF Alternative. Because the overall environmental impacts of the SJVR Alternative are similar to or greater than the BNSF Alternative and the SJVR Alternative would increase travel time and project costs, the SJVR Alternative is not superior to alternatives that were evaluated and was not considered further. The Authority therefore finds that a SJVR alternative is not environmentally superior to the alternatives in the EIR/EIS, offers no substantial environmental advantage, and due to additional alignment length will be both substantially more costly and less effective at meeting the project's fundamental purpose and most project objectives, and rejects it as infeasible for these reasons.

Build the HST Project Within/Along Existing Transportation Corridors (UPRR/SR 99). This suggested alternative is discussed in FB-Response-GENERAL-02 in the Final EIR/EIS, which is hereby incorporated by reference. The SR 99/UPRR corridor was evaluated in the Statewide Program EIR/EIS for the California HST System (Authority and FRA 2005) and was not selected as the preferred corridor for the Fresno to Bakersfield Section. Alternative alignments within the SR 99/UPRR corridor were re-evaluated for the Fresno to Bakersfield Section. That analysis is provided in the Checkpoint B Summary Report (Authority and FRA 2011). The HST alignment in the SR 99/UPRR corridor presents a number of significant logistical conflicts that involve existing infrastructure that makes the alternative not practicable from a Clean Water Act section 404 perspective and not potentially feasible from a CEQA perspective. These conflicts are unique to this alignment, and many of them are interrelated, especially those involving UPRR tracks. HST design and construction to resolve these conflicts would inhibit or even foreclose nearby desired public and private investment and development. These logistical conflicts could also result in litigation that would further delay the project or potentially preclude the placement of the HST in this corridor.

The UPRR has expressed its concerns in writing on several occasions regarding both the issue of public safety (liability risk) and that of access to customers (commercial risk). The UPRR has stated that it believes that construction of project facilities within or near its right-of-way would expose it to a significant and unmanageable increase in financial risk due to the creation of new hazards. It also maintains that the project would result in both displacement of existing customers, and a "walling off" of miles of its right-of-way to potential future customers. Based on these concerns, active opposition by the UPRR would result in (1) adverse impact on project schedule (delay); and (2) adverse impact on project cost. In addition, the SR 99/UPRR alignment alternative would require the reconstruction of four interchanges along SR 99 and the interchange at SR 99 and SR 198. These interchanges are currently constrained by UPRR. Due to the existing constraints on the roadway and interchange configurations, a new design would require exceptions to the Caltrans design standards. These design exceptions would decrease the safety of the driving public by exposing them to features below the current state highway design standards. The constraints that the existing corridors place on high-speed operations make remaining totally within those corridors infeasible; therefore, these alternatives were not evaluated further.

The Authority therefore finds that an UPRR/SR99 alternative has substantial technological, logistical, legal, economic, and policy problems and rejects it as infeasible for these reasons.

Build the HST Along the I-5 Corridor Only. This suggested alternative was previously considered and rejected for further study in decisions by the Authority and the FRA on the 2005 Final Statewide Program EIR/EIS, as explained in Section 2.3.2 and FB-Response-GENERAL-02 of the Final EIR/EIS, which are hereby incorporated by reference. As described in the Final EIR/EIS and in the various documents supporting the EIR/EIS, operating the HST along the I-5 corridor would not meet the critical objective of maximizing intermodal transportation opportunities because there are no intermodal opportunities, such as transit and airport connections, along the lightly populated I-5 corridor. This suggested alternative would also conflict with Streets and Highways Code Section 2704.09(h) which provides that "stations shall be located in areas with good access to local mass transit or other modes of transportation." In addition, because the corridor is lightly populated, the installation of stations there would necessarily be growth-inducing by stimulating currently unplanned development in the areas around the stations. Also, since the I-5 corridor is not where the bulk of the Central Valley population resides, the I-5 corridor would result in lower ridership and would not meet the current and future intercity travel demand generated by the Central Valley communities as well as the Central Valley corridor. Further, traffic between the existing population centers along SR99 to the stations would stimulate development along the connecting roads. This would conflict with the directive of Streets and Highways Code Section 2704.09(i) and the important policy consideration to minimize urban sprawl.

The lack of population along the I-5 corridor and the comparative population of the I-5 corridor and the BNSF corridor in the Central Valley is equally compelling today as it was in the 2000-2005 Statewide Program EIR/EIS timeframe. The Authority therefore finds that an I-5 corridor alternative is not environmentally superior to the alternatives in the EIR/EIS, offers no substantial environmental advantage, cannot meet the underlying fundamental purpose of the project, or most project objectives, and rejects it as infeasible for these reasons.

Build the HST along the I-5 Corridor with Spur Connections to Fresno and Bakersfield. Another suggested alternative involves an HST alignment on the I-5 corridor, but with spur tracks to reach the population centers in Fresno and Bakersfield. The concept of linking the I-5 corridor to Fresno and Bakersfield with spur lines was considered at the program level, but dismissed, because it would add considerably to the I-5 corridor capital costs and would still have the same lower ridership figures. Use of the I-5 corridor with spur tracks would also encourage sprawl development, which is the opposite of what the HST System is intended to achieve, and which

was opposed by numerous agencies, including the U.S. Environmental Protection Agency (USEPA). In addition, the use of spur tracks to reach Bakersfield and Fresno would add approximately 24 and 52 miles of track, respectively. To reach the Hanford area would require about 34 miles of spur tracks. The extensive addition of spur tracks would result in many of the same impacts as the Preferred Alternative, including conversion of Important Farmland, impacts to species and habitats, and impacts to communities, the only difference would be the location of the impact. The cost of this alternative, would nearly double the amount of track between Bakersfield and Fresno, would be also be substantially greater. The Authority therefore finds that this suggested alternative is not environmentally superior, does not offer a substantial environmental advantage, would be less capable of meeting the project's underlying fundamental purpose and project objectives than the Preferred Alternative, and would be economically infeasible by requiring nearly double the amount of track as the alternatives studied in the EIR/EIS, and therefore rejects this alternative as infeasible.

Build the HST All Underground or on Viaduct. This suggested alternative would involve vertical profile variations. The HST could theoretically be placed below grade in a cut embankment with 2:1 slopes, a vertical trench with concrete walls, or a tunnel. As described in Chapter 2 of the EIR/EIS, the electrical contact system for the trains would consist of a series of mast poles approximately 23.5 feet higher than the top of the rail. Therefore, the HST would need to be at a depth of about 40 feet for the whole system to be below grade.

A cut embankment through urban areas (or for the entire length of the alignment) was not considered feasible because of the required width of the right-of-way. With 2:1 slopes, a 40-foot deep cut with a bottom width of 120 feet would have a width at the surface of 160 feet. This would result in a substantial increase in the amount of properties that would have to be acquired resulting in greater impacts to communities and landowners crossed by the project. Placing the HST in a trench or tunnel would increase the project costs by more than one to two orders of magnitude, essentially making the project economically infeasible. The costs of constructing an at-grade foundation for HST tracks, a 40-foot-deep trench, and a tunnel were estimated using the unit price analysis method as described in the Engineering Technical Memoranda 1.1.19 and 1.1.22 available on the Authority's website. This method of cost estimating was typically used to develop costs for complex construction elements, including but not limited to viaducts, retained earth systems, tunneling, and underground structures.

Using basic cost data that were input into the database estimating program, the civil construction costs (i.e., the costs of clearing the right-of-way and constructing the embankment for the HST rails and contact system) for an at-grade section of the HST System are estimated to be about \$2.5 million/mile. The civil construction costs for an elevated structure like that proposed for downtown Bakersfield is a maximum of about \$84 million/mile. The civil construction costs for a 40-foot deep trench would be approximately \$121 million/mile for two tracks. The civil construction costs for a tunnel would depend on the soil conditions in the area and the type of tunneling method but would vary from approximately \$183 to \$495 million/mile for two tracks.

The Authority therefore finds that alternatives designed all above grade on a viaduct or all below grade in a trench or tunnel or sufficiently cost prohibitive as to be economically infeasible and rejects these alternatives for this reason.

Build the HST Project Completely Within Existing Transportation Corridors (BNSF/UPRR).

This suggested alternative includes commenter proposals to (1) build the HST alignment completely within the UPRR or BNSF corridors; or (2) to use these existing tracks for the HST. The suggested alternative to build the HST alignment completely with one of the existing freight rail corridors cannot meet the project's fundamental underlying purpose or objectives because

extended portions of these existing freight rail rights of way are not sufficiently straight to accommodate the design speed of the HST. To meet the design criteria for 220 mph train speeds, it will be necessary to have extensive divergence from the freight rail corridors to maintain sufficiently high speeds. For this technological reason, the Authority finds that an alternative that is constructed entirely within an existing freight rail corridor is infeasible and rejects it.

The suggested alternative to use the existing freight rail tracks for HST also cannot meet the project's fundamental underlying purpose or objectives because the existing UPRR and BNSF railroad rights of way cannot support 220 mph passenger service on the existing tracks. Neither the existing tracks nor the railroad bed were built to accommodate or meet minimum safety standards for high-speed rail operations. To meet the project safety requirements, dedicated track is needed where high-speed trains will travel at speeds of 220 mph. For these technological reasons, the Authority finds that an alternative that uses existing freight rail tracks is infeasible and rejects it.

Improve the Existing Amtrak Line and Do Not Build HST. This suggested alternative is discussed in FB-Response-GENERAL-2 in the Final EIR/EIS, which is hereby incorporated by reference. The underlying, fundamental purpose of this project is to construct and operate *high-speed* train service. The project is therefore designed to meet established HST performance criteria, as described in Table 2-1 of the Final EIR/EIS. The performance criteria include a system capability of traveling from San Francisco to Los Angeles in approximately 2 hours 40 minutes, and capability of safe, comfortable, and efficient operation at speeds over 200 mph. The Fresno to Bakersfield section of the HST System is critical to the overall ability to operate at high speeds (220 mph) and to achieve the fast travel times. Improving existing Amtrak lines would therefore fail to meet the project's underlying, fundamental purpose and the Authority rejects the alternative as infeasible for this reason.

Build the HST Around Bakersfield Instead of Through. This suggested alternative is discussed in FB-Response-GENERAL-25 in the Final EIR/EIS, which is hereby incorporated by reference. The Authority finds that additional alternatives for the Bakersfield area are not necessary because the Final EIR/EIS already has a reasonable range of alternatives in this area that permits a reasoned choice. The Authority further finds that it is not necessary to reject such alternatives now, in terms of decision making, because the Authority is not approving an alignment or station south of 7th Standard Road in Kern County.

5.3 Alternatives Previously Considered and Not Carried Forward for Study in the EIR/EIS

The Authority has undergone an extensive and public screening process for alternatives to study in the Project EIR/EIS. The many potential alternatives considered, but eliminated from detailed study, are summarized in Chapter 2 of the Final Project EIR/EIS and considered in the Preliminary Alternatives Analysis Report (June 2010), Supplemental Alternatives Analysis Report (September 2010), Supplemental Alternatives Analysis Report (May 2011), and Supplemental Alternatives Analysis Report (December 2011). The Authority finds that each potential alternative considered in these documents and not carried forward into the EIR/EIS for detailed study was appropriately eliminated. Such potential alternatives either failed to adequately meet the project purpose and need/project objectives, failed to offer a substantial environmental advantage to one or more of the alternatives studied in the EIR/EIS, and/or were deemed to not be feasible from a cost, technical, or engineering perspective. The Authority therefore finds all such alternative to be infeasible.

5.4 Preferred Alternative

The selection of the Preferred Alternative over the BNSF Alternative and other alternative alignments that deviate from the BNSF Alternative involves a series of tradeoffs and balancing considerations. Each of the north/south alignments presents different types and degrees of environmental impacts.

The Preferred Alternative is the combination of several alternative alignments and sections of the BNSF Alternative. The Preferred Alternative comprises the Hanford West Bypass 2 Alternative, below-grade option; the Corcoran Bypass Alternative; the Allensworth Bypass Alternative; the Wasco-Shafter Bypass Alternative; and the Bakersfield Hybrid Alternative. Of the 72 possible combinations of alternatives, the Preferred Alternative is the second most cost-effective alternative, costing an estimated \$6.82 billion, including the cost of property acquisition. This cost is about \$800 million less than the cost of the BNSF Alternative, which was selected in the Tier 1 document as the preferred alignment. The Preferred Alternative would have one of the shortest overall total lengths of track (114 miles), which would mean fewer acquisitions and relocations of properties purchased for the HST System. Also, the shorter track length of the Preferred Alternative would provide a travel time of 00:33:16, which is over 00:02:16 shorter than the time associated with the longest potential alternative. The Preferred Alternative would also have one of the shortest total lengths of elevated structures (26 miles) of the potential alternatives. The shorter the total length of elevated structures, the less the overall construction cost. Crossings over and under existing highways and roadways also pose special logistical concerns, both during construction and for operation and maintenance. The Preferred Alternative has 191 roadway crossings, which is only 3 more than the number of crossings associated with the BNSF Alternative (188). Although the Preferred Alternative has a greater total number of roadway crossings than the BNSF Alternative, the crossings associated with the Preferred Alternative would mostly occur in less-developed rural areas, which would offer greater ease and flexibility in construction than would roadway overcrossings and undercrossings in urban areas, where the overcrossings and undercrossings associated with the BNSF Alternative are situated. Also, rural road closures would typically affect a smaller volume of vehicle traffic than would road closures in urban cores. The Preferred Alternative would result in permanent conversion of Important Farmland to nonagricultural use (including potential conversion from parcel severance), permanent access severance, conflicts with farmland protection contracts (e.g., Williamson Act contracts), and indirect effects on dairies or other confined animal facilities. Impacts to Important Farmland would be less under the Preferred Alternative than under the BNSF Alternative. The Preferred Alternative would result in fewer effects on community resources than the BNSF Alternative. Overall, in balancing the effects on the natural and community resources, the Preferred Alternative minimizes environmental impacts the most. Of the alternative alignments, it would qualify as the LEDPA for issuance of the necessary Section 404 permits. Overall, the Preferred Alternative best meets the regulatory requirements and balances the minimization of impacts on the environment. It would avoid the greater impacts on the environment and the Ponderosa community east of Hanford, which the BNSF Alternative would divide, and would avoid the greater impacts on more urban areas, such as in the cities of Corcoran and Allensworth.

The Authority finds that the Preferred Alternative is the environmentally superior alternative overall that best meets the project purpose and need and project objectives.

5.5 Conclusion on Alternatives

In summary, the Authority finds that there are no feasible alternatives that would avoid or substantially lessen the significant adverse impacts of the Preferred Alternative that would remain after application of mitigation measures, while still meeting the project's underlying purpose and

project objectives. Because adverse environmental impacts remain, the Authority will adopt a Statement of Overriding Considerations, as discussed in the following chapter.

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6.0 Mitigation Measures Suggested by Commenters

Some of the comments on the Draft EIR/EIS and the Revised Draft EIR/Supplemental Draft EIS suggested additional mitigation measures and/or modifications to the measures recommended in these documents. Some comments also suggested additions to the project that are not necessarily connected to an adverse environmental impact. The mitigation measures recommended in the Draft EIR/EIS and Revised Draft EIR/Supplemental Draft EIS represent the professional judgment of subject matter experts on reasonable and feasible approaches to reduce significant adverse environmental impacts. Nevertheless, in many instances, the Authority and FRA have incorporated suggestions from comments to refine or improve mitigation. This discussion explains the reasons for not incorporating certain of the mitigation measures suggested in comments. The Authority considered the following points in determining whether to include a mitigation measure suggested in comments:

- Whether the suggestion relates to a significant and unavoidable environmental effect of the project, or instead relates to an effect that is already less than significant or can be mitigated to less than significant levels by proposed mitigation measures in the Draft EIR/EIS and the Revised Draft EIR/Supplemental Draft EIS;
- Whether the proposed language represents clear improvement, from an environmental standpoint, over the draft language that a commenter seeks to replace;
- Whether the proposed language is sufficiently clear as to be easily understood by those who will implement the mitigation as finally adopted;
- Whether the language might be too inflexible to allow for pragmatic implementation;
- Whether the suggestions are feasible from an economic, technical, legal, policy, or other standpoint;
- Whether the measure addresses an impact not caused by the HST project; and
- Whether the measure addresses a social or economic impact, as opposed to an impact on the physical environment.

Authority staff, with assistance from subject matter experts, has carefully considered mitigation measures proposed in comments. The following identifies suggestions for mitigation measures which the Authority has not incorporated and the rationale for not including the measure. The list below is not intended to be exhaustive; to the extent that suggestions on mitigation measures that were rejected are not identified below, the Authority finds, based on the analysis contained in the Final EIR/EIS and the record as a whole, that such suggestions are appropriately rejected for one or more of the reasons identified above.

Section 3.2, Transportation and Traffic

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they do not offer clear environmental benefits over the mitigation measures already incorporated and adopted by the Authority.

- Intersection #6 (SR 99 NB Ramps/Ventura Avenue): The intersection will meet signal warrants at the time of HST project completion. Road closures will increase traffic to this location and therefore the HST project should install the traffic signal with the initial project construction (Vol. IV, City of Fresno comment).

This mitigation measure is similar to the mitigation measures already incorporated in the project and does not offer any environmental benefits over the Authority's proposed mitigation measures. In particular, the FRA and the Authority will implement Mitigation Measure TR-MM#3 (Add Signal to Intersection to Improve LOS/Operation), this mitigation measure would add traffic signals to affected non-signalized intersections surrounding proposed HST station locations to improve LOS and intersection operation. Prior to the completion of civil work, the Authority shall install a traffic signal.

- Signalization/channelization to maintain local government LOS standards (Vol. IV, Kern Council of Governments comment).

This mitigation measure is similar to the mitigation measures already incorporated in the project and does not offer any clear environmental benefits over the Authority's adopted mitigation measures. In particular, the Authority will implement Mitigation Measure TR-MM#3 (Add Signal to Intersection to Improve LOS/Operation), this mitigation measure would add traffic signals to affected non-signalized intersections surrounding proposed HST station locations to improve LOS and intersection operation, and Mitigation Measure TR-MM#7: Add Exclusive Turn Lanes to Intersections, this mitigation measure would add exclusive turn lanes at specific intersections to improve LOS and intersection operations. Prior to the completion of civil work, the Authority shall construct improvements.

Measure Addresses an Impact that is Less than Significant. The following mitigation measures were not adopted because activities are part of the proposed project actions and impacts would be less than significant.

- The following additional mitigation is proposed by Kern Council of Governments:
 - a. Minimize impacts during rail construction by staggering truck routing between construction and aggregate source sites.
 - b. Monitor loaded aggregate truck weight to minimize degradation of existing road pavement conditions.
 - c. Fix any road condition degradation created by violence of loaded truck weight.
 - d. Ship aggregate via rail car rather than truck, whenever possible to minimize impacts to road system pavement as well as air quality and GHG emissions (Vol. IV, Kern Council of Governments comment).

As part of the project, the FRA and the Authority will implement Design Feature 5, Construction Truck Routes; this feature requires delivery of all construction-related equipment and materials on the appropriate truck routes and prohibits heavy-construction vehicles from accessing the site via other routes, Design Feature 6, Protection of Public Roadways during Construction; the feature requires repair any structural damage to public roadways, returning any damaged sections to their original structural condition, surveys of the condition of the public roadways along truck routes providing access to the proposed project site both before construction and after construction is complete, and a before- and after-survey report and submit to the Authority for review, indicating the location and extent of any damage, and Design Feature 8, Construction Transportation Plan; which the design-builder will prepare a detailed Construction Transportation Plan for the purpose of minimizing the impact of construction and construction traffic on adjoining and nearby roadways. The Construction Transportation Plan will be prepared in close consultation with the pertinent city or county, and will be reviewed and approved by the Authority before commencing any construction activities. This plan will address, in detail, the activities to be carried out in each construction phase, with the requirement of maintaining traffic flow during peak travel periods. Such activities include, but are not limited to, the routing and

scheduling of materials deliveries, materials staging and storage areas, construction employee arrival and departure schedules, employee parking locations, and temporary road closures, if any. The plan will provide traffic controls pursuant to the *California Manual on Uniform Traffic Control Devices* sections on temporary traffic controls (Caltrans 2012).

- The HST project shall be responsible for the following mitigation measures within the City of Wasco:
 1. All existing road crossings to be re-constructed as grade separations.
 2. All roadway grade separations to be constructed to Ultimate Street design width per city's master plan circulation.
 3. If the HST crosses Highway 46 at-grade, the grade-separation shall be constructed as an underpass for Highway 46 at a width and design per Segment 3 of Caltrans Project Report for Highway 46 improvements (Vol. V, City of Wasco comment).

The city of Wasco has the potential to be affected by the BNSF Through-Wasco Alternative; however, the HST is proposed to be located on an elevated structure from First Street for a distance of about 3 miles and return to grade north of Kimberlina Road. No roads are proposed to be closed, and all crossings will be grade-separated.

- Commit in the Final EISs to design and construct stations to be pedestrian and bicycle-friendly by incorporating features such as bike lockers, changing rooms, and showers (Vol. IV, U.S. Environmental Protection Agency comment).

The Authority prepared and distributed Urban Design Guidelines (Authority [2010] 2011b) available on the Authority's website to provide assistance in urban planning for the stations to help achieve great placemaking. The guidelines are based on international examples where cities and transit agencies have incorporated sound urban design principles as integrated elements of large-scale transportation systems. The application of sound urban design principles to the HST System will help to maximize the performance of the transportation investment, enhance the livability of the communities it serves, create long-term value, and sensitively integrate the project into the communities along the HST System corridor. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in land use planning in the areas surrounding the stations.

- Adequate parking, including long-term parking (Vol. IV, Kern Council of Governments comment).

The proposed station would include a passenger drop-off area at the entrances to the station or in the parking area. The station parking areas would accommodate approximately 2,300 parking spaces at the Bakersfield Station. These parking facilities would be designed to accommodate demand and to avoid overflow parking on nearby area streets. Since the HST project includes a plan to provide adequate station parking, minimal impacts on the existing downtown parking conditions are expected. The Final EIR/EIS concluded these effects would be a less-than-significant impact.

- Design and construction of stations to be pedestrian and bicycle-friendly by incorporating features such as bike lockers, changing rooms, and showers (Vol. V, U.S. Environmental Protection Agency comment).

The Authority prepared and distributed Urban Design Guidelines (Authority [2010] 2011b) available on the Authority's website to provide assistance in urban planning for the stations to help achieve great placemaking. The guidelines are based on international examples where cities

and transit agencies have incorporated sound urban design principles as integrated elements of large-scale transportation systems. The application of sound urban design principles to the HST System will help to maximize the performance of the transportation investment, enhance the livability of the communities it serves, create long-term value, and sensitively integrate the project into the communities along the HST System corridor. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in land use planning in the areas surrounding the stations.

Measure Addresses an Impact Not Caused by the HST Project. The following mitigation measures were not adopted because the impact would not be caused by the HST project.

- Construct a pedestrian bridge crossing the HST and BNSF rail facilities along the 6th Street alignment (Vol. V, City of Wasco comment).

The BNSF Alternative would be located on an elevated structure when crossing 6th Street, and therefore would have to be grade-separated from pedestrian crossings.

- Provide connectivity alternatives for Wasco residents who wish to take Amtrak (Vol. IV, City of Wasco comment).

The HST project will not discontinue Amtrak service in Wasco. The mitigation measure is therefore not necessary.

- As mitigation, a bike path facility adjacent to the HST alignment should be provided to connect Wasco and Shafter with the Bakersfield bike path system (Vol. IV, Kern Council of Governments comment).

The HST project will not preclude the future development of a bike path or the Kern County Bicycle Plan. This measure is not needed, however, to reduce a significant impact of the project.

Measure Does Not Address an Impact on the Environment and/or Measure Addresses an Impact that is Less than Significant. The following mitigation measures were not adopted because the impact is not an impact on the environment and/or because they address an impact that is less than significant or will be less than significant with implementation of the adopted mitigation measures.

- Similar to an airport surcharge, a mitigation mechanism will be needed to fund the feeder bus system, such as a ticket surcharge supporting local bus and rail transit (Vol. IV, Kern Council of Governments comment).
- Local transit service improvements to Bakersfield high-speed rail station, including an additional adjacent transit center and additional ingress/egress improvements for the buses (Vol. IV, Kern Council of Governments comment).
- GET service to Meadows Field (Airport) will require capital and/or operational enhancements to provide additional transit service.
- KRT, the intercity transit service for Kern County, will require and/or operational enhancements to provide feeder routes to the Bakersfield high-speed rail station from Arvin/Lamont, Frazier Park, Taft/Maricopa, Shafter/Wasco, and McFarland/Delano (Vol. IV, Kern Council of Governments comment).
- Funding for these projects should be provided as a mitigation measure (Vol. IV, Kings County Association of Governments comment).

The project would not result in a significant adverse impact to the regional transportation system. Local bus feeder/transit service is not in the project's scope; however, the HST will not preclude future or impede existing intracity and intercity bus/transit routes. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of transit service with the high-speed rail and to update land use plans in the areas surrounding the stations.

- As part of transit connectivity plans, commit to working with local agencies to develop features to facilitate easy transfers between local transit and HST, such as shared ticketing, wayfinding for local transit within HST stations, and other features (Vol. IV, U.S. Environmental Protection Agency comment).

The project would not result in a significant adverse impact to the regional transportation system. Local bus feeder/transit service is not in the project's scope; however, the HST will not preclude future or impede existing intracity and intercity bus/transit routes. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of transit service with the high-speed rail and to update land use plans in the areas surrounding the stations.

- Commit to coordinate with car share organizations and promoting use of shared vehicles at HST stations to provide an additional alternative to car ownership (Vol. IV, U.S. Environmental Protection Agency comment).
- Coordination with car share organizations and promote use of shared vehicles at HST stations to provide an additional alternative to car ownership (Vol. V, U.S. Environmental Protection Agency comment).
- Coordination transit service and/or ride-sharing to connect HMF sites to population centers, to promote an alternative to single-occupant vehicles for employee's commutes (Vol. V, U.S. Environmental Protection Agency comment).

A car share program is not in the project's scope; however, the HST will not preclude future or impede existing programs. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of alternative transit service with the high-speed rail and to update land use plans in the areas surrounding the stations. Further, with implementation of the adopted mitigation measures, the project would not result in any significant and unavoidable air quality impacts; therefore, this recommendation is not necessary to further reduce the project's air quality impacts.

- Features to facilitate easy transfer between local transit and HST, such as shared ticketing, wayfinding for local transit with HST stations, and other features (Vol. V, U.S. Environmental Protection Agency comment).

The project would not result in a significant adverse impact to the regional transportation system. Local bus feeder/transit service is not in the project's scope; however, the HST will not preclude future or impede existing intracity and intercity bus/transit routes. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of transit service with the high-speed rail and to update land use plans in the areas surrounding the stations.

- Kern Council of Governments requests that mitigation include funding for dedicated van pools or bus rapid transit for employees to reduce vehicle trips and emissions (Vol. V, Kern Council of Governments comment).

Local bus feeder/transit service is not in the project's scope; however, the HST will not preclude future or impede existing intracity and intercity bus/transit routes. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of transit service with the high-speed rail and to update land use plans in the areas surrounding the stations. Further, with implementation of the adopted mitigation measures, the project would not result in any significant and unavoidable air quality impacts; therefore, this recommendation is not necessary to further reduce the project's air quality impacts.

- Enter an agreement with the Amtrak service provider and other appropriate entities to avoid reduction of the existing number of Amtrak San Joaquin trains servicing the stops along the BNSF between Bakersfield and Fresno. Interim use of the Initial Construction Segment (ICS) should only use additional trainsets, and not simply take the Amtrak San Joaquin service off the BNSF and move them over to the ICS, thereby eliminating Amtrak Service to Hanford, Corcoran, Allensworth and possibly Wasco. The agreement should include a commitment to use revenue from other parts of Amtrak San Joaquin Service to help keep service to these communities open (Vol. V, Kern Council of Governments comment).

Any potential interim use of the ICS is not being determined now as part of the current project, although the Final EIR/EIS describes how such interim use by Amtrak might occur. It is anticipated that any service on the ICS by Amtrak would be additive to existing service. No reduction in existing transportation service is anticipated.

- Enter an agreement with the Amtrak service provider and other appropriate entities to add additional train stops to the Amtrak San Joaquin service between Fresno and Bakersfield. Acquire property; build platforms, parking, access and amenities as appropriate. These stations would be serviced by the existing 12 Amtrak San Joaquin trains per day as regular or requested stops (i.e., Allensworth), with locations consistent with the Kern Commuter Rail Study (http://www.kerncog.org/docs/studies/Kern_County_Short_Line_Rail_Study_2011.pdf) or other appropriate studies. These stations would provide opportunities for additional riders to mitigate the shift to HST or interim ICS use (Vol. V, Kern Council of Governments comment).

The project would not result in a significant adverse impact to the regional transportation system. Improvements and additions to the Amtrak system are not part of the HST project. The HST project will not preclude Amtrak or any other entity from adding additional stops to the Amtrak system.

- Add a station to the Amtrak San Joaquin service at the site of the future HMF as early as possible. This station would provide additional ridership to the existing San Joaquin service from commuters and visitors. Relocate HST Authority staff offices to the HMF prior to interim use of the ICS or the Initial Operating Segment (IOS) to help offset the loss of ridership revenue while providing opportunity for closer oversight of the ICS construction (Vol. V, Kern Council of Governments comment).

This is a thoughtful planning suggestion that the Authority will consider as it continues to plan for operation of electrified passenger service. The suggestion, however, does not address a significant environmental impact. The project would not result in a significant adverse impact to the regional transportation system. Improvements and additions to the Amtrak system are not part of the HST project. The HST project will not preclude Amtrak or any other entity from adding additional stops to the Amtrak system.

- Provide additional Amtrak Thru-Way connector bus service for the additional trains using this ICS for express service to connect between San Jose Caltrain/Fresno, Stockton Altamont

Commuter Express (ACE)/Fresno, and Bakersfield/So. Cal MetroLink. This service would need to remain in place until the HST service can be extended to make these connections to other existing passenger rail service in California (Vol. V, Kern Council of Governments comment).

The project would not result in a significant impact to the regional transportation system. Improvements and additions to the Amtrak system are not part of the HST project. The HST project will not preclude Amtrak or any other entity from adding additional stops to the Amtrak system.

- Provide additional Amtrak Thru-Way connector bus service to communities for which passenger rail revenue no longer is able to support service at current subsidy levels despite implementation of all mitigation efforts. When connector bus ridership levels demonstrate that service would be viable once again, re-establish passenger rail service (Vol. V, Kern Council of Governments comment).

The project would not result in a significant adverse impact to the regional transportation system. Improvements and additions to the Amtrak system are not part of the HST project. The HST project will not preclude Amtrak or any other entity from adding additional stops to the Amtrak system.

- If passenger rail revenue is no longer able to support service at normal subsidy levels, enter into an agreement with the appropriate entities to preserve existing scheduled passenger rail slots on the BNSF corridor along with trainsets and equipment to ensure that ridership can be re-established (Vol. V, Kern Council of Governments comment).

The project would not result in a significant adverse impact to the regional transportation system. Improvements and additions to the Amtrak system are not part of the HST project. The HST project will not preclude Amtrak or any other entity from adding additional stops to the Amtrak system.

- Provide feeder routes to the Bakersfield station from Arvin/Lamont, Frazier Park, Taft/Maricopa, Shafter/Wasco, and McFarland/Delano. This mitigation measure will also enhance HST ridership and improve the viability of the system (Vol. V, Kern Council of Governments comment).

The project would not result in a significant adverse impact to the regional transportation system. Local bus feeder/transit service is not in the project's scope; however, the HST will not preclude future or impede existing intracity and intercity bus/transit routes. The Authority and FRA have also provided planning grants for cities that could have an HST station to assist them in planning for the integration of transit service with the high-speed rail and to update land use plans in the areas surrounding the stations.

Section 3.4, Noise and Vibration

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they are similar to, and otherwise do not offer clear environmental benefits over, the mitigation measures already incorporated and adopted by the Authority.

- Ensure an interior L_{dn} of 45 dB or less within the hospital (Vol. V, Mercy Hospital comment).

Noise impacts have been calculated for all floors of the hospital, and the proposed mitigation will protect each of the floors of the hospital. The Authority will, however consider this suggestion in conjunction with future decisions regarding an alignment through Bakersfield.

- Noise mitigation measures should include the source treatments, which include vehicle noise specifications, wheel treatments, vehicle treatments, and guideway support (Vol. V, Mercy Hospital comment).

This measure is similar to, and not a clear improvement over, N&V-MM#4: Vehicle noise specifications, and N&V-MM#5: Special trackwork at crossovers and turnouts. Both measures involve noise source treatments. In particular, N&V MM#4 provides that in the procurement of an HST vehicle technology, the Authority will require bidders to meet the federal regulations (40 CFR Part 201.12/13) at the time of procurement for locomotives (currently a 90-dB-level standard), for cars operating at speeds of greater than 45 mph. N&V-MM#5 provides for track treatments to reduce rail gap noise at turnouts.

In addition to the already existing mitigation measures, the Project's Design Features require the use of continuous welded rail to reduce the impact sounds of the steel wheels on the rail gaps, and the use of cowlings (streamlined coverings) on the pantographs to reduce aerodynamic noise

- The following changes to mitigation measure N&V-MM#1 are required to control HST project construction noise impacts: (1) Construction sound barriers shall be of sufficient height to interrupt the line-of-site between the construction activity and receptor location; (2) Prohibit nighttime construction in residential areas; (3) Establish a noise hotline and community liaison to address noise complaints and require severe financial penalties for repeat violations of the established noise limits; and (4) Prohibit impacted pile driving within 50 feet of all buildings. further, as the EIR/EIS indicates that "Local ordinances and the standards will always take precedence over the 'reasonable guidelines' established by the FRA" (Authority and FRA 2012, page 8-3), permitted hours of construction shall be in accordance with the City of Bakersfield's Noise Ordinance and be applied to noise sensitive commercial uses, such as those at the Bakersfield Commons site (Vol. V, Coffee-Brimhall, LLC comment).

Mitigation Measure N&V-MM#1 will be effective at reducing the project's construction noise impacts to less-than-significant levels. (Final EIR/EIS, Table 3.4-35.) That measure requires the construction contractor to monitor construction noise to verify compliance with the noise limits shown in Table 3.4-1 of the Final EIR/EIS, which serve as performance standards to guarantee that construction noise impacts will not exceed less-than-significant levels. The mitigation measure provides the contractor with flexibility to meet the FRA construction noise limits in the most cost-effective manner. This can be done by either prohibiting certain-noise generating activities during nighttime hours (as recommended by the contractor) or by providing additional noise control measures to meet the noise limits. A noise-monitoring program will be developed as part of Mitigation Measure N&V-MM#1 to meet the required noise limits. Measures included in the noise-monitoring program may include installation of a temporary construction site sound barrier near a noise source or the use of moveable sound barriers at the source of the construction activity (consistent with recommendation #1 of the comment); avoidance of nighttime construction in residential neighborhoods (consistent with recommendation #2 of the comment); the use of an auger to install piles instead of a pile driver or, if pile driving is necessary, limiting the time of day that the activity can occur (which will be equally as effective as recommendation #4 of the comment in that collectively, the noise-monitoring program will achieve the FRA's construction noise limits to ensure impacts are less than significant). The monitoring-program and compliance with the project's Mitigation Monitoring and Reporting Program will ensure that violations of the noise limits do not occur (which will be equally as effective as recommendation # 3 of the comment). Because Mitigation Measure N&V-MM#1 will be equally as effective as the mitigation measures recommended by the comment, but will also provide the construction contractor with flexibility to limit construction noise in the most efficient and cost effective manner, while still achieving the specific performance standards specified by the FRA, the Authority finds that Mitigation Measures N&V-MM#1, as proposed and adopted, is preferable to the mitigation measures recommended by the comment.

The Authority has, however, incorporated the following component of this suggested mitigation measure into N&V-MM#1:

- CHSRA will establish and maintain in operation until completion of construction a toll-free "hotline" regarding the Section construction activities. CHSRA shall arrange for all incoming messages to be logged (with summaries of the contents of each message) and for a designated representative of CHSRA to respond to hotline messages within 24 hours (excluding weekends and holidays). CHSRA shall make a reasonable good faith effort to address all concerns and answer all questions, and shall include on the log its responses to all callers. CHSRA shall make a log of the in-coming messages and CHSRA's responsive actions publicly available on its website.
- Mitigation for construction noise should include a requirement to adhere to the city's noise requirements and restrictions on construction activities in and around school areas to weekends and near all other sensitive receptors to weekdays and daytime hours only (Vol. V, City of Bakersfield comment).

The Authority will consider the suggested mitigation measure for construction in conjunction with future decisions regarding an alignment through Bakersfield.

Section 3.6, Public Utilities and Energy

Measure Addresses an Impact that is Less than Significant. The following mitigation measures were not adopted because activities are part of the proposed project actions and impacts would be less than significant.

- All existing and Master Planned sewer, water, and recycled water facilities crossing the existing tracks and future HST tracks shall be required to have steel casings. Any relocation or abandonment of existing water and/or sewer lines shall be required to maintain service to all parcels. Replacement lines must be constructed to City of Fresno Standards. Also, all existing valves, manholes, and any other above ground appurtenances shall be relocated outside of the proposed HST right-of-way. HST shall provide steel casings crossing the alignment of the HST for future recycled water lines (Vol. IV, City of Fresno comment).

The HST project would not negatively affect the integrity of existing mains or preclude the installation of new mains across the HST right-of-way. In areas where the HST route would be elevated in the city of Fresno, it is likely that disturbance to these pipelines would be avoided during final engineering design for the specific placement of columns. However, where existing underground utilities, such as sewer and water pipelines, cross the HST alignment, these affected utilities would be placed in a protective steel casing. The Authority would work with the appropriate municipal authorities, such as the city's public works department, to relocate services so they do not conflict with HST infrastructure. Where replacement lines are required, HST's contractor will replace them in accordance with State law requirements and established requirements of the entity having jurisdiction over the pipelines. Design requirements are part of the project, and do not need to be addressed by additional mitigation requirements. Refer to Section 3.6 Public Utilities and Energy for additional information.

Providing protective casing for pipelines is part of the proposed project actions and does not need to be a mitigation measure.

- Existing water mains crossing the proposed HST alignment shall be maintained by reconstructing them in steel casings to allow the City of Fresno to maintain these facilities from outside the HST right-of-way (Vol. IV, City of Fresno comment).

Existing water mains crossing the HST right-of-way will be maintained during the relocation or protection-in-place of these lines. Water lines crossing the HST right-of-way will be encased, in steel casings, and the length of the casing will be extended sufficiently beyond the HST right-of-way so that future access to the casings can be made without affecting the HST right-of-way.

- Related water system appurtenances such as valves, blow-offs, air release assemblies, etc., shall be relocated outside the HST right-of-way (Vol. IV, City of Fresno comment).

As part of the project, all related appurtenances to water lines and their casings will be placed outside the HST right-of-way, so that any maintenance of the water lines can be performed without the need to access the HST right-of-way.

- Where water main crossings will exist outside the public right-of-way, the project shall provide dedicated water main easements to the city for the ongoing operation and maintenance of the facilities (Vol. IV, City of Fresno comment).

As part of the project, if an existing water line, which is located in private property and has its own easement, requires relocation and the relocation places the water line in a private property, the Authority will work with the affected utility owner to obtain a new easement for the relocated water line.

- The City reserves its right to increase the size of existing crossings or propose additional crossings as necessary to ensure existing levels of water service are maintained (Vol. IV, City of Fresno comment).

Appropriate sized casings will be provided for all utilities crossing the HST right-of-way. Any requests to increase the size of an existing facility or accommodate installation of a future facility would be negotiated between the City of Fresno and the Authority. Future utilities would be allowed to cross the HST right-of-way subject to obtaining permits from the Authority and meeting the requirements of HST design criteria. The Authority and its contractor(s) will continue to work with the City of Fresno to ensure the design and relocation/protection of water mains and other utilities meet the requirements of the city.

Providing protective casing for pipelines, and coordination with city is part of the proposed project actions and does not need to be a mitigation measure.

- The Draft EIR Section 3.8-10 states that the HMF site will connect to the municipal water supply where possible and practicable. If the HMF Fresno Works alternative is selected and will obtain water service from the city, the following provisions must be satisfied:
 - The HST project shall submit an application to the Fresno County Local Agency Formation Commission seeking authorization to expand Fresno's water service boundaries and provide water service to the Fresno Works site.
 - The HMF Fresno Works Alternative property is not fully located within the City of Fresno's 2025 General Plan boundary and was not included in the 2008 Fresno Urban Water Management Plan. Therefore, no water allocation was identified for this portion of the site. The HST project shall provide an annual water usage analysis and provide the City of Fresno with a supply of water equivalent to the demand.
 - The HST project shall submit water system improvement plans showing the location of all main extensions and all irrigation, fire, and domestic water services to be provided by the City of Fresno. Include on the plans the location of all reduced pressure backflow prevention devices for all services (see City Standards for acceptable locations). Any proposed city water mains shall be looped; dead end water mains will not be allowed.
 - Payment of the standard impact and connection fees for the facility.

- Seal and abandon existing onsite well(s) in compliance with the State of California Well Standards, Bulletin 74-90 or current revisions issued by California Department of Water Resources and City of Fresno standards.
- If the HMF Fresno Works alternative is selected and will obtain its water supply through the development of groundwater wells, the City of Fresno, Department of Public Utilities, Water Division recommends that the HST project identify groundwater mitigation measures to offset its groundwater demand through the implementation of water recycling, reuse, and aquifer recharge. The mitigation shall have a net zero impact on groundwater resources (Vol. IV, City of Fresno comment).

The designs presented in the Revised DEIR/Supplemental DEIS are preliminary. A decision on the HMF location is not being made at this time. If the Fresno Works–Fresno HMF Site is ultimately selected as the HMF location, the Authority will coordinate with the city to refine the HMF design and coordinate provisions for water service from the city of Fresno. If water service is requested from the City of Fresno the Authority, municipal design guidelines and specifications will be employed in any relocation. Master agreements would be negotiated with each agency to ensure that the requirements and standards of each agency are followed by the design-build contractor. If expansion of Fresno’s water service boundaries is necessary, the Authority will work with the city to apply for any approvals necessary for that expansion. If any wells need to be sealed or relocated, the State of California Well Standards would apply to any onsite well abandonment, and no additional mitigation measures are necessary to ensure compliance.

The projected water demand was determined not to have significant drawdown effects on the groundwater resources. The HMF would require approximately 52 acre-feet per year of water on average for domestic use. Refer to Section 3.6.5 and Section 3.8.5 for further details. However, as discussed in Section 3.8, Hydrology and Water Resources, drawdown effects would be negligible. No entitlements are necessary to pump groundwater. The Authority will require additional protective measures (i.e., casing and clearances) as defined in their technical memorandums to ensure protection of the HST facilities.

Coordination with municipal and private utility providers and access to existing or modified utility corridors is identified as a part of the proposed action and identified in the EIR/EIS. Adding coordination as a mitigation measure is unnecessary.

- The city requests that the following mitigation measures be included in the EIR/EIS so as to address the potentially significant impacts to the city's sewer utilities and service system:
 - Any change in direction of the sewer collection system must occur at a manhole to allow access to each reach for inspection and cleaning.
 - Any new sewer collection system manhole or structure installed with the project must be placed at a location approved by the city to ensure ready access by city of Fresno Collection System Maintenance crews, equipment, and vehicles. Access must allow for the proper, safe, and efficient orientation of equipment and vehicles. This includes acquiring any necessary right-of-ways or easements.
 - Plans for the construction of any new structures associated with the project shall be submitted to the city for its review and approval to ensure that the proposed construction does not impact ready access to existing sewer collection system manholes or other sewer collection system structures by City of Fresno Collection System Maintenance crews, equipment, and vehicles. Access must allow for the proper, safe, and efficient orientation of equipment and vehicles. This includes acquiring any necessary right-of-ways or easements. Any proposed bypass during construction of new mains would be subject to the requirements of the City of Fresno (Vol. V, City of Fresno comment).

The relocation and/or protection of sanitary sewer lines will be performed per the established requirements of the entity having jurisdiction over the sanitary sewer and the Authority's requirements for when utilities cross the HST right-of-way. Per contract requirements, the Contractor is required to coordinate its design and construction activities related to relocation and/or protection of the sanitary sewer with the jurisdictional entity and obtain its review and comment prior to any construction impacting the sanitary sewer.

Coordination with municipal and private utility providers and access to existing or modified utility corridors is identified as a part of the proposed action and mentioned in the EIR. Adding coordination as a mitigation measure is unnecessary.

- The HST project has the potential to both significantly impact the integrity of the existing mains and thus significantly impact public health and safety, as well as to restrict the city's future growth through construction of the HST corridor which could preclude the installation of new mains across the HST right-of-way. Therefore we request that the following mitigation measure be included in the EIR/EIS to address this concern:
 - The Authority shall be required to install steel casings meeting city specifications and standards on all existing and Master Planned sewer, water, and recycled water facilities crossing the existing tracks and future HST tracks Any relocation or abandonment of existing water and/or sewer lines shall be required to maintain service to all parcels. The Authority shall construct all replacement lines to City of Fresno Standards. In addition, the Authority shall relocate all existing valves, manholes, and any other above ground appurtenances outside of the proposed HST right-of-way. The Authority shall also provide steel casings meeting city standards and specifications crossing the alignment of the HST for future recycled water lines (Vol. V, City of Fresno comment).

As part of the project, appropriate size casing will be provided for all utilities crossing the HST right-of-way. Any requests to increase the size of an existing facility or accommodate installation of a future facility would be negotiated between the City of Fresno and the Authority. State law requires HST to accommodate future utility needs for crossings. Any third party pipelines that need to be moved will be installed in steel casings under the design standards that the Authority and its Contractor must follow. Future utilities would be allowed to cross the HST right-of-way subject to obtaining permits from the Authority and meeting the requirements of HST design criteria.

Placement of affected utility routes within steel casings identified as a part of the proposed action and mentioned in the EIR. Adding coordination as a mitigation measure is unnecessary.

- To address this potentially significant impact, the city requests that the following mitigation measures be added to the EIR/EIS:
 - a. The Authority shall maintain the existing water mains crossing the proposed HST alignment by reconstructing them in steel casings meeting city standards and specifications so as to allow the City of Fresno to maintain these facilities from outside the HST right-of-way.
 - b. That Authority shall relocate related water system appurtenances such as valves, blow-offs, air release assemblies, etc., outside the HST right-of-way to locations acceptable to the city's Water Division.
 - c. Where water main crossings will exist outside the public right-of-way, the Authority shall dedicate water main easements to the city to provide access for the ongoing operation, repair and maintenance of these facilities.

- d. The Authority shall ensure that the city reserves its right to increase the size of existing crossings or to propose additional crossings as necessary to ensure that existing levels of water service are maintained (Vol. V, City of Fresno comment).

Placement of affected utility routes within steel casings and related equipment (values, etc.) is identified as a part of the proposed action and mentioned in the EIR, as is continued access by the city for maintenance. Adding coordination as a mitigation measure is unnecessary.

Section 3.7, Biological Resources and Wetlands

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they are similar to, and otherwise do not offer clear environmental benefits over, the mitigation measures already incorporated and adopted by the Authority.

- Exclusion fencing must be installed so it is at least 50 feet from burrows. Because CTS can travel up to 1.3 miles a 250-foot buffer is not sufficient (Vol. V, California Department of Fish & Wildlife comment).

If a California tiger salamander is identified in the construction and project footprint during protocol-level surveys or visual pre-construction surveys, the Authority will initiate consultation with the CDFW and obtain an Incidental Take Permit. There is currently no known aquatic breeding habitat in the habitat study area that overlaps with the Cross Creek region. The closest aquatic breeding habitat which may be a potential source of California tiger salamanders is located approximately 1 mile away. As described in Bio-MM#25, in the unlikely event that suitable breeding habitat is located within the project footprint or surrounding 250-foot buffer, the Contractor will restrict construction activities within 250 feet of the potential California tiger salamander breeding habitat during the wet season. Based on the analysis of potentially suitable habitat discussed in the Biological Resources and Wetland Technical Report, it is not anticipated that California tiger salamander will access the proposed alignment due to an absence of breeding habitat within 250 feet of the project footprint and the existing physical barriers between the potential source of California tiger salamanders and the alignment (Authority and FRA 2012). The 250-foot work buffer is designed so that there are no indirect impacts from construction activities to the suitable breeding habitat during the wet season.

As described in Bio-MM#7 and Bio-MM#8, the ESA and wildlife exclusion fence will be installed by the project biologist in a manner that routes the fence line around any burrows entrances that may be present. The wildlife exclusion fence would be implemented to prevent California tiger salamanders (and other special-status species) from gaining access to the project area during construction where they could be subject to mortality. As proposed, BIO-MM #7 and BIO-MM#8 will provide the same level of protection to the species as the 50-foot buffer recommended by CDFW.

- Rather than a 250-foot buffer for vernal pools, BIO-MM#19 should require work to be limited within the watershed of any vernal pool (Vol. V, Land Protection Partners comment).

The 250-foot buffer in Mitigation Measure BIO-MM#19 is adequate to reduce impacts on vernal pool habitat. As stated in the measure, to prevent impacts during the wet season (October 14–June 1), exclusion fencing and erosion control measures will be installed. These restrictions are subject to revision by regulatory agencies including U.S Fish and Wildlife Service and the U.S. Army Corps of Engineers.

- Regarding Mitigation Measure BIO-MM#44, other projects in California require a 500-foot buffer around badger dens (Vol. V, Land Protection Partners comment).

The buffers contained in Bio-MM#44 are proposed based on the professional judgment of subject matter experts that they are adequately protective and both avoid direct impacts and mitigate indirect impacts. The mitigation measure includes weekly monitoring and reporting. In addition, the buffers proposed in Mitigation Measure BIO-MM#44 are subject to approval by the appropriate regulatory agency (California Department of Fish & Wildlife). This existing measure is therefore sufficient and reduces impacts to a less than significant level.

- BIO-MM#47 appears to imply that temporary impacts to riparian habitats can be completely offset by revegetation (through the use of “appropriate plants and seed mixes”). This may not be true and performance measures that incorporate all elements of the riparian community (Including invertebrates) must be used to confirm that native diversity is restored at the sites following disturbances or other compensatory mitigation must be required to make up for the difference in habitat quality before and after project implementation (Vol. V, Land Protection Partners comment).

The biological mitigation measures should be read in context. As stated in BIO-MM#47, BIO-MM#6 requires that during final design, the Project Botanist will prepare a Restoration Revegetation Plan (RRP) for temporarily disturbed upland communities. Site restoration will also be conducted to restore temporary impacts on valley foothill riparian areas (BIO-MM#47) and jurisdictional waters (BIO-MM#48). Furthermore, the restoration of temporary impacts on jurisdictional waters will be carried out in accordance with CMMP (Mitigation Measure BIO-#62), which will be developed in cooperation with regulatory agencies including the U.S. Army Corps of Engineers, the State Water Resources Control Board, and the California Department of Fish and Wildlife. The plan will include all required avoidance, minimization, mitigation, and monitoring measures. The plan will also address mitigation for the lost conditions, functions, and values of impacts on waters consistent with agency requirements. Examples of potential success criteria are proposed in this measure and would include criteria for plant cover, habitat functions, and species diversity. The existing measures are sufficient and reduce impacts to riparian habitats to a less than significant level.

Section 3.12, Socioeconomics, Communities, and Environmental Justice

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they are similar to either a project design feature or mitigation measure already incorporated and adopted by the Authority and otherwise do not offer clear environmental benefits over the project’s design features and mitigation measures.

- Requests mitigation to address adverse effects on Environmental Justice populations and business owners, including job opportunities, through training, and relocation assistance (Vol. IV, KMCA/SJVBCA comment).

Economic and social changes resulting from a project, such as adverse impacts on Environmental Justice populations and business owners, are not environmental impacts within the meaning of CEQA (CEQA Guidelines, § 15064, subd. (e)). Nevertheless, the Authority has adopted an Environmental Justice Policy (August, 2012), addressing these concerns. Consistent with the Authority’s Environmental Justice Policy, the project will ensure that adverse effects on Environmental Justice populations and business owners are minimized. In particular, to help offset any disproportionate effects, the Authority has approved a Community Benefits Policy, which supports employment of individuals who reside in disadvantaged areas and those designated as disadvantaged workers, including veterans returning from military service. The policy will help to remove potential barriers to small businesses, disadvantaged business enterprises, disabled-veteran business enterprises, women-owned businesses, and microbusinesses that want to participate in building the high-speed train system. Under the

Authority's Community Benefits Policy, design-build construction contracts will be required to adhere to the National Targeted Hiring Initiative, which states a minimum of 30% of all project work hours will be performed by national targeted workers and that a minimum of 10% of national targeted workers hours will be performed by disadvantaged workers.

The Community Benefits Policy will supplement the Authority's Small Business Program, which has an aggressive 30% goal for small-business participation, and includes goals of 10% for disadvantaged business enterprises and 3% for disabled-veteran business enterprises.

- The Authority should ensure that close to 100% of the relocated businesses remain in Fresno by encouraging the State Legislature to adopt various financial incentives (Vol. IV, City of Fresno).

As noted, economic and social changes resulting from a project are not environmental impacts within the meaning of CEQA. Nevertheless, the property acquisition and compensation plan includes provisions to ensure relocated businesses remain fully operational at their new location, including the potential for renovating existing structures to fit the needs of the business. Individual acquisition and access issues will be determined during the property acquisition process.

- Requesting the Authority establish transportation (vanpools, carpools, etc.) from small cities to HST stations to allow small Environmental Justice communities easy access to HST (Vol. IV, Central Valley Air Quality Coalition comment).

Although CEQA does not require consideration of Environmental Justice impacts, in accordance with Executive Order 12898 and the Authority's Environmental Justice Policy, the EIR/EIS considered offsetting benefits when evaluating potential disproportionately high and adverse effects on minority and low-income populations. The proposed HST project would bring economic benefits to the study region, including jobs and related income. HST construction and operation jobs would be filled by the regional labor force, so the project would benefit regional workers broadly, and the Community Benefits Policy adopted by the Authority would support employment of disadvantaged workers. Station-related benefits, including improved accessibility and potential property value increases, would most benefit those who live closest to the new stations. In Fresno and Bakersfield, the people who live closest to the new stations would be the adjacent minority and low-income communities. The Kings/Tulare Regional Station is in a sparsely populated area that would bring neither disproportionate adverse effects nor benefits to minority and low-income populations.

- The Bakersfield Homeless Center would like to stress to the Authority the importance of providing an alternative location the Bakersfield Homeless Center upon adoption of the B3 alignment. Further, since the construction of the platform would necessitate closure of the Center, the Bakersfield Homeless Center requires the transition to the new site be seamless with zero interruption in services to our population, any kind of disruption would create stress on families already in crisis, but also increased pressure for an already stressed safety net (Vol. V, Bakersfield Homeless Center comment).

The Bakersfield Homeless Center/Shelter will not be impacted by the Preferred Alternative north of 7th Standard Road. Further response is therefore not required. Nevertheless, in answer to the suggestion, the Authority notes that Mitigation Measure SO-4 (implement measures to reduce impacts associated with the relocation of important facilities) would apply to the Bakersfield Homeless Shelter, were the shelter affected by the project. The Authority would consult with these respective parties before land acquisition to assess potential opportunities to reconfigure land use and buildings and/or relocate affected facilities, as necessary, to minimize the disruption of facility activities and services, and also to ensure relocation that allows the community

currently served to continue to access these services. This mitigation measure would be effective in reducing the impacts of the project to less-than-significant by completing new facilities before necessary relocation, and by involving affected facilities in the process of identifying new locations for their operations. The Authority, as required under the Uniform Act and California Relocation Assistance Act (CRAA), bears the cost of compensation for the displaced facilities.

- The Authority should implement available measures to maximize local employment opportunities with the HST project to ensure equitable access to employment for local residents (Vol. V, City of Fresno comment).

Economic and social impacts are not environmental impacts requiring mitigation under CEQA. Nevertheless, the Authority has approved a Community Benefits Policy that helps to remove potential barriers to small businesses, disadvantaged business enterprises, disabled veteran business enterprises, women-owned businesses, and microbusinesses that want to participate in building the High-Speed Rail system. Under the Authority's Community Benefits Policy, design-build construction contracts will be required to adhere to the National Targeted Hiring Initiative, which states a minimum of 30 percent of all project work hours shall be performed by National Targeted Workers and a minimum of 10 percent of National Targeted Workers hours shall be performed by disadvantaged workers.

- The Authority should put in place an actual program to address impact & provide real mitigation effort for resident living in environmental justice communities along route alignment get them able & ready to be included with construction of this project (Vol. V, Kern Supporter for High Speed Rail comment).

Economic and social impacts are not environmental impacts requiring mitigation under CEQA. As described in the Revised Draft EIR/Supplemental EIS, and the Final EIR/EIS, however, jobs created by construction and operation of the project are anticipated be filled by workers in the region. To help offset any disproportionate effects, the Authority has approved a Community Benefits Policy that supports employment of individuals who reside in disadvantaged areas and those designated as disadvantaged workers, including veterans returning from military service. It helps to remove potential barriers to small businesses, disadvantaged business enterprises, disabled veteran business enterprises, women-owned businesses, and microbusinesses that want to participate in building the High-Speed Train system. Under the Authority's Community Benefits Policy, design-build construction contracts will be required to adhere to the National Targeted Hiring Initiative, which states a minimum of 30 percent of all project work hours shall be performed by national Targeted Workers and a minimum of 10 percent of National Targeted Workers hours shall be performed by disadvantaged workers. According to the National Targeted Hiring Initiative, disadvantaged workers either live in an economically disadvantaged area or face any of the following barriers to employment: being homeless, a custodial single parent, receiving public assistance, lacking a GED or high school diploma, having a criminal record or other involvement with the criminal justice system, chronically unemployed, emancipated from the foster care system, being a veteran, or an apprentice with less than 15 percent of the required graduating apprenticeship hours in a program. The Community Benefits Policy will supplement the Authority's Small Business Program which has an aggressive 30 percent goal for small business participation, which includes goals of 10 percent for disadvantaged business enterprises and 3 percent for disabled veteran business enterprises.

- The nature and extent of the compensation available to displaced individuals, businesses, and non-profits needs to be reevaluated and increased as necessary to amounts that will fully compensate for all actual costs associated with the displacement or relocation (Vol. V, City of Fresno comment).

Economic and social impacts are not environmental impacts necessitating mitigation under CEQA. Nevertheless, the Authority finds that this comment is word-for-word identical to the City of Fresno's comment 703-16 on the Merced Fresno Draft EIR/EIS (Authority and FRA Volume IV April 2012). The Merced Fresno EIR/EIS was revised based on the city's recommendations regarding Mitigation Measure SO-MM#2 (Authority and FRA Volume 1 April 2012, pages 3.12-67 – 3.12-68). The Fresno Bakersfield Revised DEIR/Supplemental DEIS incorporated what was the mitigation measure for the Merced Fresno project into Section 3.12.6, "Project Design Features" (see pages 3.12-116 and 3.12-117). The city's recommendations are satisfied by the project design features, which ensure that the relocation plan is written in consultation with cities and counties including the City of Fresno to meet specified objectives. The plan will be prepared before any acquisitions occur. As the city is aware, the Authority and the city have been in discussions to come to terms with a right-of-way acquisition agreement which implements the suggestions in this comment and provides the means for the city and Fresno County to assist with the relocation of businesses.

- Authority should assist businesses through the permitting process at their new site and ensure that the necessary infrastructure is in place, entitlements exist for the business, and additional funds above and beyond the typical compensation, including loan assistance (Vol. IV, City of Bakersfield Planning Division comment).

Economic and social impacts are not environmental impacts necessitating mitigation under CEQA. Nevertheless, as explained in the EIR/EIS, relocation assistance provided under the Uniform Act includes assistance in finding replacement properties, moving expenses, and obtaining permits. The costs associated with obtaining special permits or other development entitlements are not subject to the \$10,000 cap on reestablishments expenses, as they will be reimbursed for the full cost.

Mitigation Measure SO-MM#4 describes the measures that will be implemented to reduce the impacts associated with relocating important community facilities. For more information on the property acquisition and compensation process see Volume II Technical Appendix 3.12-A.

Measure Addresses Impacts that are Less than Significant. The following mitigation measures were not adopted because impacts associated with displacement will be less than significant with implementation of the project's mitigation measures and because impacts associated with HST operation-related property and sales tax revenue effects would be less than significant.

- Requesting that the compensation exceeds Uniform Act and CRAA compensation caps to amount that will fully compensate for all actual costs associated with the displacement or relocation (Vol. IV, City of Fresno comment).

Economic and social impacts are not environmental impacts necessitating mitigation under CEQA. The Final EIR/EIS concluded that after mitigation, the project would not result in any significant and unavoidable effects related to displacement and relocation. Therefore, no changes to the mitigation measures are necessary. Furthermore, it should be noted that the limits for reimbursement caps are set by the Uniform Act, thus, they can only be changed by legislation. The \$10,000 cap on reestablishment expenses cited include, but are not limited to things such as repairs or improvements to the replacement real property; modifications to the replacement property; and construction and installation costs for exterior signing. Nevertheless, an increase in the cap is not needed to reduce displacement impacts to less-than-significant levels.

Costs associated with obtaining special permits or other development entitlements are addressed in the Caltrans right-of-way manual, Section 10.05.05.10. The Authority has adopted this manual for use until such time as the Authority creates its own right-of-way manual. This section states

that "The displacee is entitled to the cost of any license, permit, or certification required for the particular business or organization to operate at the replacement location that is not transferable to the replacement property..."

- Economic impacts to businesses, sales tax and property tax need to be not only analyzed in greater depth, but also mitigated in part through the creation of a Business Relocation Team. This team needs to be funded by the Authority and would include working with community partners to assist impacted businesses find a new location as well as assist the City in processing new site plans, permits and all necessary steps to get them up and running as quickly as possible in their new location (Vol. IV, City of Fresno comment).

As described in the Final EIR/EIS, Volume I, Section 3.12, SO Impact # 3, SO Impact #4, and SO Impact #13, the intensity of the effect is negligible for all alternatives, including the Preferred Alternative north of 7th Standard Road, because the economic impact is measurable, but would not be perceptible to community residents.

The Authority is and has been working in conjunction with the City of Fresno and County of Fresno to develop resources to assist impacted businesses and to mitigate any potential impacts on city and county staff and resources for the increased permitting needs of those impacted businesses. The Authority has committed to maintain a "permit bureau" to help businesses overcome the regulatory disruptions caused by the project.

- Requesting that the Authority fund a business relocation team in Fresno (Vol. IV, City of Fresno comment).

As described in the Final EIR/EIS, Volume I, Section 3.12, SO Impact #3, SO Impact #4, and SO Impact #13, the intensity of the effect is negligible for all alternatives, including the Preferred Alternative north of 7th Standard Road, because the economic impact is measurable, but would not be perceptible to community residents.

Furthermore, the Authority has committed to maintain a "permit bureau" to help businesses overcome the regulatory disruptions caused by the project.

Section 3.15, Parks and Recreation

Measure Addresses an Impact that is Less than Significant. The following mitigation measures were not adopted because activities are part of the proposed project actions and impacts would be less than significant.

- The commenter suggests an underpass for foot and motor traffic, at the same place where the current entrance to the Colonel Allensworth State Historic Park is located (Vol. V, Pierro comment).

The Preferred Alternative north of 7th Standard Road includes the Allensworth Bypass, thereby avoiding any potential impacts to the Colonel Allensworth State Historic Park.

Section 3.16, Aesthetics and Visual Resources

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they do not offer clear environmental benefits over, the mitigation measures already incorporated and adopted by the Authority.

- City requests decorative masonry, subject to approval of the city, to be used for sound walls. EIR/EIS should identify ways to mitigate graffiti (Vol. V, City of Corcoran comment).

Locally preferred sound barrier treatments, as described in the comment, would be incorporated in accordance with AVR-MM#2a and #2g in Section 3.16, Aesthetics and Visual Resources. AVR-MM#2g: Provide Sound Barrier Treatments calls for a range of sound barrier treatments, including the use of surface enhancements and textures consistent with design features developed in consultation with local communities.

- Because of the visual prominence the viaduct heading into Bakersfield should be designed to be a central iconic landmark. If that isn't possible consider a greenfield station north or south of town (Vol. V, DeCoster comment).

This proposed mitigation measure is not relevant to the Preferred Alternative north of 7th Standard Road. In response to the suggestion, however, the Authority notes that pursuant to Mitigation Measure AVR-MM#2a, the Authority would establish a consultation and design process with affected cities and counties to advance the final design through a collaborative, context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements that are to be incorporated into the final guideway designs.

- Modify AVR-MM#2a, AVR-MM #2b, and AVR-MM #2f to include the affected property owner in the coordination. Further, the affected property owner shall determine the actual measures to be implemented (Vol. V, Coffee-Brimhall, LLC comment).

Mitigation Measure AVR-MM#2a require the Authority to work with affected cities and counties to establish a consultation and design process with affected cities and counties to advance the final design through a collaborative, context-sensitive solutions approach. Participants in the consultation process will meet on a regular basis to develop a consensus on the urban design elements that are to be incorporated into the final guideway designs. Similarly, Mitigation Measure AVR-MM#2b requires that during the development of final design, the Authority will work with the affected cities and counties to develop a project site and landscape design plan for the areas disturbed by the project. The landscaping implemented pursuant to Mitigation Measure AVR-MM#2f will be consistent with the landscape design plan developed in consultation with the affected cities and counties per Mitigation Measure AVR-MM#2b. Nothing about Mitigation Measures AVR-MM#2a and AVR-MM#2b preclude affected landowners from participating in the design processes established by those mitigation measures. The measures provide flexibility to ensure that all interested persons will be able to participate in the final design process, while not requiring that any one individual participate in the process. This degree of flexibility offers benefits in terms of implementing the mitigation measure that are not offered in the measure suggested by the commenter.

- Apply AVR-MM #2a, Action Bullet 5, to elevated guideways (Vol. V, Coffee-Brimhall, LLC comment).

AVR-MM#2a, Action Bullet 5 already applies to elevated guideways, as well as other areas. No changes to the mitigation measure are warranted.

- Analyze construction and engineering techniques that would reduce construction noise and excavation impacts on adjacent properties, and to preserve existing vegetation and/or provide extensive new mitigation screening (Vol. V, City of Wasco comment).

Mitigation Measures AVR-MM#2b, AVR-MM#2c, AVR-MM#2d, AVR-MM#2e, and AVR-MM#2f each provide descriptions of measures that would be applied to minimize vegetation removal and provide new landscape screening. Mitigation Measure N&V-MM#1 requires a noise monitoring program that will ensure construction noise does not exceed the FTA's construction noise limits.

- Address impacts of widened rail right-of-way, grade separations, construction on existing trees/vegetation, and outline mitigation to minimize impacts, including extensive landscaping to screen HST facilities as much as possible (Vol. V, City of Wasco comment).

Mitigation Measure AVR-MM#2c calls specifically for extensive landscape screening adjacent to affected residential areas. Furthermore, Mitigation Measures AVR-MM#2b, #2d, #2e, and #2f each provides measures for landscape screening as required to mitigate different situations. AVR-MM#2c calls for the Authority to work with affected cities to develop site and landscape plans for areas disturbed by the project. These measures are therefore consistent with the commenter's recommendations and the commenter's recommendations do not offer any clear environmental benefits over the adopted mitigation measures.

Measure Addresses an Impact that is Less than Significant. The following mitigation measure was not adopted because HST operation-related property and sales tax revenue effects would be less than significant.

- An underpass should be constructed at Ventura Street/UPRR/HST crossing because the overpass is problematic in terms of street connectivity, circulation, Americans with Disability Act compliance, aesthetics, and would create a barrier between communities (Vol. V, City of Fresno comment).

The EIR/EIS concluded that the effects of an overcrossing at Ventura Street would be considerably less than at Tulare Street, because of the comparative absence of high-sensitivity receptors such as the stadium entrance, SP Depot, or Fulton Mall, which terminates two blocks north of Ventura Avenue. Thus, from an aesthetic perspective, the impacts of a Ventura Avenue overcrossing would not be comparable to a Tulare Street overcrossing due to a relative absence of high-sensitivity receptors.

Section 3.18, Regional Growth

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measures were not adopted because they are similar to, and otherwise do not offer clear environmental benefits over, the mitigation measures already incorporated and adopted by the Authority.

- The Authority and FRA should identify all measures within their control to minimize potentially adverse impacts from HST induced changes to growth patterns.
 - For station-cities, include commitments for partnerships and for providing grant funding to promote comprehensive station area planning, so that local stakeholders have the tools to maximize economic, community and environmental benefits from the project.
 - For the urban edges of station-cities and neighboring communities, identify measures to prevent unplanned HST induced growth. These could include commitments for partnering with state agencies, regional planning organizations, or local governments to evaluate whether counties and key non-station cities need technical assistance in planning for HST and help connect them to available resources and tools.
 - For agricultural lands in areas most at risk of experiencing HST induced development pressures, commit to promote placement of conservation easements.
 - To increase transit access to HST, commit in the FEIS to partner with local and regional transit providers to develop connectivity plans and implement measures to increase transit access to HST (Vol. V, U.S. Environmental Protection Agency comment).

Bullet 1: The Authority has offered grants to station cities for station planning. Station planning will incorporate the Authority's March 2011 Urban Design Guidelines: California High-Speed Train Project, which promotes connectivity with the areas adjoining the stations and compact development within those areas (Authority 2011).

Bullet 2: The Authority has no jurisdiction over the urban edges, so its ability to ensure that cities and counties do not approve unplanned growth in the future is very limited. However, the cities and counties are participating in the regional agencies' ongoing Senate Bill (SB) 375 planning processes. The resultant "sustainable communities' strategies" adopted by the council of governments in each county is expected to achieve the objective of reducing additional unplanned growth and sprawl in the region through targeted transportation spending, housing needs allocations, and CEQA streamlining incentives for compact growth.

Bullet 3: The Authority has committed to funding conservation easements through the Department of Conservation's California Farmland Conservancy Program (see Mitigation Measure Ag-MM#1: Preserve the Total Amount of Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland in Section 3.14, Agricultural Lands, of the EIR/EIS). The selection criteria will place a higher priority on lands that can serve as urban separators or that are under development pressure. The existing mitigation measure is sufficient.

Bullet 4: The Authority has committed to working with local and regional transit providers through the "blended approach" described in the April 2012 Revised 2012 Business Plan for the California HST System (Authority 2012d). Further, the HST stations will be designed as multi-modal facilities to include easy connections to local transit service (see Section 2.4.4, Station Alternatives). This commitment is reflected in the March 2011 Urban Design Guidelines (Authority 2011), which describe provisions within station area design to connect to local transit.

Section 3.19, Cumulative Impacts

Measures that do not represent clear improvements, from an environmental standpoint, over the draft language that the commenter seeks to replace. The following mitigation measure was not adopted because it is similar to, and does not otherwise offer clear environmental benefits over, the mitigation measures already incorporated and adopted by the Authority.

- Purchase and set aside offsetting lands in a farmland trust, a measure that has been required of other related state projects.

This mitigation measures is essentially the same as AG-MM#1, which will permanently preserve Important Farmlands for agricultural uses. With the California Farmland Conservancy, the Authority anticipates working with local, regional, and state organizations and agencies to identify suitable land in the region and willing landowners to establish agricultural conservation easements on an acre-for-acre basis, ensuring permanent protection and long-term stewardship for working agricultural lands. AG-MM# 1 also contains performance standards to ensure a measurable accomplishment of the mitigation.

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7.0 Statement of Overriding Considerations

The Final Project EIR/EIS and the CEQA Findings of Fact conclude that implementing the portion of the Preferred Alternative north of 7th Standard Road in Kern County, as part of the statewide high-speed train system (see section 2 above), will result in certain significant impacts to the environment that cannot be avoided or substantially lessened with the application of feasible mitigation measures or feasible alternatives. This Statement of Overriding Considerations is therefore necessary to comply with CEQA, Public Resources Code, Section 21081, and the State CEQA Guidelines, Section 15093. The significant and unavoidable impacts and the benefits related to the Preferred Alternative north of 7th Standard Road are described below. The Authority Board has carefully weighed these impacts and benefits and finds that the benefits of implementing the portion of the Preferred Alternative north of 7th Standard Road outweigh the significant and unavoidable environmental impacts.

7.1 General Findings on Significant and Unavoidable Impacts Associated with the Preferred Alternative North of 7th Standard Road

Based upon the Final Project EIR/EIS and the CEQA Findings of Fact contained herein, as well as the evidentiary materials supporting these documents, the Authority finds that implementing the portion of the Preferred Alternative north of 7th Standard Road could result in the following list of significant and unavoidable impacts to the environment:

Noise and Vibration

- N&V IMPACT #3 – Project Noise Impacts

Socioeconomics, Communities, and Environmental Justice

- SO IMPACT #7 – Division of existing community Ponderosa Road/Edna Way east of Hanford, the Newark Avenue vicinity northeast of Corcoran, and Crome

Station Planning, Land Use, and Development

- LU IMPACT #2 – Permanent Conversion of Existing Land Uses to Transportation Use
- LU IMPACT #3 – Land Use Effects of Parking Demand at Kings/Tulare Regional Station East
- LU IMPACT #4 – Indirect Effects on Surrounding Land Uses at Kings/Tulare Regional Station East
- LU IMPACT #5 – Potential for Future Increased Density and TOD Development at Kings/Tulare Regional Station East

Agricultural Lands

- AG IMPACT #1 – Permanent Conversion of Agricultural Land to Non-agricultural Use

Aesthetics and Visual Resources

- AVR IMPACT #4 – Lower Visual Quality in the Rural Valley/Agricultural Landscape Unit
- AVR IMPACT #4 – Lower Visual Quality in Corcoran, Wasco, and Shafter Landscape Units
- AVR IMPACT #4 – Sound Barriers would lower visual quality or block views

Cultural and Paleontological Resources

- CUL IMPACT #2 – Potential Adverse Effects on Historic Architectural Resources due to Construction Activities

Cumulative Impacts

- The Preferred Alternative's contribution to cumulatively considerable noise impacts would be cumulatively considerable because of the size of the HST construction project relative to other development that may occur adjacent to the Preferred Alternative.
- The Preferred Alternative's noise impacts, together with noise impacts of past, present, and reasonably foreseeable projects adjacent to transportation corridors would cause a cumulatively considerable noise impact. Because of the large number of sensitive receivers along transportation corridors the project contribution to the noise impact would be cumulatively considerable.
- The Preferred Alternative's contribution during construction of the Preferred Alternative and during operations to impacts on communities from division and/or disruption by the linear infrastructure would be a cumulatively considerable
- During operations, the Preferred Alternative's contribution to cumulative impacts on land use planning and development during operation would be cumulatively considerable because of the unplanned permanent conversion of land to transportation uses, and resulting land use incompatibilities in some locations.
- The Preferred Alternative's contribution to cumulative impacts to agricultural lands would be cumulatively considerable because of the conversion of agricultural lands to nonagricultural land uses.
- Continued urbanization and development projected under the cumulative condition could result in exposure and disruption of archaeological and paleontological resources and traditional cultural properties, and removal or damage to historic architectural resources, and would result in a cumulatively considerable impact. The Preferred Alternative's contribution to these impacts would be cumulatively considerable under CEQA.

With the approval of the Preferred Alternative north of 7th Standard Road and the adoption of the CEQA Findings of Fact, the Authority is committing to implement the mitigation measures identified for this portion of the Preferred Alternative to ensure that significant impacts are mitigated to a less than significant level to the extent feasible, and that the project's contribution to cumulative impacts is minimized and mitigated to the extent feasible. The Authority finds that the mitigation measures adopted with the findings are the appropriate measures to approve at this time because they apply to the Preferred Alternative north of 7th Standard Road. The Board does not have to legally, so does not, make findings about impacts and mitigation related to the Preferred Alignment south of 7th Standard Road because the Board is not approving at this time any alignment south of 7th Standard Road. However, the Board recognizes and incorporates by reference the impacts and mitigation detailed in the Final EIR/S related to the alignment alternatives south of 7th Standard Road and concludes that any of those impacts that would be significant and unavoidable also are outweighed by the reasons in this Statement of Overriding Considerations. The Board would make actual findings, and overriding conditions as if/then necessary and relevant, about an alignment south of 7th Standard Road when the Board approves an alignment south of 7th Standard Road.

The Authority further finds that while the mitigation measures it adopts as part of the CEQA Findings of Fact will substantially lessen or avoid many of the significant environmental impacts

discussed in the Final Project EIR/EIS, and mitigation adopted to address one area may result in beneficial effects in other subject areas, the above impacts will not all be mitigated to a less than significant level, and remain significant and unavoidable.

The Authority finds that each of the following specific economic, legal, social, technological, environmental and other considerations and benefits of the Preferred Alternative, separately and independently, outweigh the unavoidable adverse environmental effects of the project, and each one is an overriding consideration independently warranting project approval. The Authority finds that the significant unavoidable impacts of the project are overridden by each of these individual considerations, standing alone. The significant unavoidable environmental effects remaining after adoption of mitigation measures are considered acceptable in light of these significant benefits of the Preferred Alternative, as described in this statement of overriding considerations.

7.2 Overriding Considerations for the Preferred Alternative, the Portion of the Preferred Alternative North of 7th Standard Road, and the High-Speed Train System

There are numerous benefits of the Preferred Alternative, and the portion of the Preferred Alternative north of 7th Standard Road. In addition, there are numerous benefits of the HST System as a whole, of which the Fresno to Bakersfield section is an integral part. These benefits viewed both individually and collectively, outweigh the significant and unavoidable adverse effects of implementing the portion of the Preferred Alternative north of 7th Standard Road. These benefits are in the areas of transportation, the environment, land use planning, economics, and social considerations, and are set forth below.

7.2.1 Benefits of the Preferred Alternative as a Whole and the Portion of the Preferred Alternative North of 7th Standard Road

The Preferred Alternative and the portion of the Preferred Alternative north of 7th Standard Road, have numerous benefits that outweigh the unavoidable adverse impacts in the Fresno to Bakersfield section of the high-speed train system.

7.2.1.1 Provides the First Test Track in the United States for Testing Very High Speed Train Vehicles

A benefit from the portion of the Preferred Alternative north of 7th Standard Road is that this stretch of track alignment will form the high-speed train test track, which is an essential prerequisite to electrified, high-speed rail revenue service. The high-speed train system requires a test track between 80 and 105 miles long, in a fairly flat and straight alignment, to allow for testing and commissioning of very high-speed rolling stock at speeds of 220 mph (Final EIR/EIS, pp. 2-16 to 17). This test track will be the first of its kind in the nation and will provide for testing and commissioning rolling stock at multiple speeds for California's high-speed train system. No other existing facility in the United States is capable of being used for this purpose. The portion of the Preferred Alternative north of 7th Standard Road, are an essential component of the alignment needed for testing and certifying trains, and therefore the alignment is a valuable infrastructure asset for achieving the Authority's objectives of very high-speed electrified passenger rail service, independent of subsequent transportation uses of the system or the timing of such subsequent transportation uses.

7.2.1.2 Provides an Essential Building Block to Establish Very High-Speed Passenger Service

Another related benefit from the Preferred Alternative as a whole, and from the portion of the Preferred Alternative north of 7th Standard Road, is that this piece of the high-speed train system provides the essential back-bone of the system in the Central Valley, from which the remainder of the system can continue to be planned, environmentally evaluated, and eventually constructed and operated. As described in the 2012 and 2014 Business Plans, and as recognized by the Federal Railroad Administration in its award of American Recovery and Reinvestment Act and FY 2010 funds for Central Valley construction, the high-speed train system is logically planned to start construction in the Central Valley, because the Central Valley forms the foundation of the system. Construction will proceed incrementally to establish an Initial Operating Section that will allow for the earliest possible very-high-speed revenue passenger service in compliance with applicable laws. As a very large linear infrastructure project, the roughly 800 mile statewide system, or even the roughly 540 miles Phase 1 of the system between San Francisco and Los Angeles, cannot feasibly be planned, environmentally reviewed, constructed, and be ready for operation all at once. Construction must begin somewhere, and the Fresno to Bakersfield section of the system provides a benefit of serving as a critical foundation of the system, without which the remainder of the system would not be built and made operational as efficiently.

7.2.1.3 Provides a Valuable Transportation Asset for Potential Use By Conventional Rail

Another benefit of the portion of the Preferred Alternative north of 7th Standard Road is the availability of the new passenger rail track for conventional passenger rail use on an interim basis. Although the Authority has jurisdiction over high-speed passenger rail, rather than conventional passenger rail, the 2012 Business Plan identified the potential for the initial construction in the Central Valley to provide immediate passenger rail benefits by being available for use by a conventional passenger rail provider such as Amtrak. The portion of the Preferred Alternative extending to 7th Standard Road in Kern County, in combination with the already approved portion of the Merced to Fresno section, will be available upon completion of construction for this immediate transportation benefit, should a provider seek to put it to use. This roughly 126 miles of track in the Central Valley would offer passenger transportation benefits in the form of faster travel times and improved reliability due to it being fully separated from freight rail tracks. It may not be necessary or appropriate to allow for such interim use depending on future factors and the Authority is not approving such use in these Findings. However, if such interim use is ever approved and implemented, then the Preferred Alternative north of 7th Standard Road would serve to provide a valuable transportation asset and benefit for either short or long-term conventional rail use, irrespective of further high-speed train system construction or ability to use the track for electrified passenger rail service.

7.2.1.4 Provides Economic and Employment Benefits from Construction

Construction of the Preferred Alternative for the Fresno to Bakersfield section as a whole would generate sales tax revenue gains for the region over the construction period that have been estimated at about \$11.2 million for the four counties: \$5.6 million for Fresno County, \$520,000 for Kings County, \$2.2 million for Tulare County, and \$2.8 million for Kern County. These sales tax revenue gains would increase local government revenues during the construction period and provide an economic benefit.

Employment from construction of the Preferred Alternative for the Fresno to Bakersfield section as a whole would provide employment benefits in the region. It is estimated that about 22,800 one-year, full-time job equivalents would be created within Fresno, Kings, Tulare, and Kern counties over the construction period. Direct jobs in the construction sector comprise about 33%

of the total estimate, or about 7,600 one-year, full-time job equivalents. Job creation is anticipated to be highest during peak construction years of 2015-2018, requiring about 4,750 workers annually, with about 1,600 of these as direct jobs in the construction sector and about 3,150 as indirect and induced jobs in other sectors. The provision of new construction and non-construction job opportunities over the construction period in the San Joaquin Valley, which has suffered very high unemployment during the recent recession, particularly in the construction sector, is an important project benefit.

For the portion of the Preferred Alternative north of 7th Standard Road, the anticipated benefits listed above would be somewhat less due to not carrying construction into Bakersfield at this time. The benefits are still positive and are anticipated to be about 94% of the sales tax revenue gains and 92% of the employment gains described above.

In addition, estimates prepared for the 2014 Business Plan indicate substantial, positive fiscal impacts from construction of the ICS, the majority of which is the Preferred Alternative north of 7th Standard Road. The estimates include a more than \$ 8 billion increase in net GDP, but also a more than 3 to 1 return in GDP for the state's share of the funds to construct the ICS, which is funded in part by federal grants (Authority 2012f, p. 60).

7.2.1.5 Summary of Benefits of Preferred Alternative as a Whole and Portion of Preferred Alternative North of 7th Standard Road

In summary, the Authority finds that there are benefits associated with the Preferred Alternative as a whole, and with just the portion of the Preferred Alternative north of 7th Standard Road in Kern County, that will occur independently of any other construction of the high-speed train system. The Authority further finds that the portion of the Preferred Alternative north of 7th Standard Road offers benefits in conjunction with the already-approved portion of the Merced to Fresno section of the high-speed train system, but without any other construction of the high-speed train system to the north or south. Each of these benefits individually, as well as in combination, are sufficient overriding considerations that outweigh the significant and unavoidable environmental impacts of implementing the Preferred Alternative and the portion of the Preferred Alternative north of 7th Standard Road.

7.2.2 Benefits of the Fresno to Bakersfield Section as Part of the Statewide High-Speed Train System

The Preferred Alternative, and the portion of the Preferred Alternative north of 7th Standard Road in Kern County, also have numerous benefits that outweigh the unavoidable adverse impacts in the Fresno to Bakersfield section of the high-speed train system when viewed as part of the larger, statewide high-speed train system. These benefits are documented in the Final Project EIR/EIS in the areas of transportation, air quality, energy, land use, and socio-economics and are appropriate to consider in light of the Authority's first-tier decisions to move forward with a statewide electrified high-speed train system.

The Final EIR/EIS considers for environmental review purposes a scenario in which the 800-mile Full System (Phase 1 and Phase 2 full build out) would be operating and generating benefits in 2035. The level of benefits is more robust as of 2035 than the level of benefits associated with the implementation strategy laid out in the Authority's 2012 and 2014 Business Plans, which reflect an incremental approach to constructing and operating the system that would result in benefits accruing more slowly than described in Final EIR/EIS chapter 3. The differences are summarized in Final EIR/EIS Appendix 1A, and acknowledged below.

7.2.2.1 Transportation Benefits

The capacity of California's intercity transportation system is insufficient to meet existing and future demand and the current and project future congestion of the system will continue to result in deteriorating transportation conditions, reduced reliability, and increased travel times. The system has not kept pace with the tremendous increase in population, economic activity, and tourism in California. The interstate highway system, commercial airports, and conventional passenger rail system serving the intercity travel market are operating at or near capacity and will require large public investments for maintenance and expansion to meet existing demand and future growth over the next 20 years and beyond. Moreover, the ability to expand major highways and key airports is uncertain; some needed expansions may be impractical or may be constrained by physical, political, or other factors.

As described in the Chapter 1 of the Fresno to Bakersfield Final EIR/EIS, the HST System would meet the need for a safe and reliable mode of travel that would link the major metropolitan areas of the state and deliver predictable, consistent travel times sustainable over time. The HST System also would provide quick, competitive travel times between California's major intercity markets. For intermediate intercity trips such as Fresno to Los Angeles, the HST System would provide considerably quicker travel times than either air or automobile transportation, and would bring frequent HST service to portions of the state such as the Central Valley that are not well served by air transportation. In addition, the passenger cost for travel via the HST service would be lower than for travel by air for the same intercity markets.

By providing a new intercity, interregional, and regional passenger mode, the HST System will improve connectivity and accessibility to other existing transit modes and airports. Travel options available in the Central Valley and other areas of the state with limited bus, rail, and air service for intercity trips will be improved. The HST System within the Central Valley would provide beneficial transportation impacts beyond additional modal connectivity. The change from vehicles to HST would reduce daily auto trips and corresponding vehicle delay and congestion. A substantial amount of intercity auto travel (primarily using SR 99) would divert to HST service, relieving projected future congestion on SR 99. The reduction in future intercity trips would also improve the ability of SR 99 to accommodate freight traffic and would improve projected travel speeds on the freeway. The HST System also provides system redundancy in cases of extreme events such as adverse weather or petroleum shortages (HST trains are powered by electricity which can be generated from non-petroleum-fueled sources; automobiles and airplanes currently require petroleum). The HST System will provide a predominantly separate transportation system that will be less susceptible to many factors influencing reliability, such as capacity constraints, congestion, and incidents that disrupt service.

The HST System will add capacity to the state's transportation infrastructure and reduce traffic on certain intercity highways and around airports to the extent that intercity trips are diverted to the HST System. Diversions from the automobile to HST could lead to a projected 7% to 10% reduction in vehicles miles traveled on the highway system to and from the Fresno/Bakersfield region (7% if based on a ticket price of 83% of airfare cost, or 10% if based on a ticket price of 50% of air fare cost). This translates to a reduction in daily VMT in Fresno, Kings, Tulare, and Kern counties of 5.4 to 8 million miles daily in 2035 as compared to No Project. The HST System also will decrease injuries and fatalities due to diversion of trips from highways, will improve connectivity, and will add a variety of connections to existing modes, additional frequencies, and greater flexibility.

The HST System within the Central Valley would provide a new regional surface transportation system that complements and connects with existing transportation modes. At a regional level, HST service would reduce vehicle miles traveled by providing motorists an alternative to relying on existing interregional and intercity freeways and highways. The HST System would be grade-

separated from freeways, highways, and roads, allowing vehicular traffic to pass unimpeded under or over the rail corridor.

The State's growing population, and the growing demand on the State's transportation system, was the early impetus for high-speed rail in California. The same trends that motivated the State to investigate, support, and proceed to plan the high-speed rail system are just as compelling today as in the last two decades. The State's need for a safe, reliable, and fast mode of intercity travel to meet its growing transportation demands continues to a critical policy basis for moving the project forward (Authority, 2012f, pp. 16-18).

7.2.2.2 Environmental Benefits

In addition to reducing highway congestion, the HST System as a whole will provide substantial improvement in air quality and transportation energy efficiency. The HST System will decrease air pollution statewide and in all air basins analyzed by reducing pollution generated by automobile combustion engines; air pollution is of particular concern in the San Joaquin Valley, which will benefit greatly from operation of the HST. This is a result of decreased vehicle miles traveled by automobiles and decreased automobile congestion. Emissions of CO, PM₁₀, PM_{2.5}, NO_x, VOC, and CO₂ will all be reduced as compared to the No Project Alternative in 2035. Compared to the No Project scenario, the HST System will result in a reduction in transportation energy consumed of 63,262 to 94,760 MMBtus daily. 12.7 million barrels of oil by 2035 and 1.7 to 2.5 million metric tons per year of CO₂ emissions compared to the No Project Alternative, by 2035, helping the state reduce GHG emissions consistent with the goals of Assembly Bill 32 (AB 32) and Executive Order S-3-05. The Central Valley contribution to this reduction would be up to 0.56 million metric tons (1.2 billion pounds) of GHG emissions annually by 2035 for the Preferred Alternative.

The statewide HST System has minimized environmental impacts following existing transportation corridors to the maximum extent feasible. The preferred alignment and stations locations for the system as a whole have been crafted to avoid and/or minimize the potential impacts to cultural, park, recreational and wildlife refuges to the greatest extent feasible in light of the project's objectives. In this way, the HST System meets the purpose and need and project objectives for improving the state's transportation options, while doing so in an environmentally sensitive way.

The USACE and the U.S. EPA have both concurred (USACE December 19, 2013 and U.S. EPA December 19, 2013) that the Preferred Alternative north of 7th Standard Road is the preliminary Least Environmentally Damaging Practicable Alternative (LEDPA). For this reason, the Preferred Alternative north of 7th Standard Road is the alternative for the Fresno to Bakersfield Section that will have the highest likelihood of being efficiently constructed and operated.

7.2.2.3 Consistency with State Policies in Executive Order S-3-05, Assembly Bill 32 and Senate Bill 375

In 2005, California set statewide targets for reducing GHG emissions. Executive Order S-3-05 requires that GHG emissions be reduced to 2000 levels by the year 2010, to 1990 levels by the year 2020, and 80% below 1990 levels by the year 2050. Shortly after the issuance of this executive order, the California State Legislature passed AB 32, the Global Warming Solutions Act of 2006. AB 32 recognizes that California is the source of substantial amounts of GHG emissions and that global climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. AB 32 requires that the California Air Resources Board (CARB), the state agency charged with regulating air quality, establish a statewide greenhouse gas emissions limit to be achieved by 2020, with the intent that the emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gasses beyond 2020. AB 32 also requires that CARB create a plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases" in

California. This plan was developed by CARB in 2008 as the Climate Change Scoping Plan (California Air Resources Board 2008), the state's road map to reaching the GHG reduction goals required by AB 32. The Plan supports the implementation of a High-Speed Rail System to provide more mobility choice and reduce GHG emissions. The "Approved Scoping Plan" was adopted by the CARB in December 2008 and reapproved by the CARB in August 2011 after additional alternatives analysis was added in response to litigation.

Adopted in September 2008, Senate Bill 375 (SB 375) provides a new planning process to coordinate community development and land use planning with Regional Transportation Plans (RTPs), in an effort to reduce sprawling land use patterns, and thereby reduce VMT and associated VMT. SB 375 is one major tool being utilized to meet the AB 32 goals. SB 375 sets priorities to help California meet GHG reduction goals and requires that RTPs prepared by MPOs include a "sustainable communities strategy" that supports the GHG emission reduction targets set by CARB. The first SCS document(s) for the Central Valley are not required to be completed as of 2012. However, because of the potential for increased TOD-type development and other land-use planning benefits (discussed below) in the Fresno and Bakersfield areas from HST implementation there, the HST will be supportive of the SCS document(s) by providing a HST as a transportation opportunity with its associated benefits to land use patterns, which will can the SCS document(s) meet SB 375 GHG reduction targets. By way of analogy, the SCS recently completed by Southern California Association of Governments (SCAG) includes Phase 1 of the California HST, and therefore includes the analysis performed to demonstrate that SCAG's RTP/SCS meets the greenhouse gas emission reduction targets set by the Air Resources Board per the requirements of SB 375.

The transportation sector is responsible for about 40% of California's GHG emissions (California Air Resources Board 2010). Emissions of criteria pollutants (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide) and GHG emissions from motor vehicles are directly related to the amount of fuel burned and affect air quality in the San Joaquin Valley. The San Joaquin Valley Air Basin exceeds federal and state air quality standards for ozone, PM_{2.5}, and for the state's 24-hour standard for PM₁₀. The projected population growth (see Section 3.19, Regional Growth) in the San Joaquin Valley will result in an increase in VMT (see Section 3.2, Transportation) and the volume of pollutants emitted by motor vehicles. The continued increase in traffic will exacerbate the existing air quality problem and impede the region's ability to attain state and federal ambient air quality standards. Because emissions are directly proportional to the amount of fuel burned, offering effective transportation choices that can reduce driving will be critical for reducing these emissions.

Compared to travel by car, an electric-powered HST System would reduce carbon dioxide (CO₂) emissions. The HST System would provide a more energy-efficient travel mode; a trip on the HST System would use one-third the energy of a similar trip by air, and one-fifth the energy of a trip made by car (Bay Area Council Economic Institute 2008). In addition, the HST System affords a new opportunity to serve as the backbone of a comprehensive transportation network with connectivity between the statewide, regional, and local transit systems. Providing an interconnected network of alternative transportation options that support more concentrated development around major transit access points, establishes a new framework for the state to integrate land use and transportation decision-making.

7.2.2.4 Land Use Planning Benefits

In the vicinity of HST stations, the HST System will generally be compatible with local, regional, and state plans and policies that support rail systems, including the HST, and transit-oriented development (TOD). It will offer opportunities for increased infill development and redevelopment of downtown centers, which would reduce pressures for conversion of surrounding agricultural land to non-agricultural uses. The HST System will promote transit-

oriented, higher-density development around transit nodes as the key to stimulate in-fill development that makes more efficient use of land and resources, can better sustain population growth, and reduce development pressures on the surrounding agricultural lands. The increased density of development in and around urban HST stations yields the additional public benefit of making public infrastructure improvements more cost-effective. The HST stations in Fresno and Bakersfield would create a beneficial change in visual character when viewed from adjacent downtown locations. The indirect effects of the project would be most noticeable at the HST stations and are expected to result in an overall increase in visual quality (Section 3.16). Additionally, the HST System is expected to be a catalyst for wider adoption of smart growth principles in communities near HST stations.

The HST System will also meet the need for improved inter-modal connectivity with existing local and commuter transit systems. HST stations in California will be multi-modal transportation hubs. The concept of the HST station as a transportation hub is also consistent with the Revised 2012 Business Plan, the primary difference being a lower level of ridership projected during the early years on implementation and operation. All the selected high-speed rail station locations will provide linkage with local and regional transit, airports, and highways. In particular, convenient links to other rail services (heavy rail, commuter rail, light rail, and conventional intercity) will promote TOD at stations by increasing ridership and pedestrian activity at these "hub" stations. A high level of accessibility and activity at the stations can make the nearby area more attractive for additional economic activity. Most of the potential stations identified for further evaluation at the project level are located in the heart of the downtown/central city areas of California's major cities, minimizing potential impacts on the environment and maximizing connectivity with other modes of transportation.

7.2.2.5 Economic and Social Benefits

The HST System will generate economic benefits related to revenue generated by the system, economic growth and jobs generated by construction and operation of the system, benefits from reduced delays to air and auto travelers, and economic advantages related to proximity to the HST System.

Construction of the HST System will generate the equivalent of more than 1 million construction related job years for construction of the blended Phase 1 HST System (Authority 2012d, page 9-12; Authority 2012f, p. 59), including about 22,800 job years within Fresno, Kings, Tulare, and Kern counties. Operations and maintenance of the HST System would directly employ about 3,400 people by 2040 (Authority 2012f, p. 60), and the potential statewide creation of about 400,000 long-term permanent jobs. Operation of the HST System is estimated to create approximately 1,300-3,400 direct jobs (Authority 2012d and 2012f), and overall about 47,500 new jobs within the region. In addition, the HST System would improve the economic productivity of workers engaging in intercity travel by providing an option to avoid the delays and unpredictability associated with air and highway travel. These economic benefits are in marked contrast to the cost of expanding airports and highways, which would be approximately twice the cost of the HST System to meet the future transportation demand, even assuming this type of expansion is even feasible (Authority 2012d, page 3-15).

Experiences in other countries have shown that an HST System can provide a location advantage to those areas in proximity to an HST station because an HST System would improve accessibility to labor and customer markets, potentially improving the competitiveness of the state's industries and the overall economy. Businesses that locate in proximity to an HST station could operate more efficiently than businesses that locate elsewhere (Section 3.13). This competitive advantage may be quite pronounced in high-wage employment sectors that are frequently in high demand in many communities. Finally, the HST System would provide an opportunity for connectivity for sectors of the population who currently are limited in their travel options. In addition, HST is a

mode of transportation that can enhance and strengthen urban centers. In combination with appropriate local land use policies, the increased accessibility afforded by the high-speed service could encourage more intensive development and may lead to higher property values around stations.

7.2.2.6 Benefits Will Accrue More Slowly Under The Phased Implementation Approach in the Authority's Business Plans, But Will Still be Significant Benefits and They Will Build Over Time

The Authority's 2012 and 2014 Business Plans describe a phased implementation strategy for construction of the HST System. In contrast to the assumptions in the Final EIR/EIS, the Business Plans identify the HST System being constructed in phases over time, rather than having all 800 miles of the statewide system being constructed concurrently and with fully developed operations in 2035. Because the system will be constructed and implemented more slowly over time than assumed in the Final EIR/EIS, benefits of the system will also accrue more slowly over time than calculated in the Final EIR/EIS. Statewide automobile VMT reductions for a Phase 1 Blended approach would be about 36-38% of the benefits described above, and air travel VMT reductions about 37-45% of that described above. The Phase 1 Blended approach would yield a GHG emissions reduction of approximately 0.84 to 1.4 million metric tons annually in 2035, in contrast to the 1.7 to 2.5 million metric tons annually as discussed for the Final EIR/EIS. Energy use benefits would be less for a Phase 1 Blended approach, totaling 31,300 to 52,000 MMBtus daily, versus the 63,262 to 94,755 MMBtus daily in 2035 described in the Final EIR/EIS. This still amounts to a savings of 5,400 to 9,000 barrels of oil per day.

Finally, the Authority has previously committed to power the high-speed train with an energy portfolio of 100% renewable sources. The Final EIR/EIS calculations of GHG reduction benefits for either the full system in 2035 or in Appendix 1A for the Phase 1 Blended approach are conservative in that they do not assume a 100% renewable portfolio. A 100% renewable energy portfolio is realistic to implement in light of available, viable sources offered by viable energy providers. The environmental benefit of powering the high-speed train with 100% renewable energy is substantial in terms of CO₂ reduction benefits. When accounting for the 100% renewable energy portfolio in emissions modeling, the results demonstrate CO₂ reductions are similar to those described in the Final EIR/EIS, despite modeling a phased implementation of the system with fewer riders. Over time, a 100% renewable portfolio has potential to double the GHG reduction benefits from high-speed train operations over a non-renewable portfolio.

In summary, although benefits of the high-speed train system in the areas of VMT reduction, GHG reduction, and reduced transportation energy use are lower than described in the Final EIR/EIS main impact analysis based on the phased implementation strategy in the Authority's Business Plans, the benefits are still significantly positive, the benefits will continue to accrue and grow over time, and they will eventually achieve the level of benefit the EIR/EIS describes. These benefits therefore still outweigh the significant and unavoidable adverse environmental impacts described in the Final EIR/EIS and CEQA Findings of Fact.

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