

MADERA STATION RELOCATION PROJECT

VOLUME 1

DRAFT INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

SAN JOAQUIN JOINT POWERS AUTHORITY

October 2020



Draft Initial Study/ Mitigated Negative Declaration

Volume 1

Madera Station Relocation Project

San Joaquin Joint Powers Authority
October 2020

Prepared for:
San Joaquin Joint Powers Authority
949 Channel Street
Stockton, CA 95202

Prepared by:
AECOM
300 Lakeside Dr
Oakland, CA 94612

Table of Contents

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED	xiii
MITIGATED NEGATIVE DECLARATION	xiv
1. INTRODUCTION.....	1
1.1. Background.....	2
1.2. Project Setting	5
1.3. Project Location	6
2. PROJECT DESCRIPTION	8
2.1. Project Environmental Footprint	8
2.2. Phase 1 – San Joaquins Relocated Station	10
2.2.1. Platform.....	10
2.2.2. Trackwork.....	10
2.2.3. Bus Depot	10
2.2.4. Parking.....	10
2.2.5. Access Road	10
2.2.6. Roadway Network	12
2.2.7. Buildings and Structures.....	12
2.2.8. Trains	12
2.3. Phase 2 – HSR Interim Operating Segment Station	12
2.3.1. Platform.....	12
2.3.2. Trackwork and Overhead Contact System	17
2.3.3. Bus Depot	17
2.3.4. Parking.....	18
2.3.5. Access Road	18
2.3.6. Road Network	18
2.3.7. Buildings and Structures.....	18
2.3.8. Trains	19
2.4. Construction Period	19
2.5. Preliminary Project Capital Cost Estimates	20
2.6. Operations	20
2.7. Required Permits	21
2.8. Public Outreach	22

3.	INITIAL STUDY	23
3.1.	AESTHETICS	23
3.2.	AGRICULTURE AND FORESTRY RESOURCES	29
3.3.	AIR QUALITY	37
3.4.	BIOLOGICAL RESOURCES	51
3.5.	CULTURAL RESOURCES	84
3.6.	ENERGY	90
3.7.	GEOLOGY AND SOILS	97
3.8.	GREENHOUSE GAS EMISSIONS	111
3.9.	HAZARDS AND HAZARDOUS MATERIALS	119
3.10.	HYDROLOGY AND WATER QUALITY	133
3.11.	LAND USE AND PLANNING	143
3.12.	MINERAL RESOURCES	154
3.13.	NOISE	156
3.14.	POPULATION AND HOUSING	163
3.15.	PUBLIC SERVICES	166
3.16.	RECREATION	173
3.17.	TRANSPORTATION	176
3.18.	TRIBAL CULTURAL RESOURCES	186
3.19.	UTILITIES AND SERVICE SYSTEMS	190
3.20.	WILDFIRE	198
3.21.	MANDATORY FINDINGS OF SIGNIFICANCE	202
4.	LIST OF PREPARERS	207
5.	REFERENCES	208

Figures

Figure 1-1	San Joaquins Service Map	1
Figure 1-2	Existing Madera San Joaquins Station at Madera Acres	5
Figure 1-3	Existing Madera Station	6
Figure 1-4	Proposed Relocated Station at Avenue 12	7
Figure 2-1	Proposed Project Environmental Footprint	9
Figure 2-2	Proposed Design for Project Phase 1 – San Joaquins Relocated Station (Overview)	11
Figure 2-3	Proposed Design for the Project Phase 1 – San Joaquins Relocated Station (Detailed View).....	13
Figure 2-4	Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Overview)	14
Figure 2-5	Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Detailed View).....	15
Figure 2-6	Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Station Close-In View)	16
Figure 3.2-1	Farmland Classifications	31
Figure 3.4-1	Special-Status Plant Species	53
Figure 3.4-2	Designated Wetlands Part 1.....	54
Figure 3.4-3	Designated Wetlands Part 2.....	55
Figure 3.7-1	California Earthquake Zone Map.....	99
Figure 3.7-2	Potential for Soil Erosion to Water.....	102
Figure 3.7-3	Potential for Soil Erosion to Wind	103
Figure 3.7-4	Potential for Soils Related to Shrink-Swell	106
Figure 3.9-1	SWRCB and DTSC Sites	128
Figure 3.10-1	FEMA Flood Zones	141
Figure 3.11-1	Existing Land Use	145
Figure 3.11-2	General Plan Land Use Designations	150

Figure 3.11-3	Development Projects in Process in Madera County.....	153
Figure 3.15-1	Public Service Facility Location Map	168
Figure 3.16-1	Recreational Facility Location Map.....	174
Figure 3.19-1	City of Madera Sewer Capital Improvement Plan Map 2014	194
Figure 3.19-2	Madera Irrigation District Service Area	196
Figure 3.20-1	Madera County Fire Hazard Severity Zones	201

Tables

Table 2-1	Preliminary Project Capital Cost Estimates	20
Table 2.6-1	Estimated Project Ridership	21
Table 3.3-1	SJVAPCD Thresholds of Significance for Criteria Pollutants during Construction Activities	38
Table 3.3-2	Unmitigated Construction Emissions (Phase 1 – San Joaquins Relocated Station)	41
Table 3.3-3	Mitigated Construction Emissions (Phase 1 – San Joaquins Relocated Station)	42
Table 3.3-4	Emissions Reductions Associated with Net Reduction in VMT	44
Table 3.3-5	Unmitigated Construction Emissions (Phase 2 – HSR Interim Operating Segment Station).....	45
Table 3.3-6	Mitigated Construction Emissions (Phase 2 – HSR Interim Operating Segment Station).....	45
Table 3.6-1	Construction Energy Requirements (Phase 1 – San Joaquins Relocated Station)	91
Table 3.6-2	Annual Operational Energy Requirements (Phase 1 – San Joaquins Relocated Station)	92
Table 3.6-3	Construction Energy Requirements (Phase 2 – HSR Interim Operating Segment Station).....	93
Table 3.6-4	Operational Energy Requirements (Phase 2 – HSR Interim Operating Segment Station).....	94

Table 3.8-1	Construction-Related GHG Emissions (Phase 1 – San Joaquins Relocated Station)	113
Table 3.8-2	Annual Operational GHG Emissions (Phase 1 – San Joaquins Relocated Station)	115
Table 3.8-3	Construction-Related GHG Emissions (Phase 2 – HSR Interim Operating Segment Station).....	115
Table 3.8-4	Annual Operational GHG Emissions (Phase 2 – HSR Interim Operating Segment Station).....	116
Table 3.13-1	Noise Impact Assessment for Construction Activities (Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station).....	159
Table 3.13-2	Summary of Operational Noise Levels (Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station).....	160
Table 3.13-3	Summary of Operational Vibration Impact Assessment (Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station).....	161
Table 3.15-1	Public Service Facility Summary	167
Table 3.16-1	Recreational Facility Summary.....	173
Table 3.17-1	Estimated Project Ridership	179

Appendices

Appendix A	Biological Resources Technical Memorandum
Appendix B	Cultural Resources Technical Memorandum
Appendix C	Hazardous Materials Technical Memorandum
Appendix D	Noise Technical Memorandum
Appendix E	Air Quality/Greenhouse Gases/Energy Calculations
Appendix F	Preliminary Project Capital Cost Estimates
Appendix G	Ridership Technical Memorandum
Appendix H	Public Outreach
Volume 2	15% Preliminary Engineering Drawings

Acronyms and Abbreviations

AB	Assembly Bill
AE	Agriculture Exclusive
AQAP	Air quality attainment plans
AQMD	Air Quality Management District
ARE	Agriculture Rural Exclusive
BART	Bay Area Rapid Transit
BATs	Best Available Technology
BCTs	Best Conventional Pollutant Control Technology
BMPs	Best Management Practices
BNSF	Burlington Northern and Santa Fe Railway
BRMP	Biological Resources Management Plan
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAHSR	California High-Speed Rail
Cal. Code Regs	California Code of Regulations
Cal Public Res	California Public Resources
Cal/OSHA	California Occupational Safety and Health Administration
CALGreen	California Green Building Standards Code
Cal-IPC	California Invasive Plant Council
CalSTA	California State Transportation Agency
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	Californian Endangered Species Act
CH ₄	Methane

CHSRA	California High-Speed Rail Authority
CIDH	Cast-in-Drilled-Hole
CNDDB	California Natural Diversity Database
CO	Carbon monoxide
CO ₂ e	Carbon dioxide equivalent
COVID-19	Coronavirus disease 2019
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRMP	Construction Risk Management Plan
CTC	County Transportation Commission
CTS	California Natural Diversity Database
CUPA	Certified Unified Program Agency
CVFPB	Central Valley Flood Protection Board
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
DAR	Dial-A-Ride
dba	A-weighted decibel
DOC	California Department of Conservation
Diesel PM	Diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMFAC	EMission FACtor
EMU	Electric Multiple Units
EPA	U.S. Environmental Protection Agency
ERA	Environmentally Restricted Area
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency

FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	Greenhouse gas
GPS	Global Positioning System
GWP	Global warming potential
HFCs	hydrofluorocarbons
HSR	high-speed rail
IS/MND	Initial Study / Mitigated Negative Declaration
IOS	Interim Operating Segment
ITP	Incidental Take Permit
LAMP	Local Agency Management Program
lbs/day	Pounds per day
LDR	Low Density Residential
LED	Light-emitting diode
Leq	Equivalent sound level
LOS	Level of service
LTS	Less than significant
MAX	Madera Area Express
MBTA	Migratory Bird Treaty Act
MCCC	Madera Community College Center
MMBTu	Million British Thermal Units
MMRP	Mitigation Monitoring and Reporting Program
MOU	Memorandum of Understanding
mph	Miles per hour
MT	Metric tons
MUTCD	Manual on Uniform Traffic Control Devices
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OCS	Overhead Contact System
OEHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
OWTS	Onsite Wastewater Treatment System
PCAPCD	Placer County Air Pollution Control District
PFCs	Perfluorocarbons
PG&E	Pacific Gas & Electric
Phase 1	San Joaquins Relocated Station
Phase 2	HSR Interim Operating Segment Station
PI	Public Institution
PM ₁₀	Particulate matter less than 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
pmpg	Passenger-miles per gallon
PPV	Peak particle velocity
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
RCRA	Resource Conservation and Recovery Act
ROG	Reactive organic gases
ROW	Right-of-way
RRP	Restoration and Revegetation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCCC	State Center Community College
SF ₆	Sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act

SIP	State Implementation Plan
SJCOG	San Joaquin Council of Governments
SJIPA	San Joaquin Joint Powers Authority
SJRRC	San Joaquin Regional Rail Commission
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLF	Sacred Lands File
SMGB	State Mining and Geology Board
SO ₂	Sulfur dioxide
SOX	Sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SR	State Route
SSJVIC	Southern San Joaquin Valley Information Center
SSPMP	Special-Status Plant Mitigation Plan
SVP	Society of Vertebrate Paleontology
SW	Seasonal Wetland
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWRP	Stormwater Resource Plan
TAC	Toxic air contaminant
TIRCP	Transit and Intercity Rail Capital Program
TOD	Transit Oriented Development
TPSS	Traction Power Substation
tpy	Tons Per Year
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VdB	Velocity Level in Decibel (Vibration)

VLDR	Very Low Density Residential
VMT	Vehicle Miles Traveled
WEAP	Worker Environmental Awareness Program

ORGANIZATION OF THIS DOCUMENT

This document is organized in order to comply with the guidelines for Initial Study and Mitigated Negative Declaration as provide in the 2020 California Environmental Quality Act (CEQA) Guidelines. As such, the organization of this document is as follows:

- **Environmental Factors Potentially Affected.** The language and format of this section is taken from Appendix G of the 2020 CEQA Guidelines, specifically Page 309. This section provides a determination of the Section 3 Initial Study. It also contains the signature of the lead agency.
- **Mitigated Negative Declaration.** This section contains a brief summary of the project information. This section also provides a consolidated list all of the mitigation measures presented in Section 3 Initial Study. This listing of mitigation measures in this section is typical and similar in format to an executive summary.
- **Section 1 Introduction.** This section provides an introduction to the lead agency, the history of the proposed project and its setting.
- **Section 2 Project Description.** This section provides a detailed description of the proposed Project, its elements, construction and operational information, as well as figures.
- **Section 3 Initial Study.** This section follows the 21 environmental topics as presented in the 2020 CEQA Guidelines Appendix G. The questions contained in Appendix G are presented and responses to each question are provided with research to back up the determinations. Mitigation measures are presented where needed.
- **Section 4 List of Preparers.** This section lists all of the preparers and reviewers of this document by agency and consultant.
- **Section 5 References.** This section presents the references used for the completion of the Initial Study.
- **Appendices.** This document has eight appendices, of which four are related to technical memos completed for Biological Resources, Cultural Resources, Hazardous Materials, and Noise. Other appendices include Air Quality/Greenhouse Gases/Energy Calculations, Preliminary Project Capital Cost Estimates, Ridership/Vehicle Miles Traveled/Parking Estimates and Public Outreach.
- **Volume 2** This drawing set illustrates the preliminary engineering for the Madera Station Relocation at the 15% design level and includes both Phase 1 and Phase 2 of the Project. Design disciplines include: track, roadway improvements, Madera Station platform, utilities, temporary construction area, and right-of-way.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

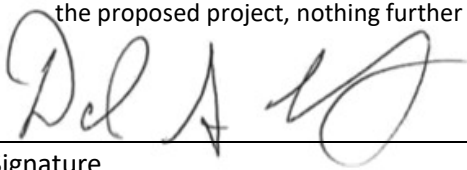
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology /Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology / Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the lead agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

Dan Leavitt, Manager of Regional Initiatives

San Joaquin Joint Powers Authority

October 13, 2020

Date

MITIGATED NEGATIVE DECLARATION

Date of Publication of Draft Mitigated Negative Declaration: October 14, 2020

Lead Agency: San Joaquin Joint Powers Authority

Agency Contact Person: Dan Leavitt, Manager of Regional Initiatives

Telephone: (209) 944-6266

Project Title: Madera Station Relocation Project

Project Sponsor: San Joaquin Joint Powers Authority

Project Contact Person: Dan Leavitt, Manager of Regional Initiatives

Telephone: (209) 944-6266

Project Location: Madera County

City and County: Madera County

Project Description: Refer to Section 2 in the main document.

THIS PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to Prepare a Negative Declaration), and the reasons documented in the Environmental Evaluation (Initial Study) for the Project, which is attached. Mitigation measures are included in this project to avoid potentially significant effects and reduce all impacts to less than significant. Mitigation measures are presented in summary in this table. The impacts that necessitated these mitigation measures are evaluated in Section 3 Initial Study, along with the determination of significance after their implementation.

AGRICULTURAL RESOURCES

MM- AG-1: *Conserve Important Farmlands (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland).*

The San Joaquin Joint Powers Authority (SJPA) shall enter into an agreement with the Department of Conservation and its California Farmland Conservancy Program to implement agricultural land mitigation. SJPA shall 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 Important Farmlands that are permanently converted to nonagricultural uses. SJPA shall document implementation of Mitigation Measure AG-1 through issuance of a compliance memorandum.

AIR QUALITY

MM-AQ-1. *Implement advanced emissions controls for off-road equipment.*

SJPA shall require that the construction contractor for all off-road equipment greater than 50 horsepower have engines that meet or exceed Tier 3 California Air Resources Board (CARB)/ U.S. Environmental Protection Agency (EPA) off-road emission standards, if commercially available. Lesser tier engines shall be allowed on a case-by-case basis when the contractor has documented that no Tier 3 engine equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete construction.

Documentation shall consist of signed written statements from at least two construction equipment rental firms or equivalent.

MM-AQ-2. *Implement advanced emissions controls for locomotives used for construction.*

SJPA shall require that the construction contractor for all diesel-powered locomotives used for construction to have engines that meet or exceed Tier 3 locomotive emission standards.

BIOLOGICAL RESOURCES

MM-BIO-1: *Designate Project Biologist(s), Contractor's Biologist(s), and Project Biological Monitor(s).*

During contract procurement for construction and construction management, and prior to ground-disturbing activities, designate a Project Biologist(s), a Contractor's Biologist(s), and a Project Biological Monitor(s), which would be responsible for conducting biological monitoring, overseeing regulatory compliance requirements, and monitoring restoration activities associated with ground-disturbing activities in accordance with the adopted mitigation measures and applicable laws. These roles are defined below:

Project Biologist: The Project Biologist represents and report directly to the Construction Management Team and is responsible for reporting and overseeing the biological resources mitigation measures presented below. The Project Biologist is also responsible for ensuring that the terms and conditions in U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) permits are outlined in the Mitigation Monitoring and Reporting Program (MMRP). The Project Biologist shall report to the overall construction management team, interact with the designated Resident Engineer (part of the Contractor), and shall work to provide quality assurance on the implementation of the mitigation measures as performed by the Contractor and the designated Contractor's Biologist. It is anticipated that the Project Biologist shall have specialized support from other biological monitors and shall work with the construction management team during deployment of the monitors and their respective responsibilities.

Contractor's Biologist: The Contractor's Biologist is responsible for implementing mitigation measures in compliance with the terms and conditions outlined in the MMRP and USFWS, USACE, RWQCB, and CDFW permits. The Contractor's Biologist shall work to implement mitigation reflected within the construction drawings and specifications. The Contractor's Biologist shall keep the Project Biologist informed of the progress, planning, implementation, and activities conducted in support of implementing the mitigation measures.

Project Biological Monitor: The Project Biological Monitor shall be approved by and report directly to the Project Biologist. The Project Biological Monitor shall be onsite during all ground-disturbing activities that have the potential to affect biological resources and shall be the principal agent(s) in the direct implementation of the MMRP and compliance assurance. The Project Biological Monitor is responsible for Worker Environmental Awareness Program (WEAP) training, general

surveys, compliance monitoring, and reporting. The Project Biological Monitor shall act on behalf of the Project Biologist.

The Project Biologist's duties include reviewing design documents and construction schedules and determining which Project Biological Monitor(s), depending on type of biological issues, need(s) to report to the construction site each day. The Project Biologist informs the Biological Monitors as to which mitigation measures should be documented each day and of any special issues that arise during meetings with the construction management team and/or the Contractor's team.

The Contractor's Biologist is responsible for the timely implementation of the biological mitigation measures as outlined in the MMRP and construction documents and pertinent resource agency permits. The Contractor's Biologist duties include monitoring construction crew activities, as needed, to document compliance with applicable mitigation measures and permit conditions.

MM-BIO-2: Regulatory Agency Access.

If requested, before, during, or upon completion of ground-disturbing activities, the Contractor shall allow access by USFWS, USACE, RWQCB, and CDFW staff to the construction site. Due to safety concerns, these agencies shall check in with the Resident Engineer prior to accessing the construction site.

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

Prior to ground-disturbing activities, prepare and implement a WEAP for construction crews. WEAP training materials include the following: discussion of the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act (MBTA), Clean Water Act, and the California Fish and Game Code; consequences and penalties for violation or noncompliance with these laws and regulations and Project permits; identification and value of special-status plants, special-status wildlife, jurisdictional waters, and special-status plant communities; 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, detail construction timing in relation to habitat and species' life stage requirements and discuss Project maps, showing areas of planned minimization and avoidance measures.

Implement the WEAP training before the initiation of construction activities and repeat, as needed, when new personnel begin work within the construction Footprint. Perform daily updates and synopsis of the training during the daily safety ("tailgate") meeting. Require that all personnel who attend the training sign an attendance list stating that they have received the WEAP training. Require that California High-Speed (CAHSR) maintenance crews attend WEAP training annually.

MM-BIO-4: Prepare and Implement a Noxious Weed Control Plan.

- Prior to ground-disturbing activities, the Contractor shall prepare and implement a Noxious Weed Control Plan to minimize or avoid the spread of noxious weeds during ground-disturbing activities. "Noxious Weeds" shall be defined, per California Food and Agricultural Code, Section 5004 as "any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species,

and difficult to control or eradicate.” In the Noxious Weed Control Plan, the Contractor shall address the following:

- Identify noxious weed control treatments including permitted herbicides, and manual and mechanical methods for application. Restrict herbicide application from use in environmentally sensitive areas.
- Determine timing of the noxious weed control treatment for each plant species.
- Identify fire prevention measures.

The Contractor shall implement the Noxious Weed Control Plan during the construction period and require that maintenance crews follow the guidelines in the Noxious Weed Control Plan during both the construction and operations of the Project.

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

During final design, the Contractor shall prepare a Biological Resources Management Plan (BRMP) and assemble the biological resources mitigation measures. In the BRMP, the Contractor shall include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP shall 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. Form the parameters for the BRMP with the mitigation measures from this section, including terms and conditions as applicable from the USFWS, USACE, RWQCB, and CDFW permits, as applicable.

In the BRMP, the Contractor shall organize the biological resources mitigation measures and terms and conditions to help facilitate their implementation. The Contractor shall oversee the implementation of the BRMP and shall prepare compliance reports to document implementation and performance.

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

During final design, the Contractor shall prepare a restoration and revegetation plan (RRP) for habitat subject to temporary ground disturbances during construction that would require decompaction or regrading, if appropriate.

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

Prior to ground-disturbing activities, to the extent practicable, the Contractor shall verify that environmental sensitive areas and environmentally restricted areas (ERAs) are delineated as appropriate. Environmentally sensitive areas are areas within the construction zones containing suitable 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 areas outside the construction Footprint that must be protected in-place during all construction activities.

Prior to ground-disturbing activities, the Contractor shall include all environmentally sensitive areas and ERAs on final construction plans (including grading and landscape plans). The Contractor shall prepare maps of all environmentally sensitive areas and ERAs on the design drawings and work to update these maps as necessary. The Contractor

shall submit these maps to the SJJPA for their review and approval prior to the start of construction.

Prior to ground-disturbing activities, install the environmentally sensitive area and ERAs. Mark environmentally sensitive areas and ERAs with high visibility temporary fencing to prevent encroachment of construction personnel and equipment onto sensitive areas. Designate the two categories, environmentally sensitive area and ERA, differently in the field (e.g., different colored flagging/fencing). Use sub-meter accurate global positioning system (GPS) equipment to delineate all environmentally sensitive areas and ERAs. Remove environmentally sensitive areas and ERA fencing when construction is complete, or the resource has been cleared according to agency permit conditions in the MMRP and construction drawings and specifications.

MM-BIO-8: Equipment Staging Areas.

Prior to ground-disturbing activities, the contractor shall locate staging areas for construction equipment outside sensitive biological resources including habitat for special-status species, habitats of concern, and wildlife movement corridors, to the maximum extent possible.

MM-BIO-9: Avoid Mono-Filament Netting.

During ground-disturbing activities, the Contractor shall verify that plastic monofilament netting (erosion-control matting) or similar material is not used in erosion control materials; substitutes include coconut hair matting or tackified hydroseeding compounds.

MM-BIO-10: Vehicle Traffic.

During ground-disturbing activities, the Contractor shall restrict Project-related vehicle traffic, within the construction area, to established roads, construction areas, and other designated areas. Contractor shall establish vehicle traffic locations disturbed by previous activities to prevent further adverse effects. Workers shall observe a 20-mph speed limit for construction areas with potential special-status species habitat. Lastly, the Contractor shall clearly flag and mark access routes and prohibit off-road traffic.

MM-BIO-11: Entrapment Prevention.

The Contractor shall cover all excavated, steep-sided holes or trenches, more than eight inches deep, at the close of each working day with plywood or similar materials or provide a minimum of one escape ramp per 10 feet of trenching constructed of earth fill. The Contractor shall thoroughly inspect such holes or trenches for trapped animals before filling.

Screen all culverts, or similar enclosed structures, with a diameter of 4 inches or greater to prevent use by wildlife. Clear stored material at the construction site for common and special-status wildlife species before the material is subsequently used or moved.

MM-BIO-12: Work Stoppage.

During ground-disturbing activities, the Contractor shall halt work in the event that a special-status wildlife species gains access to the Project Footprint under construction. The Contractor shall suspend ground-disturbing activities in the immediate area that could reasonably result in a take of special-status wildlife species. The Contractor shall continue the suspension until the individual leaves voluntarily, is relocated to a release

	area using USFWS- and/or CDFW-approved handling techniques and relocation methods, or as required by USFWS or CDFW.
MM-BIO-13: <i>'Take' Notification and Reporting.</i>	The Contractor shall notify the USFWS and/or CDFW immediately in the case of an accidental death or injury to a federal- or state-listed species during Project-related activities.
MM-BIO-14: <i>Post-Construction Compliance Reports.</i>	The Contractor shall submit post-construction compliance reports consistent with the appropriate agency (e.g., USFWS and CDFW) protocols within 90 days of completion of construction.
MM-BIO-15: <i>Conduct Pre-Construction Surveys for Special-Status Plant Species and Implement Avoidance, Minimization and Mitigation Measures.</i>	A qualified botanist shall conduct protocol-level preconstruction special-status plant surveys for potentially occurring species during the appropriate survey period, based on the blooming or identification period, and preceding the start of construction. All plant species encountered on the Project area shall be identified to the taxonomic level necessary to determine species status. The surveys shall be conducted no more than 5 years prior and no later than the blooming period immediately preceding the approval of a grading or improvement plan or any ground disturbing activities, including grubbing or clearing. If one or more occurrences of hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, or spiny-sealed button-celery are detected, CDFW and/or USFWS shall be consulted to develop avoidance and minimization measures to protect these occurrences from direct and indirect impacts during construction. Protection shall involve establishment of ERAs and marking them as environmentally sensitive areas for all occurrences, as described above in MM-BIO-7. If direct and indirect impacts on special-status plants cannot be avoided by protecting the occurrences within ERAs, MM-BIO-16 shall be implemented.
MM-BIO-16: <i>Implement Compensatory Mitigation Measures for Special-Status Plant Species in Consultation with CDFW and/or USFWS</i>	If special-status plant species in the vernal pool cannot be protected from direct and indirect impacts, USFWS and CDFW shall be consulted to determine if an Incidental Take Permit (ITP) is required and to develop appropriate compensatory mitigation for loss of special-status plants in the vernal pool. As directed by CDFW and/or USFWS (depending on whether the plant occurrences are state or federally listed), mitigation shall be accomplished by either (1) purchasing credits from an existing, approved mitigation bank that provides habitat for the affected special-status plant species, or (2) developing and implementing a Special-Status Plant Mitigation Plan for salvage, relocation and/or propagation of special-status plant species. Mitigation shall be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results of the preconstruction plan surveys) or at a greater ratio if specified in the ITP. If a Special-Status Plant Mitigation Plan is developed the mitigation strategy in the plan shall include performance standards for successful establishment of the target special-status plants and/or enhancement of existing habitat, and a monitoring and reporting program to track revegetation and/or enhancement success. This plan shall be developed in consultation with and approved by CDFW before construction begins. The Special-Status Plant Mitigation Plan shall include at least the following provisions:

- Before Project disturbance, identification of restoration areas within the Project area for seeding and/or transplanting of special-status plants, with data collection to determine appropriate microsites
- Before Project disturbance, measurement of existing special-status plant populations within the Project area for percent cover and density and establishment of these characteristics as the minimum success criteria for the species' cover and density as a result of restoration/enhancement.
- A plan and protocols for appropriate and ecologically sensitive collection and storage of special-status plant seeds, rhizomes, and plants from the Project area.
- Transplanting and seeding protocols for special-status plants.
- Adaptive management measures and a remedial planting plan.
- Revegetation and/or enhancement monitoring and reporting for at least 3 years.

MM-BIO-17: *Conduct a Site Assessment for California Tiger Salamander and Implement Avoidance and Minimization Measures.*

Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment of the Project area vernal pool and seasonal wetlands and adjacent uplands 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 2003). If the site assessment determines that there is a likelihood that the California tiger salamander may occur in wetlands or in upland habitat within the Project Footprint, the USFWS and CDFW shall be consulted, and field surveys shall be conducted to confirm presence or absence of California tiger salamanders, as required in the USFWS 2003 guidance. If aquatic and upland habitat for California tiger salamanders are identified during the survey, these areas shall be mapped and flagged during preconstruction surveys. Protection shall involve establishment of environmentally restricted areas (ERAs) and environmentally sensitive areas to protect aquatic and/or upland habitat for California tiger salamander within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on California tiger salamander habitat cannot be avoided by protecting the habitat within an environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-18.

MM-BIO-18: *Secure Incidental Take Permits for California Tiger Salamander from CDFW and USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.*

If the site assessment and surveys described in MM-BIO-17 establish that California tiger salamander are likely to be present in aquatic or upland habitat in the Project Footprint, and that impacts on aquatic and upland habitat for California tiger salamanders cannot be avoided during construction, ITPs shall be secured from the USFWS and CDFW before construction. All avoidance, minimization and mitigation measures specified in the USFWS and CDFW ITPs shall be implemented during construction. Mitigation shall include purchase of credits at an approved California tiger salamander mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.

MM-BIO-19: *Conduct a Site Assessment for Western Spadefoot and Implement Avoidance and Minimization Measures*

Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment for western spadefoot. If the site assessment determines that there is a likelihood that western spadefoot may occur in wetlands or upland habitat within the Project Footprint, aquatic and upland habitat for this species shall be mapped and flagged during the surveys. Protection

	<p>shall involve establishment of ERAs and environmentally sensitive areas to protect aquatic and/or upland habitat for western spadefoot within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on western spadefoot habitat cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-20.</p>
<p>MM-BIO-20: <i>Secure Compensatory Mitigation to Offset Impacts on Western Spadefoot.</i></p>	<p>If the surveys described in MM-BIO-19 determine that western spadefoot are present in aquatic or upland habitat in the Project Footprint, mitigation credits shall be purchased at an approved mitigation bank for western spadefoot at a minimum 1:1 ratio.</p>
<p>MM-BIO-21: <i>Establish Environmentally Sensitive Areas and ERAs around Seasonal Wetlands and the Vernal Pool to Protect Vernal Pool Fairy Shrimp and Other Vernal Pool Invertebrates.</i></p>	<p>Prior to ground-disturbing activities, the Project Biologist and the Contractor Biologist shall establish ERAs and environmentally sensitive areas to protect aquatic habitat (the vernal pool and six seasonal wetlands) for vernal pool invertebrates. If direct and indirect impacts on vernal pool fairy shrimp and other special-status vernal pool invertebrates cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-22.</p>
<p>MM-BIO-22: <i>Secure Incidental Take Permit for Vernal Pool Fairy Shrimp from USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.</i></p>	<p>If direct and indirect impacts on vernal pool fairy shrimp cannot be avoided with establishment and maintenance of environmentally sensitive areas and ERAs, an ITP shall be secured from the USFWS before construction. All avoidance, minimization and mitigation measures specified in the ITPs shall be implemented during construction. Mitigation shall include purchasing credits at an approved vernal pool fairy shrimp mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.</p>
<p>MM-BIO-23: <i>Conduct Pre-Construction Surveys for Swainson's Hawk and Implement Protective Buffers.</i></p>	<p>The Project Biologist shall conduct preconstruction surveys for Swainson's hawks during the nesting season (March 1 through August 21) within the Project Footprint and of all suitable nesting habitat within line of sight of construction activities within a 0.5-mile radius of the Project Footprint. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. Guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (SHTAC 2000) shall be followed for surveys for Swainson's hawk. This requires that surveys be conducted for at least the two survey periods prior to the start of construction. The survey periods are as follows:</p> <p>Period I. January-March 20, Period II. March 20 to April 5, Period III. April 5 to April 20, Period IV. April 21 to June 10 (monitoring known nests only), Period V. June 10 to July 30 (post-fledging).</p> <p>If active Swainson's hawk or other raptor nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting raptors and their young. No Project activity shall commence within the buffer areas until</p>

the Project Biologist has determined in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.

Monitoring of the nest by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or Project Biological Monitor.

MM-BIO-24: Conduct Pre-Construction Surveys for Burrowing Owls and Implement Protective Buffers.

The Project Biologist shall conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the Project Footprint. Surveys shall be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) which requires that four survey visits be conducted. Surveys conducted during the breeding season (February 1 to August 31) must include one visit between February 15 and April 15 and a minimum of three survey visits spread three weeks apart between April 15 and July 15. Four survey visits spread evenly through the nonbreeding season (September 1 through January 31) are required for nonbreeding surveys. If no occupied burrows are found, no further avoidance and minimization measures shall be required. Surveys for burrowing owl shall be conducted by walking transects with centerlines spaced no more than 65 feet apart to search the ground for burrows.

If an active burrow is found during the nonbreeding season, the Project applicant shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan shall be developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). Owls shall be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If an active burrow is found during the breeding season, occupied burrows shall not be disturbed and shall be provided with a 150- to 1,500-foot protective buffer unless the Project Biologist or Project Biological Monitor verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150- to 1,500-feet) shall depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (2012:9). The size of the buffer may be reduced if a the Project Biologist or Project Biological Monitor, in consultation with CDFW, determines burrowing owls would not be adversely affected by the proposed

activities. If a smaller than recommended buffer is used, a scientifically-rigorous monitoring program approved by CDFW shall be implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls shall be relocated outside the impact area if their burrows cannot be avoided or adequately protected with a no-disturbance buffer. Relocation shall follow a burrowing owl exclusion and relocation plan developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

MM-BIO-25: *Conduct Pre-Construction Surveys for Nesting Bird Species and Establish Protective Buffers.*

If construction activities occur during the nesting bird season (February 1 to August 31), a focused survey to identify protected bird nests shall be conducted by the Project Biologist or the Project Biological Monitor before construction begins. Surveys shall include all areas of suitable nesting habitat within 300 feet of the Project Footprint. If no active nests are found, no further avoidance or minimization measures shall be required.

If active nests are found, appropriate buffers shall be established to avoid impacts. No Project activity shall commence within the buffer area until the Project Biologist or Project Biological Monitor, in consultation with CDFW, confirms the nest is no longer active. Depending on the species of bird and its sensitivity, 50 to 300-feet shall likely to be needed to avoid indirect Project impacts on nesting activities. The size of the buffers may be reduced in consultation with CDFW if the Project Biologist or Project Biological Monitor determines that Project activity within a reduced buffer shall not be likely to adversely affect the nest.

Monitoring of active nests by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or the Project Biological Monitor.

CULTURAL RESOURCES

MM-CUL-1: *Conduct cultural resources awareness training.*

Prior to construction (any ground-disturbing activity), the construction contractor shall have a qualified archaeologist implement cultural resources awareness training to all Project personnel (laborers and supervisors) who shall have the potential to encounter cultural resources on the Project. The training shall address the types of cultural resources that may be expected within the Project Footprint, measures to avoid and protect archaeological artifacts and features, the mandatory procedures to follow should potential cultural resources be exposed during construction, and the legalities of destroying or removing resources or human remains.

Implementation of mitigation measures MM-CUL-1 and MM-CUL-2 (described below) would reduce the likelihood of impacts to previously

	<p>unidentified cultural resources; however, given the increased potential to encounter buried archaeological resources in the northern portion of the Project Footprint, it is uncertain if these requirements alone would reduce such impacts to a less than significant level. MM-CUL-3 and MM-CUL-4 are proposed to provide additional protection to potential resources.</p>
<p>MM-CUL-2: <i>Implement measures to protect unidentified cultural resources.</i></p>	<p>During construction (any ground-disturbing activity), should there be an unanticipated archaeological discovery, all work within 50 feet of the resource shall halt, and the Project proponent shall consult a qualified archaeologist to assess the significance of the discovery, according to CEQA Guidelines Section 15064.5, and recommend appropriate measures. Should the discovery include human remains, all parties shall comply with state regulations and guidelines regarding the treatment of human remains, including Health & Safety Code Section 8010 et seq., and Cal. Public Res. Code Section 5097.98, and consult with Native American Heritage Commission (NAHC), and tribal groups.</p>
<p>MM-CUL-3: <i>Preconstruction testing or archaeological monitoring.</i></p>	<p>Based on the geoarchaeological sensitivity assessment there is an increased potential for encountering buried archaeological sites from approximately just south of the Relocated Station platform and approximately mid-way through the high-speed rail (HSR) platform, to the northern extent of the Project Footprint beyond Cottonwood Creek; this sensitivity is generally greatest in areas near freshwater. If these areas cannot be avoided by the Project, and Project activities in those areas are sufficient (i.e., deep enough) to potentially encounter buried archaeological resources, then additional actions would be necessary to mitigate potential impacts to as-yet unidentified buried resources, such as subsurface testing in advance of Project construction and/or construction-period monitoring.</p> <p>A professional archaeologist shall be consulted and testing and/or monitoring plans shall be prepared prior to construction activities (i.e., ground disturbance) identifying areas for archaeological investigation or monitoring.</p>
<p>MM-CUL-4 <i>Comply with state laws relating to Native American remains.</i></p>	<p>In the case of discovery of human remains Health and Safety Code Section 7050.5(b) specifies protocol including stop work and documentation measures. The code requires that in the event of discovery of human remains in any location other than a dedicated cemetery, there must be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county (Madera County) in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</p>

PALEONTOLOGICAL RESOURCES

MM-GEO-1. *Paleontological Monitoring During Construction.*

At least 120 days prior to construction, a paleontological resources monitor shall be designated for the project and shall be responsible for determining where and when paleontological resources monitoring should be conducted. The paleontological resources monitor shall be selected based on their qualifications, and the scope and nature of their monitoring shall be determined and directed based on the Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The paleontological resources monitor shall be responsible for developing and implementing the WEAP training. All management and supervisory personnel and construction workers involved with ground-disturbing activities shall be required to take this training prior to beginning work on the Project and shall be provided with the necessary resources for response in case paleontological resources are found during construction. The paleontological resources monitor shall 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.

MM-GEO-2: *Prepare and Implement a Paleontological Resources Monitoring and Mitigation Plan (PRMMP).*

Paleontological monitoring and mitigation measures are restricted to those construction-related activities that shall result in the disturbance of paleontologically sensitive sediments. The paleontological resources monitoring and mitigation plan (PRMMP) shall include a description of when and where construction monitoring shall be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the preparation, identification, analysis, and curation of fossil specimens and data recovered; preconstruction coordination procedures; and procedures for reporting the results of the monitoring and mitigation program. In general, the monitoring program shall reflect site-specific construction of the selected option. The PRMMP shall be consistent with Society of Vertebrate Paleontology (SVP) guidelines for the mitigation of construction-related impacts on paleontological resources. The PRMMP shall also be consistent with the SVP conditions for receivership of paleontological collections and any specific requirements of the designated repository for any fossils collected.

MM-GEO-3: *Halt to 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 shall cease. This requirement shall 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 paleontological resources monitor, the paleontological resources monitor shall immediately be notified.

HAZARDOUS MATERIALS

MM-HAZ-1: *Implement voluntary oversight agreement.*

Prior to construction, SJPA shall establish an agreement with an appropriate state regulatory agency to oversee the investigation and management (described in MM-HAZ-2 and MM-HAZ-3) of contaminated soil, ballast, and/or groundwater that would potentially be disturbed by construction of the proposed project. Regulatory agency oversight may be provided by, but is not limited to, the State Water Board under the Site Cleanup Program or Department of Toxic Substances Control (DTSC) under the Voluntary Cleanup Program.

MM-HAZ-2: *Conduct site investigations.*

Prior to construction, SJPA shall conduct a site investigation for Project improvements to evaluate the chemical quality of soil, ballast, and/or groundwater that could be disturbed during construction activities. A licensed professional shall prepare a work plan describing how representative samples of soil and ballast shall be collected and analyzed for potential contamination from the following potential sources of hazardous materials:

- Railroad corridors;
- Agricultural land;
- Existing roadways;
- Adjacent industrial properties.

Work plans shall be submitted to the appropriate oversight agency for review and approval. In accordance with the approved work plans, the site investigations shall be conducted and evaluated by a licensed professional. A technical report summarizing the field activities and analytical results shall be submitted to the appropriate oversight agency for review and approval.

MM-HAZ-3: *Implement construction risk management plan (CRMP).*

Prior to construction, SJPA shall prepare a construction risk management plan (CRMP) for the Project improvements that provides a framework for proper characterization and management of contaminated soil, ballast, and groundwater that could be disturbed during construction activities. The CRMP shall describe how to meet the following key objectives:

- Identify various scenarios under which soil and railroad ballast generated during construction can be safely reused;
- Identify maximum acceptable contaminant levels to protect workers, passengers, the public, and ecological receptors for each soil and ballast reuse scenario;
- Identify maximum acceptable contaminant levels to protect station workers and passengers potentially exposed to vapor intrusion, if any, from soil or groundwater contamination;
- Identify sampling and analysis, stockpiling, transportation, health and safety, and other procedures by which soil and ballast must be managed in order to meet safety, regulatory and other standards; and
- Define how the groundwater that would be encountered during construction (if any) shall be characterized, properly managed, and discharged or disposed to a permitted facility.

Based on the analytical results of the site investigations required under MM-HAZ-2, maximum acceptable contaminant levels shall be established for the following soil and ballast reuse scenarios:

- “Unrestricted Onsite Reuse,” in which soil and ballast excavated from the Project Footprint can be reused anywhere onsite;
- “Station Reuse,” in which soil and ballast excavated from the Project Footprint can be reused in station areas where there is anticipated to be relatively frequent potential exposure;
- “Right-of-Way Reuse,” in which soil and ballast excavated from the Project Footprint can be reused in areas where there is anticipated to be relative infrequent potential exposure along the right-of-way (ROW) of the tracks; and
- “Encapsulation”, in which soil and ballast excavated from the Project Footprint can be reused under barriers or other structures (and covered on all exposed sides by clean material).

To protect ecological receptors, the reuse scenarios shall incorporate additional limitations, as necessary, near creeks, surface waters, or other aquatic habitats based on the findings of an ecological risk assessment. Soil or ballast that contains chemical constituents at levels greater than the acceptable reuse scenarios shall be disposed of in accordance with resource conservation and recovery act (RCRA) and Cal. Code Regs. at a facility permitted to accept the waste. Imported fill materials shall be characterized to demonstrate they satisfy the criteria for “Unrestricted Onsite Reuse” established in the CRMP.

All extracted groundwater shall be considered potentially affected and require characterization to determine the appropriate treatment requirements (if necessary) for discharge or disposal. The extracted groundwater shall be collected and managed for disposal or treatment prior to discharge in compliance with local and state regulations and permit requirements. Based on the preliminary groundwater analytical results from the site investigations required under MM-HAZ-2, groundwater discharge and disposal options may include the following:

- Discharge directly to receiving waters;
- Discharge to the local sanitary sewer system;
- Discharge to the storm drain system; and
- Disposal/recycling at an appropriately permitted offsite facility.

Health and safety procedures described in the CRMP shall include requirements for an air quality monitoring program during excavation in areas with elevated contaminants of concern to ensure that fugitive dust emissions do not pose an unacceptable health risk to workers or the public. The air monitoring program shall identify action levels for total particulates that require respiratory protection, implementation of engineering controls, and ultimately work stoppage. This monitoring program shall be in addition to the fugitive dust controls required by the SJVAPCD.

A licensed professional shall prepare the CRMP and submit it to the appropriate oversight agency for review and approval prior to

construction. The approved CRMP shall be implemented during construction of the Project.

HYDROLOGY

MM-HYD-1. Project Design Drainage Features.

To reduce runoff volumes and pollutants entering receiving waters, a licensed Professional Engineer (PE) registered in the state of California shall design a stormwater quality system that meets the standards set forth in the County of Madera's Stormwater Resource Plan (SWRP). A full capture system shall be designed to contain all stormwater runoff from impervious surfaces and treats the stormwater to State discharge standards for industrial operations. Through the County of Madera's SWRP, the State Water Resources Control Board has indicated that the following BMPs should be considered for full capture systems:

- Bioretention
- Infiltration Trench
- Infiltration Basin
- Detention Basin
- Media Filter
- Storm water Capture and Use

The system shall account for flooding potential in FEMA designated zones and be designed to meet the flow capacity. Per the County of Madera Grading and Erosion Control Permit, if the complexity of the project requires additional information, the design shall provide drainage flow computations with volume of runoff to and from the site. The drainage system shall be reviewed and approved by the County of Madera prior to the approval of the Grading and Erosion Control Permit.

MM-HYD-2. Cottonwood Creek Channel Capacity. New HSR Rail Bridge Hydraulic Model and Construction BMP

The Project shall complete a hydraulic model to demonstrate that design features and construction practices would maintain existing channel capacity. The model shall be completed pursuant to Caltrans standard methods. Per the Madera County General Plan Policy 5.C.4, the construction and installation of the CIDH piers for the new HSR rail bridge at Cottonwood Creek shall implement BMPs and be approved by the County's Grading and Erosion Control permitting process. Some typical industry BMPs for CIDH installations at bridge waterways that the Project could include are listed below:

- Erosion Control Blankets
- Silt fences on the edge and throughout the construction zone.
- Mulches, straw, and sodding
- Hydraulic erosion control product installation
- Silt curtain installation
- Ditch check installation

TRANSPORTATION

MM-TR-1 *Transportation Management Plan for Project Construction.*

The San Joaquin Joint Powers Authority (SJPA) shall coordinate with public works and transportation departments of local jurisdictions to develop a transportation management plan that shall mitigate construction impacts to transit, roadway, bicycle, and pedestrian facilities,

while allowing for expeditious completion of construction. Measures that shall be implemented throughout the course of Project construction shall include, but shall not be limited to, the following:

- Limit number of simultaneous street closures and consequent detours of transit and automobile traffic within each immediate vicinity, with closure timeframe limited as much as feasible for each closure, unless alternative routes are available.
- Implement traffic control measures to minimize traffic conflicts for all roadway users (regardless of mode) where lane closures and restricted travel speeds shall be required for longer periods.
- Provide advance notice of all construction-related street closures, durations, and detours to local jurisdictions, emergency service providers, and motorists.
- Provide safety measures for motorists, transit vehicles, bicyclists, and pedestrians to ensure safe travel through construction zones.

*MM-TR-2 Freight Rail Disruption
Control Plan for Project
Construction.*

The San Joaquin Joint Powers Authority (SJJPA) shall make efforts to contain and minimize disruption to freight services during Project construction, while allowing for expeditious completion of construction. Measures that shall be implemented throughout the course of Project construction shall include, but shall not be limited to, the following:

- Limit number of simultaneous track closures within each immediate vicinity, with closure timeframe limited as much as feasible for each closure, unless bypass tracks or alternative routes are available.
- Provide safety measures for freight rail operations through construction zones.
- Require contractors to coordinate with rail dispatch to minimize disruption of rail service in the corridor.
- Where feasible, maintain acceptable service access for freight operations.
- Where track closures result in temporary suspension of freight rail service, work with BNSF and freight users to schedule alternative freight service timing to minimize disruption to freight customers. Where such closures shall result in substantial diversion to trucks, SJJPA or their construction contractor(s) shall coordinate with local jurisdictions and freight carriers to determine preferred truck routes to minimize the effect on the circulation system.
- Provide advance notice of construction-related track closures to all affected parties.
- Coordinate with BNSF in advance and during any potential disruption to freight operations and/or BNSF facilities, and maintain emergency access for BNSF for the duration of construction.

This page intentionally left blank.

1. INTRODUCTION

The San Joaquin Joint Powers Authority (SJJP) took on the responsibility of administering and managing the Amtrak San Joaquins Service (San Joaquins) on July 1, 2015. The SJJP is charged with promoting and improving the San Joaquins. The SJJP Governing Board includes representatives of ten member agencies, including the Madera County Transportation Commission. Prior to the Coronavirus Disease 2019 (COVID-19) health emergency, the San Joaquins service consists of seven daily round trips, with five running between Oakland and Bakersfield and two between Sacramento and Bakersfield (Figure 1-1.). Due to greatly reduced demand during the health emergency, four daily roundtrips are currently operating on a temporary basis. Restoration of service to Pre-COVID levels is anticipated once the health emergency has subsided. In the San Joaquin Valley between Stockton and Bakersfield, the San Joaquins operate on the BNSF's Stockton and Bakersfield Subdivisions.

Figure 1-1. San Joaquins Service Map



Source: San Joaquin Joint Powers Authority, 2018

The Madera Station Relocation Project (Project) is being proposed by the SJJPA in order to improve access to passenger rail service within Madera County and the San Joaquin Valley Region by relocating the existing Madera Amtrak San Joaquins Station (Relocated Station) to a new location near the intersection of Avenue 12 and the BNSF Stockton Subdivision in Madera County, as well as providing high-speed rail (HSR) facilities needed to enable HSR operation to the same Relocated Station for the Merced-Bakersfield Interim Operating Segment. This CEQA document would provide the clearance for the Relocated Station for the San Joaquins. It will also clear HSR station facilities at the Relocated Station.

The SJJPA is the lead agency under the California Environmental Quality Act (CEQA). The California High-Speed Rail Authority is responsible agency under CEQA.

1.1. Background

At the November 2016 SJJPA Board Meeting, SJJPA staff presented an assessment of the existing connectivity between the San Joaquins and local transit services. This assessment found that the existing Turlock/Denair San Joaquins Station and Madera San Joaquins Station (Madera Station) had connectivity challenges compared to other San Joaquins stations due to the lack of local or regional bus services.

In addition to the lack of connectivity with public transportation, other problems were found to exist with the Madera Station location at Madera Acres. In particular, the Madera Station has had consistently low San Joaquins ridership. In FY 2019, of the stations served by all seven (7) San Joaquins daily round trips (pre-COVID service levels), the Madera Station had the second lowest station ridership, which is measured in passenger “ons” (boardings) and “offs” (alightings). In FY 2019, Madera Station had 27,136 annual passenger ons/offs (or about 75 ons/offs per day). This is less than a tenth of Fresno Station’s 369,129 annual passenger ons/offs and significantly less than Hanford Station’s 182,143 on/offs and Merced Station’s 133,720 on/offs.

The existing Madera Station location is a contributing factor to its low connectivity and ridership. In addition to being located northeast of the City of Madera, the Madera Station lacks direct access to or from State Route (SR-) 99 and is surrounded by very low-density development, including a nearby golf course (see Figure 1-2). SJJPA gave the Madera Station a “low” rating for new transit-oriented development (TOD) potential in its 2019 SJJPA Business Plan. Although the Madera Station has only 19 parking spaces (lowest of all San Joaquins stations), SJJPA was unable to gain State support for investment in additional parking at this site because of its lack of ridership potential.

In late 2016, SJJPA staff began working with Madera County Transportation Commission (CTC), Madera County, the City of Madera, California State Transportation Agency (CalSTA), and the California High-Speed Rail Authority (CHSRA) to review the issues associated with the existing Madera Acres Station location and to discuss the possibility of pursuing moving the Madera Station to a better location. During this coordination, criteria discussed for identifying a new station site included:

- The station must be located along the BNSF alignment that the San Joaquins currently operate on, which lies to the east of the City of Madera.

- The desire to have a new station site with greater ridership potential, increased transit connectivity, higher potential TOD, and better access to SR 99 than the current station location.
- The new Station should also be positioned to serve both the existing and expected future growth of Madera County.
- The location also needs to accommodate future HSR facilities (described more below).

SJJPA and its partners focused on a site at Avenue 12 as the best service option for a relocated Madera Station. The Avenue 12 site, located southeast of the City of Madera within the Madera State Center Community College (SCCC) Specific Plan (July 1995) boundary (about one mile east of the Madera Community College Center) has the following attributes:

- Avenue 12 is one of the primary existing transit corridors in Madera County, with two bus lines serving the Avenue 12 corridor.
- The location has excellent connectivity to SR 99 with a new interchange at SR-99/ Avenue 12 recently completed and further improvements to Avenue 12 are currently in the process of being implemented.
- Although the potential station location is currently consists of vacant, disturbed, and agricultural land, the 1,867-acre Madera SCCC Specific Plan Area has designated this area for future development, which would provide opportunity for TOD.
- Future growth of Madera County is focused to the south and east of the City of Madera and is largely along the Avenue 12 corridor.
- The location of Avenue 12 also has higher ridership potential since it would be an attractive location for potential riders from Madera and portions of Northern Fresno. This is important, because the amount of service provided to any Madera Station in the future would depend largely on the amount of ridership the station can generate.

Through its formal 2017 Business Plan process, SJJPA identified the desire to relocate the Madera Station away from Madera Acres as a key goal. The intention to relocate the Madera Station was first presented at the January 27, 2017 SJJPA Board Meeting as part of the discussion of key new items proposed to be included in the Draft 2017 Business Plan. The Draft 2017 Business Plan was released to the public on March 1, 2017 and then approved by the SJJPA Board at the March 24, 2017 Board Meeting. At the May 26, 2017 SJJPA Board Meeting, Item 10 focused on the Avenue 12 location as the preferred site for the Relocated Madera Station. At that same meeting, SJJPA approved their Final 2017 Business Plan which included the goal of relocating the Madera Station to improve ridership and connectivity.

Due to new funding opportunities provided by the Transit and Intercity Rail Capital Program (TIRCP), SJJPA identified an opportunity to obtain State resources to relocate the Madera Station to better serve the City of Madera and Madera County, increase connectivity, and increase ridership and revenue for the San Joaquins and future HSR service. On April 26, 2018 CalSTA announced an award of \$500.5 million to the joint SJJPA/San Joaquin Regional Rail Commission (SJRRRC) application (called the “Valley Rail Program”). This was one of the largest awards given that year statewide and included over \$26

million for the Madera Station Relocation Project. Following the TIRCP grant award, SJJPA took steps to implement the Madera Station Relocation Project (Project), including pursuing formal environmental clearance of the Project in the form of an Initial Study/Mitigated Negative Declaration (IS/MND). The funding for this effort was secured in August 2019 from the California Transportation Commission (CTC).

In addition to SJJPA's efforts to improve the performance of the Madera Station, CHSRA identified Madera as a location for a proposed California High-Speed Rail (CAHSR) station for the first time in its 2016 Business Plan. To accommodate plans for an interim HSR Station in Madera, the CHSRA board approved an extension of Construction Package 1 of the California High-Speed Rail Project by approximately 2.72 miles northward in March of 2016 so initial construction would reach Madera. This action did not have any environmental clearance implications, as the extended length of Construction Package still fell entirely within the environmentally cleared project-level Merced-Fresno Project Section (CHSRA and Federal Railroad Administration 2012). However, the prior environmentally-cleared CAHSR Project section from Merced to Fresno, did not include a Madera HSR Station. This CEQA document would provide the clearance for an interim HSR station for a service of 18 trains per day round trip (36 total trains). These improvements are envisioned to be in place when HSR service commences as part of the planned "Merced-Bakersfield HSR Interim Operating Segment" or "Merced-Bakersfield HSR IOS" (as described in the Draft 2020 California High-Speed Rail Authority Business Plan). The proposed HSR improvements as part of this Project (as detailed in Section 2.3 below) would support overall interim operation of a high-speed rail service, which is expected to be operated by the SJJPA. Currently the SJJPA and CHSRA are working to develop a memorandum of understanding that would identify the SJJPA as the operator of the Merced-Bakersfield HSR IOS.

In addition, according to the Draft 2020 CHSRA Business Plan, following interim operations, CHSRA intends to implement "Valley to Valley" service which would extend HSR service to the Bay Area. Following Valley to Valley service, plans are to extend HSR service to Southern California. As part of these proposed expansion of HSR service, CHSRA may seek to expand or modify the station at Madera to allow for the potential for more frequent service than envisioned for interim operations. While the HSR improvements proposed under this Project would not accommodate service increased beyond interim operations, the improvements could be expanded and would not preclude any future expansion of the Relocated Station in Madera by CHSRA necessary to accommodate expanded service. Environmental clearance of any additional HSR facilities or HSR service at the Relocated Station beyond those included in the Project Description in this document would be conducted separately at the time that CHSRA decides to pursue such an expansion. The future expansion of facilities or HSR Service at the Relocated Station is taken into account in the cumulative analysis in this document.

During 2018 and early 2019, SJJPA continued to work on plans for a relocated Madera Station at Avenue 12. Design efforts were coordinated with CHSRA and CalSTA to ensure that the design could accommodate future HSR service and to minimize construction impacts. The Project is included Madera CTC Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), with the Project shown on the first phase in the list of fiscally constrained projects. The Project was also added into the Madera CTC 2019 Transportation Improvement Plan (FTIP) as part of Amendment #14 and adopted by the

Madera CTC in May of 2020. In July of 2020, Amendment #14 was approved by the Federal Highway Administration and the Federal Transit Administration.

1.2. Project Setting

The Project is located in Madera County, which has an estimate population of 161,208 in 2020. The City of Madera is the largest city in Madera County and is located western part of County (Figure 1-1). The City of Madera has a population of approximately 65,700 people, of which approximately 78 percent are Hispanic/Latino. The City of Madera is primarily accessed via SR-99.

The existing Madera Station (Existing Station) is in the vicinity of Madera Acres, a Census-designated place in Madera County (Figure 1-2). This location lacks direct access to or from SR-99 and is 3.45 miles from the nearest exit. It is surrounded by very low-density residential development, undeveloped parcels, as well as a golf and country club. The existing Madera Station has 19 parking spaces and is composed of a restroom building and a covered waiting area (Figure 1-3). No local or intercity bus service is provided to or from the station. In addition, of the stations served by the seven San Joaquins daily round trips, Madera Station has very low ridership.

Figure 1-2. Existing Madera San Joaquins Station at Madera Acres

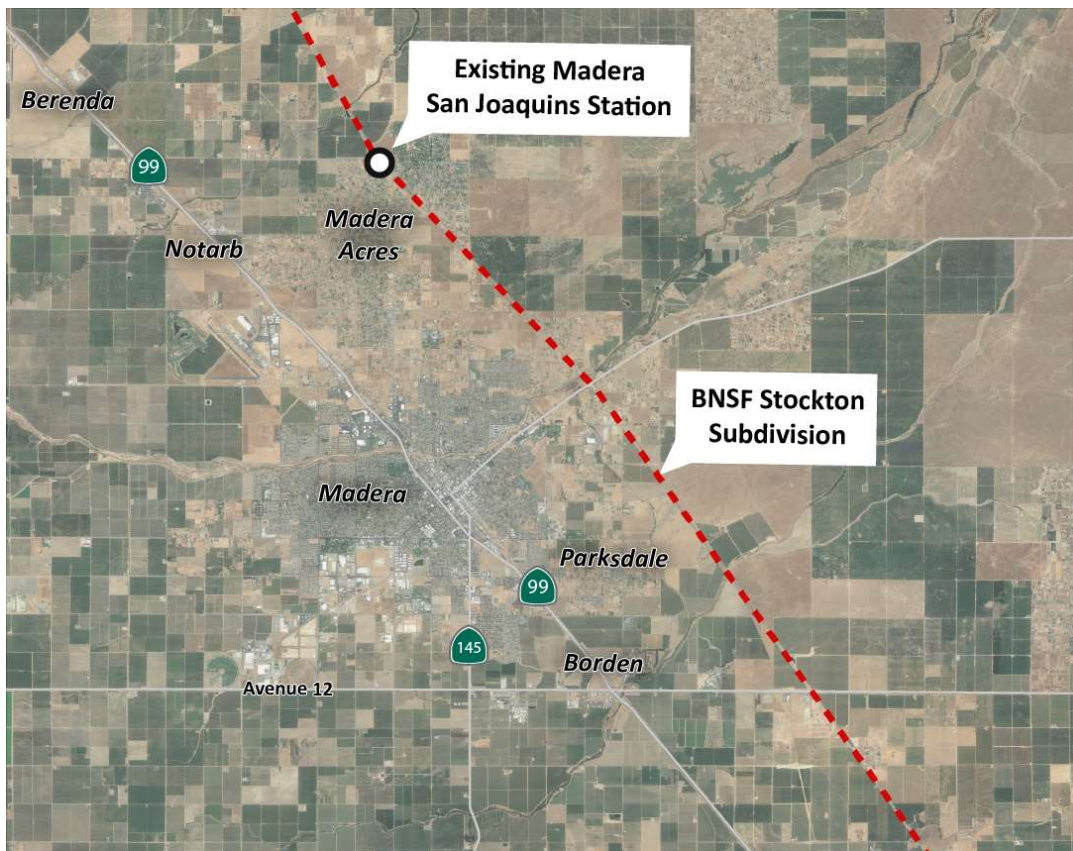


Figure 1-3. Existing Madera Station

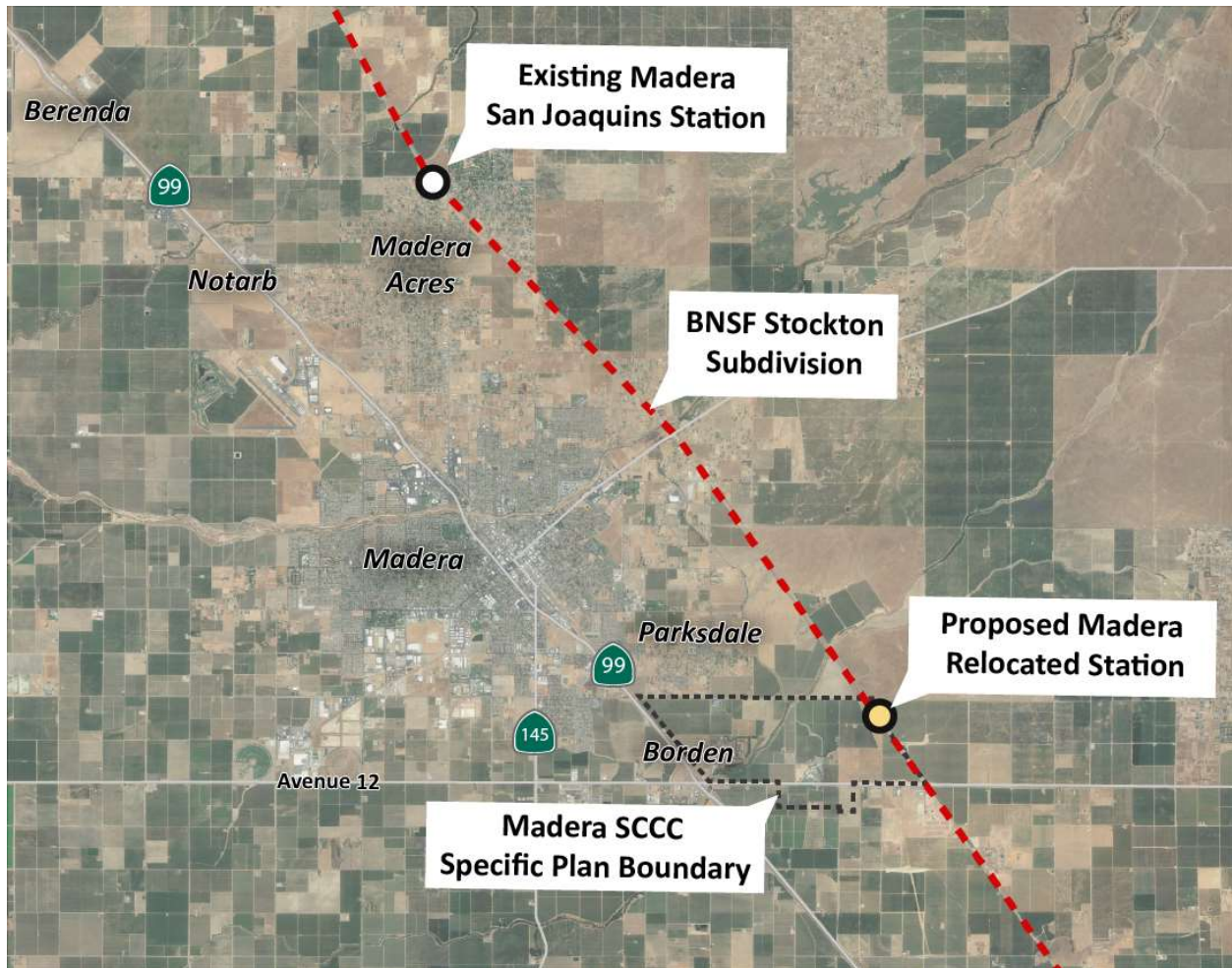


Source: Google Earth, 2019.

1.3. Project Location

The proposed location for the Project generally lies southeast of the City of Madera and is primarily within the boundaries of the Madera SCCC Specific Plan (July 1995) boundary (some trackwork extends beyond this boundary). The main Project Footprint where the station facilities would be located sits approximately one-mile northeast of the new Madera Community College Center (see Figure 1-4) and just under one mile north of Avenue 12. The station facilities are located within a wedge-shaped site defined by the existing BNSF Stockton Subdivision Corridor (BNSF Corridor) to the east and the California High-Speed Rail (CAHSR) Project corridor (currently under construction) to the west and is located on land owned by the CHSRA. The proposed access road connecting the station facilities to Avenue 12 would generally run along the CAHSR Project corridor.

Figure 1-4. Proposed Relocated Station at Avenue 12



2. PROJECT DESCRIPTION

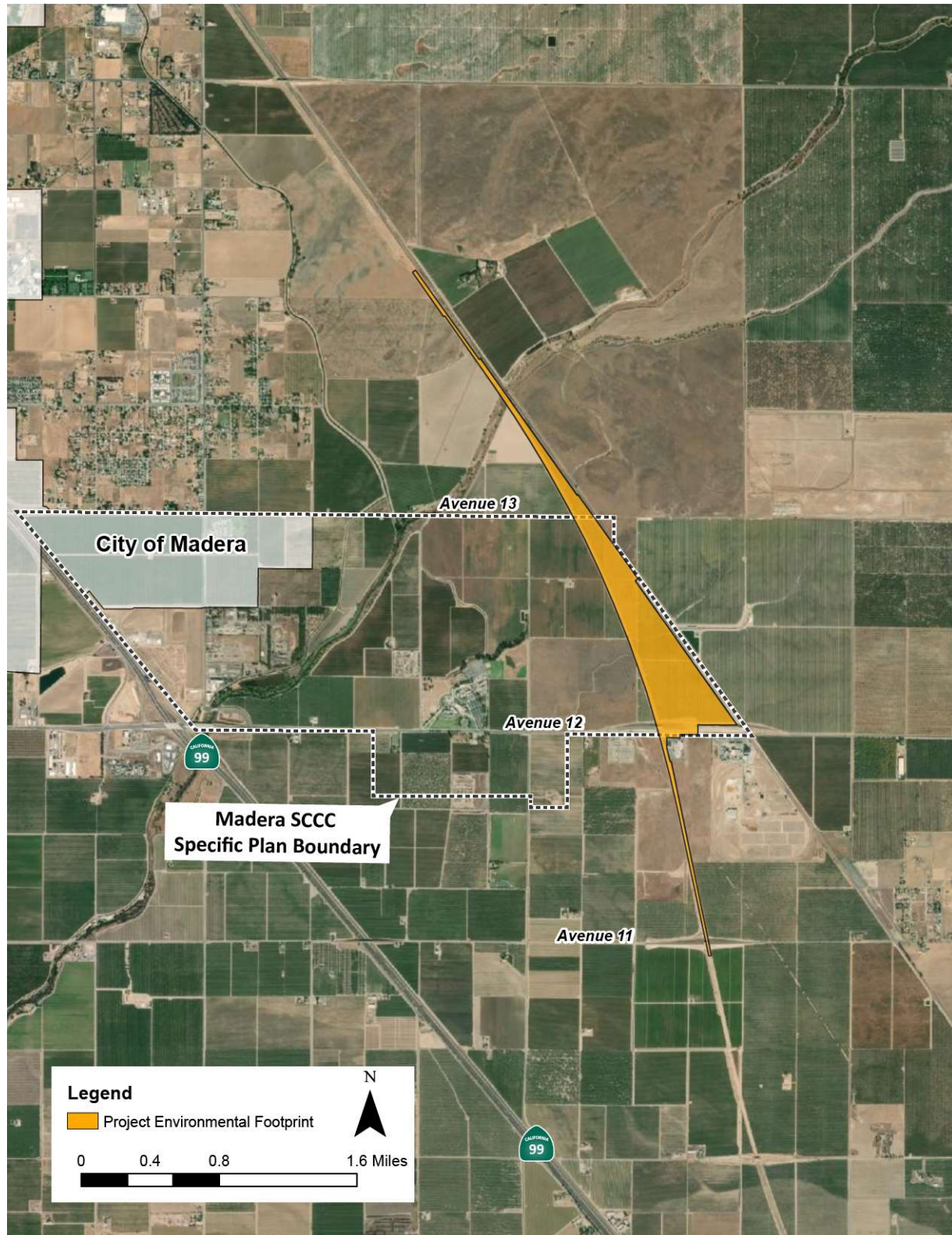
The Project consists of various project elements that can be separated into two phases, based on their purpose and timing of construction and implementation. The first phase, or the “Phase 1 – San Joaquins Relocated Station” (Phase 1), consists of elements related to the Relocated Madera San Joaquins Station (Relocated Station) from Madera Acres (Figure 1-3) to the location described in the vicinity of Avenue 12 and described above (Figure 1-4). The existing Madera San Joaquins Station would no longer be used for San Joaquins operations following commencement of San Joaquins service at the Relocated Station. The second phase of the Project, or the “Phase 2 – HSR Interim Operating Segment Station” (Phase 2), consists of high-speed rail improvements at the Relocated Station to allow for future HSR service along California’s future Merced to Bakersfield High-Speed Rail Interim Operating Segment, to access the Relocated Station (Figures 2-4, and 2-5). This HSR services is anticipated to be operated by the SJPA.

For both Phase 1 and 2, the design, construction, and operation of the Project’s rail components would comply with applicable standards from the Federal Railroad Administration (FRA) and/or California Public Utilities Commission (CPUC). Similarly, design, construction, and operation of site access improvements, including new roadways or modifications to existing roadways, would adhere to applicable standards such as the California Manual on Uniform Traffic Control Devices (MUTCD) and local design guidelines and specifications. Design approval for specific project components would be sought from the appropriate agencies as part of detailed design and subsequent stages of the Project.

2.1. Project Environmental Footprint

The Project Environmental Footprint (Project Footprint) is shown in Figure 2-1. In the north-south direction, the Project Footprint stretches approximately 3,600 feet north of Cottonwood Creek and approximately 150 feet south of Avenue 11 to accommodate trackwork associated with the Project. The Project Footprint also widens between Avenue 13 and Avenue 11 to accommodate the Project’s station facilities and access road.

Figure 2-1. Proposed Project Environmental Footprint



2.2. Phase 1 – San Joaquins Relocated Station

2.2.1. Platform

As described below, the Relocated Station for Phase 1 would consist of a single side-loaded platform approximately 600 feet in length. The platform may include a canopy or canopies to offer protection from the elements for waiting passengers. There would also be fare machines, information panels, security video cameras, and lighting in the platform area. In general, the platform area would look similar to the existing Madera San Joaquins Station (Figure 1-3). Figures 2-2 and 2-3 show the proposed general layout of the Relocated Station, including the platform that the San Joaquins would utilize.

2.2.2. Trackwork

In order to access the Relocated Station platform, a new station siding track extending from the existing BNSF mainline single-track would be constructed. The entire length of the new station siding track, from the turnout locations at the north and south would be approximately 2,330 feet. The turnouts would be design for 50 mph. The new track would have a ballast base similar to the existing ballasted tracks on the BNSF Corridor.

2.2.3. Bus Depot

A bus depot would be constructed southeast of the proposed platform. The bus depot would be accessible via the access road. As part of the Phase 1, the entire footprint of the bus depot would be established, with space reserved for up to eight bus bays. However, only four of the eight bus bays would be constructed.

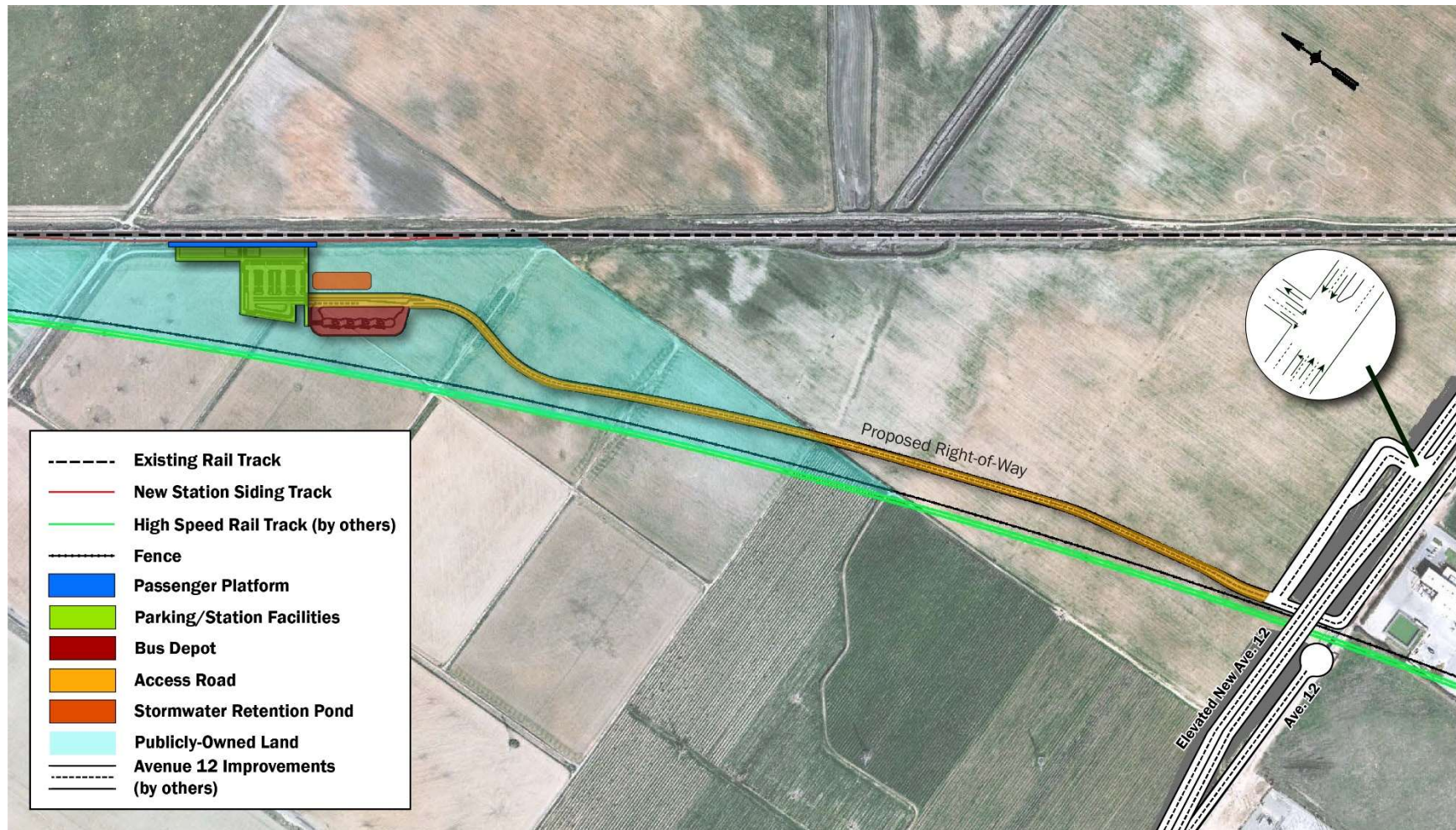
2.2.4. Parking

A surface parking lot would be constructed adjacent to and west of the Relocated Station platform, with 98 parking spaces that would be equipped with lighting and security video cameras. No parking structures are proposed. The parking lot would be accessed through via an access road connecting from Avenue 12. Parking would include disability parking. Additionally, a pick-up/drop off facility with a turnaround loop would be located within the westernmost area of the parking lot.

2.2.5. Access Road

A new two-lane access road would be constructed to provide access to the Relocated Station facilities from Avenue 12. The access road would primarily run adjacent to the CAHSR Project right-of-way and would connect to the new elevated section of Avenue 12 via a ramp structure on the north side of new grade-separated section of Avenue 12. Both the new elevated section of Avenue 12 and the ramp are being constructed as part of the CAHSR Project (Figure 2-2). No sidewalks or bike lanes would be included in the access road as part of Phase 1.

Figure 2-2 Proposed Design for Phase 1 – San Joaquin Relocated Station (Overview)



2.2.6. Roadway Network

The access road would also connect to a section of road located in an underpass through the grade-separated Avenue 12 being constructed as part of the CAHSR Project. This underpass would provide a connection to the at-grade Avenue 12 frontage road on the south side of the new elevated section of Avenue 12. The Avenue 12 frontage road is not a Project element and is section of the same roadway that is the current Avenue 12 and would provide access to properties located immediately south of Avenue 12 and in between the CAHSR Project corridor to the west and the existing BNSF corridor to the east.

2.2.7. Buildings and Structures

A small building or buildings would be constructed to house restrooms and cleaning supplies/equipment for station maintenance, which would be located immediately west the station platform. The building(s) would be one-story (approximately 12 feet) tall. In addition, lighting posts with light-emitting diode (LED) light fixtures would be installed. Various types of signage would be also installed.

A stormwater drainage system would be constructed to provide drainage for stormwater from the access road, parking lot, and other station facilities. The drainage system would lead to a stormwater retention pond located immediately south of Phase 1 parking structure. The stormwater retention pond would be designed to accommodate additional stormwater anticipated from the expanded station facilities and access road associated with Phase 2.

An onsite Wastewater Treatment System (OWTS) would be constructed to treat wastewater from the planned station restroom. It is assumed that the Project would not be hooked up to the sewer system.

2.2.8. Trains

Trainsets utilized by the San Joaquins and serving the new Relocated Station during Phase 1 would be FRA-complaint diesel-based rolling stock, the same or similar to trainset currently operated for the San Joaquins today. Most of the trainsets utilized for the San Joaquins Service will be hauled by Tier 4 locomotives at the time of service commencement (estimated for 2024).

2.3. Phase 2 – HSR Interim Operating Segment Station

2.3.1. Platform

As part of Phase 2, a new single side-loaded platform would be constructed parallel to the CAHSR Project trackwork now under construction to the west and immediately adjacent to a new station siding track (see below for more details). The platform would be approximately 1,000 feet in length and may include canopies to protect passengers from the elements. The height of the platform would be designed to accommodate trainsets to be selected for the HSR system. The platform would also be located approximately 365 feet west of the northerly edge of the platform built as part of Phase 1 (Figures 2-4, 2-5, and 2-6).

Figure 2-3. Proposed Design for the Phase 1 – San Joaquins Relocated Station (Detailed View)

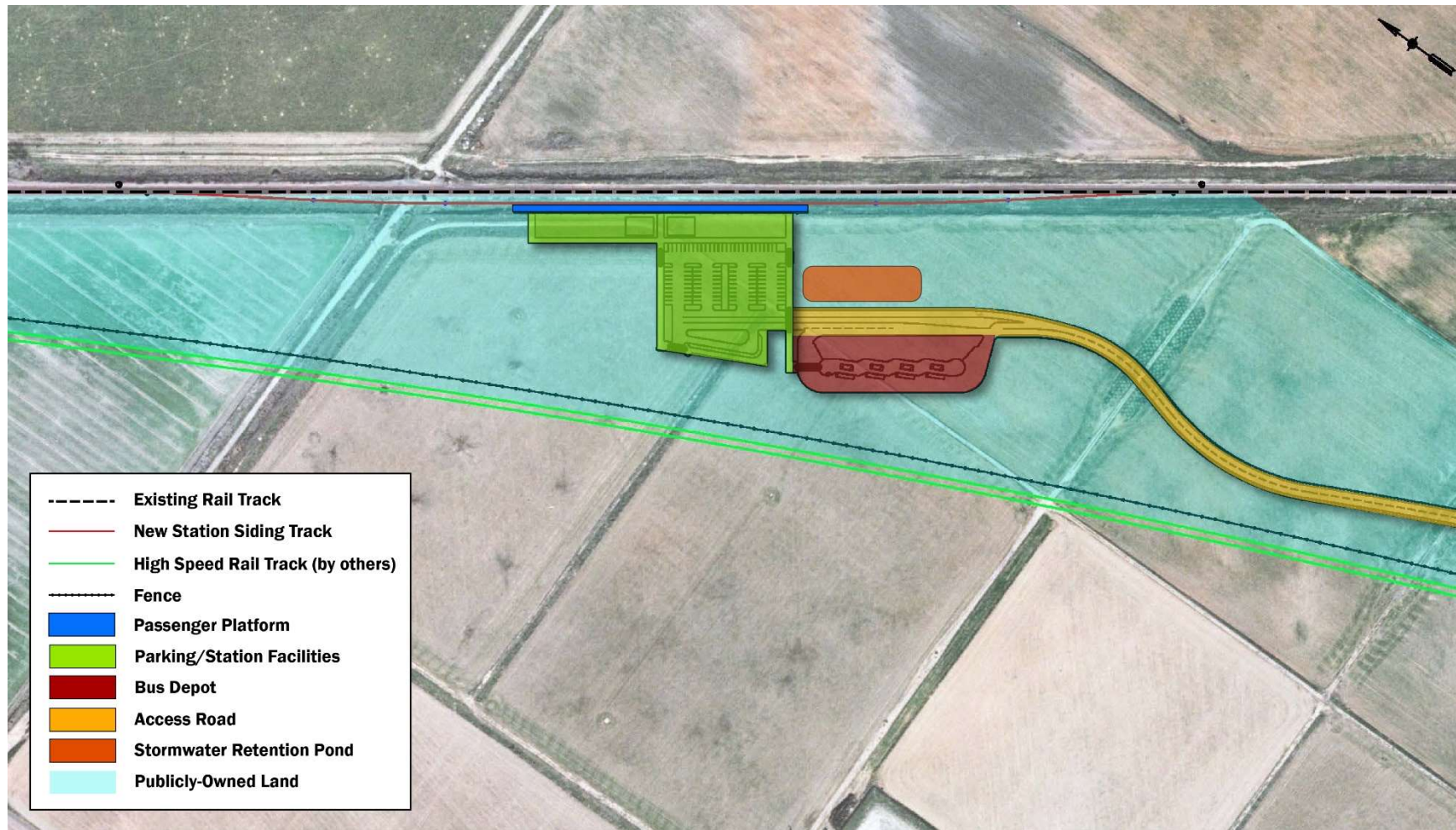


Figure 2-4. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Overview)

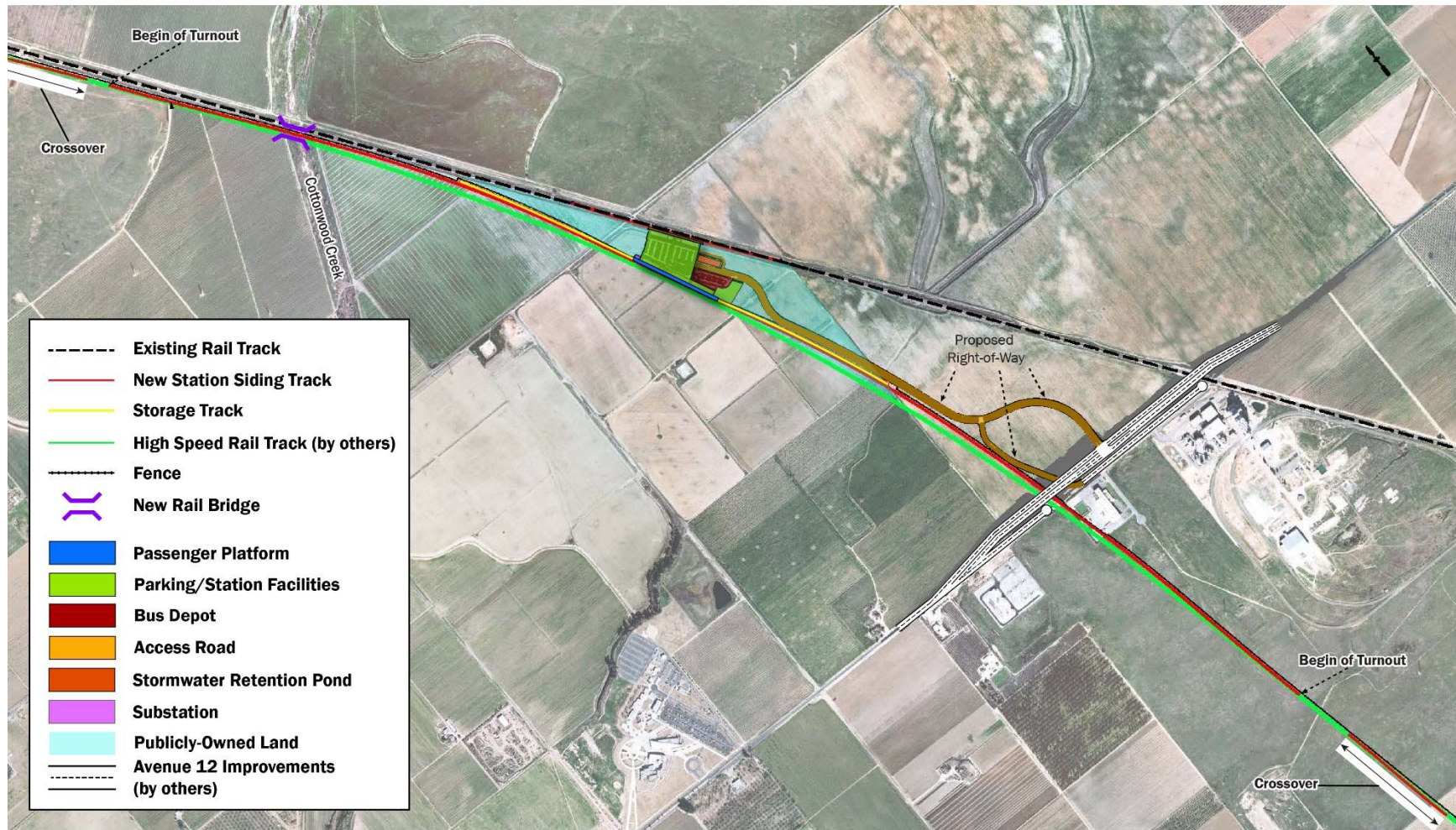


Figure 2-5. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Detailed View)

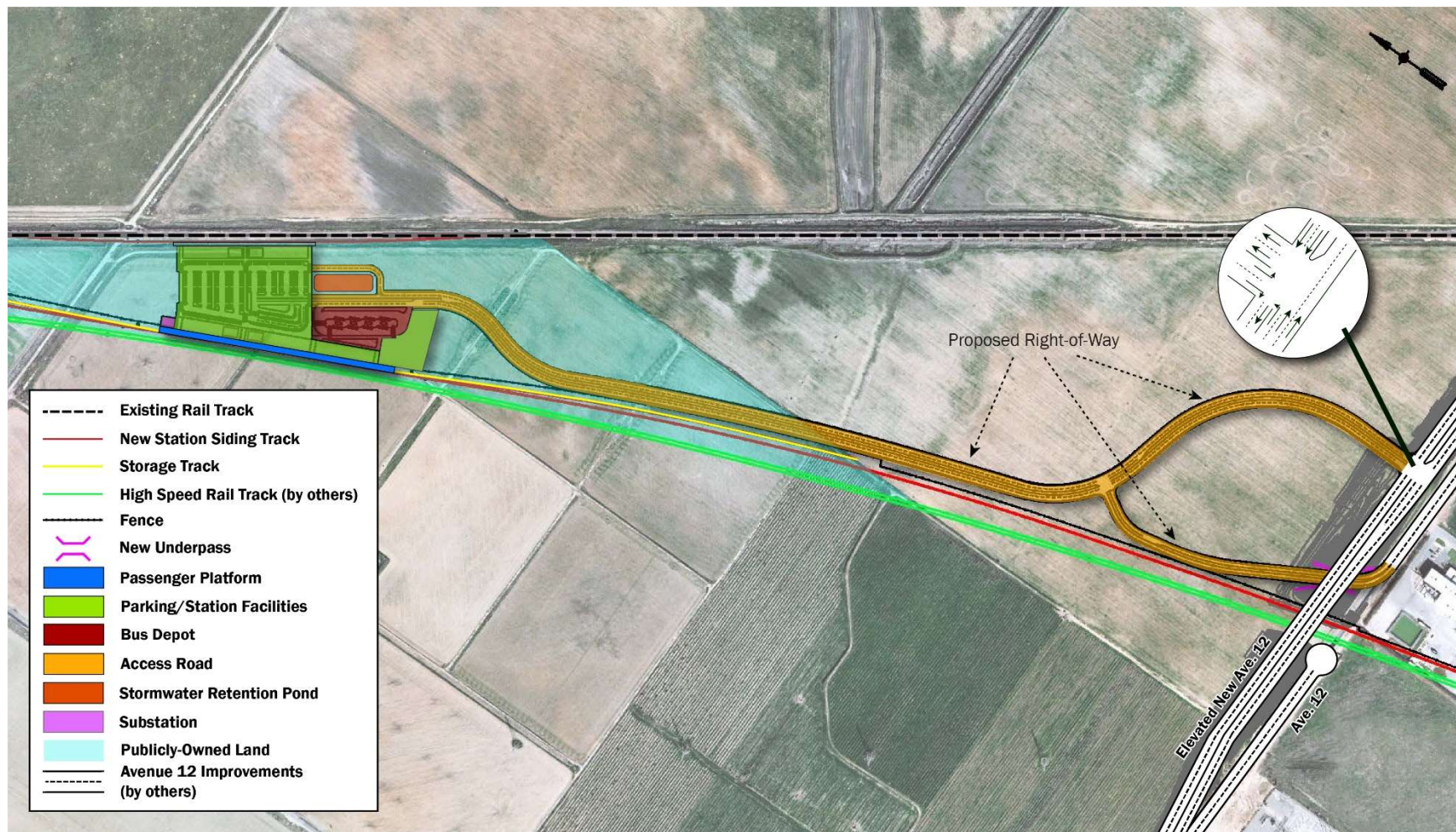
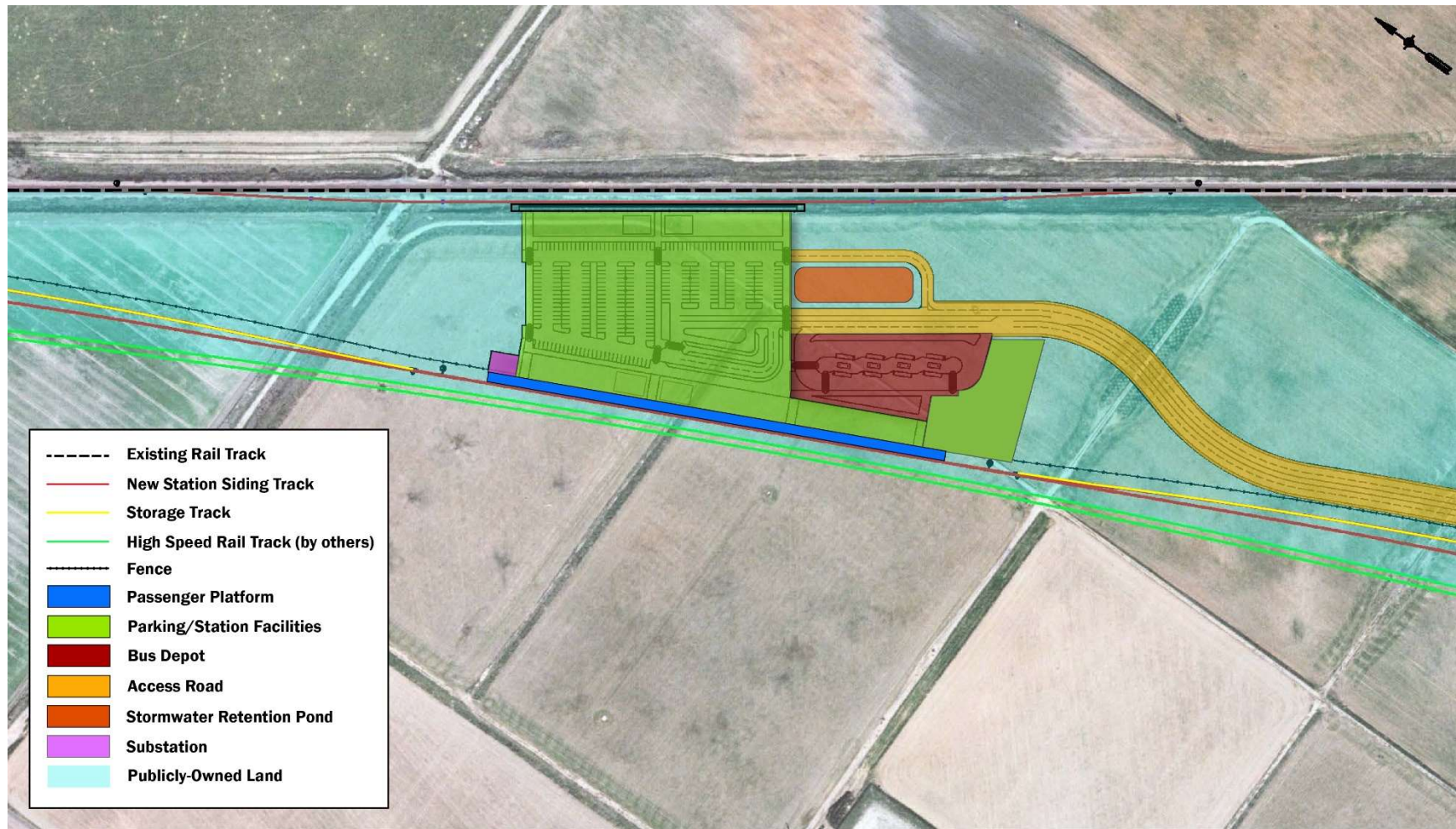


Figure 2-6. Proposed Design for the Project Phase 2 – HSR Interim Operating Segment Station (Station Close-In View)



2.3.2. Trackwork and Overhead Contact System

In order to provide access to the HSR platform, a new station siding track would be constructed to the east of the two-track mainline being constructed for the CAHSR Project. The entire length of the new station siding track, from the turnout locations at the north and south would be approximately 14,600 feet in length. The turnouts would be design for 110 mph. In addition, new crossover tracks would be constructed within the CAHSR Project corridor to the north and south of the new station siding track to allow southbound HSR trains to access the HSR platform at the Relocated Station. When including the north and south crossover tracks within the CAHSR Project right-of-way, this would extend the length of the trackwork associated with the Project to a total length of 17,300 feet. The northern crossover track would extend approximately 3,600 feet north of Cottonwood Creek. The southern crossover track would extend approximately 150 feet south of Avenue 11.

The station siding track would include a new rail bridge over Cottonwood Creek. The proposed bridge would be a single track, 5 span continuous cast-in-place, reinforced concrete slab type structure, matching the span arrangement and hydraulic conveyance capacity of the existing double-track bridge constructed as part of the CAHSR Project. The bridge would be 24 feet in width, 250 feet in length, and would be supported on 2 – 3' diameter cast-in-drilled-hole (CIDH) piles at each abutment and bent; each pile would be approximately 40 to 50 feet deep. The CIDH supported abutments would extend approximately 8 to 10 feet below the existing ground surface.

Two storage tracks for HSR trains would be constructed as part of Phase 2 of the Project. One storage track would extend from the station siding track to the north approximately 1,900 feet. A second storage track would extend south from station siding track approximately 1,900 feet (Figures 2-4, 2-5, and 2-6).

In association with the Phase 2 trackwork, an overhead contact system (OCS) would be constructed along entire length of the station siding track and storage tracks to provide electrical power to electrified trainsets. The OCS would consist of poles at intervals matching the OCS poles being constructed as part of the CAHSR Project. These OCS poles are expected to be approximately 30 feet tall and would have foundations approximately 6 to 10 feet deep.

To provide power to the OCS system, a small Transmission Power Substation (TPSS) may be needed, though there is a possibility electrical power could be drawn from the OCS planned to be constructed in association with the adjacent mainline CHSRA Project tracks. If a TPSS is required, it would be located in an area in the vicinity of the north end of the HSR platform.

2.3.3. Bus Depot

A bus depot would be constructed just south of the access road as it approaches the Station parking lot. As part of Phase 1, the west side of the bus depot footprint would be built, including four bus bays. In Phase 2, four additional bus bays would be constructed such that a total of eight bus bays are operational.

2.3.4. Parking

The parking lot constructed as part of Phase 1 would be expanded by 179 additional spaces, for a total of 277 parking spaces in Phase 2. The additional parking would expand the size of surface lot; no parking structures are proposed. The parking area would be accessed through one road connecting from Avenue 12. Parking would include disability parking. The pick-up/drop-off facility already provided in Phase 1 would be expanded with an additional 530 feet of curbside access divided between two additional lanes.

2.3.5. Access Road

In order to accommodate the trackwork required to reach the HSR platform, a portion of the access road constructed during Phase 1 would be reconfigured and relocated. The reconfigured portion of the access road would shift to the east and rise to meet the elevated portion of the Avenue 12 grade separation where a new signalized intersection would be created (Figure 2-5). The reconfigured portion of the access road would be a four-lane road. Furthermore, the remaining portion of the Phase 1 access road that extends north to the station, would be widened from the two-lanes to a four-lane road. A sidewalk and bike lanes would be also added to the widened access road during Phase 2.

In addition, a 2-lane auxiliary segment of access road would be built around the southern and eastern sides of the proposed stormwater retaining pond to provide an additional access point into the expanded parking lot.

2.3.6. Road Network

The new station siding track associated with Phase 2 of the Project would be constructed in the same space occupied by the automobile underpass currently under construction as part of the CAHSR Project. This would result in removal of the roadway in that space and severing the original automobile access to the Avenue 12 frontage road on the south of elevated Avenue 12. To address this, a new underpass would be constructed for automobiles slightly to the east (Figure 2-5). This new underpass would connect to the at-grade frontage road along the south side of Avenue 12. Construction of the new underpass in Phase 2 of the Project would require penetrating the retained fill of the Avenue 12 grade separation structure built as part of the CAHSR Project and constructing necessary support structures for the elevated Avenue 12.

2.3.7. Buildings and Structures

A building or buildings would be constructed in close proximity to the east of the HSR platform to provide space for station staffing support facilities, restrooms and cleaning supplies/equipment for station maintenance. The building(s) would be one-story (approximately 12 feet) tall. In addition, lighting posts and signage would be installed. Additional stormwater drainage facilities would be needed for the expanded station facilities and expanded roadway, but no additional work would be needed on the stormwater drainage basin constructed in Phase 1. Additional wastewater facilities would be need for additional bathroom planned near the CAHSR platform.

2.3.8. Trains

CAHSR trainsets would likely consist of lightweight electric multiple units (EMU) trainsets. However, no final decision has been made on rolling stock to-date. This Project has no influence on the selection of CAHSR rolling stock.

2.4. Construction Period

The construction of the proposed Project would be done in phases. Phase 1 would include all Project elements required to allow for the operations of the San Joaquins service at the Relocated Station. Construction of Phase 1 of the Project is anticipated to last 12 months. Construction of Phase 1 is anticipated to commence in 2023 and be completed in 2024. The construction schedule for Phase 1 is being coordinated with the construction of the CAHSR Project. CHSRA has indicated they will need to utilize the site of the Relocated Station (currently owned by the CHSRA) as a staging area for the CAHSR project. Given this, the schedule for Phase 1 would be delayed from the original anticipated commencement date by approximately 1.5 years.

Phase 2 would include all Project elements required to allow for the operations of HSR trains at the Relocated Station. Construction of Phase 2 of the Project is anticipated to last approximately 2 years. Assuming funding is secured, construction for Phase 2 is anticipated to commence in 2026 and be completed in 2028.

Access to construction sites would occur via a temporary access road within the Project Footprint connecting with the proposed access road segments during Phase 1 and Phase 2. There could be limited, temporary road closures, and road construction that could potentially cause increased traffic congestion in areas where emergency vehicles operate. These improvements could potentially disrupt traffic during construction activities and interfere with emergency response times.

Contractors would use staging areas within the Project Footprint and standard industry equipment such as excavators, pavers, and dump and concrete trucks to support the construction of the Project. For the construction of the new bridge over Cottonwood Creek, pile-driving equipment would be utilized.

Best Management Practices (BMPs) that would be implemented as part of the Project include:

- Use of fabric-covered screening fences to minimize public views of the construction activities, equipment, and stockpiles.
- Positioning of light direction and shielding, which would minimize lighting spillover.
- Measures found in Caltrans' Construction Site Field Manual and Troubleshooting Guide (Caltrans 2003a), and the Construction Site BMP Manual (Caltrans 2003b) to reduce impacts to soil erosion
- Standard construction practices such as Best Available Technology Economically Feasible (BATs), Best Conventional Pollutant Control Technology (BCTs) would help reduce potential impacts related to storm water drainage systems

2.5. Preliminary Project Capital Cost Estimates

Preliminary cost estimates of all Project elements – including trackwork, platforms, station facilities, power systems, drainage, bus depot, access road, and parking lots – were conducted for both Phases 1 and 2. Table 2-1 below provides the estimated cost for each phase, as well as a total for both phases. For more information on the preliminary capital cost estimates, refer to Appendix F (Preliminary Project Capital Cost Estimates).

Table 2-1. Preliminary Project Capital Cost Estimates

Phase 1	Phase 2	Total (Both Phases)
\$24.9 Million	\$105.0 Million	\$129.9 Million

Source: AECOM 2020.

For more information on the preliminary capital cost estimates, refer to Appendix F (Preliminary Project Capital Cost Estimates).

2.6. Operations

Phase 1 of the Project presumes up to eight (8) San Joaquins roundtrip a day when the Relocated Station opens for service (anticipated in 2024). Phase 2 presumes up to eighteen (18) HSR service roundtrips a day (anticipated to commence in 2029). Once HSR service commences to the Relocated Station during Phase 2, San Joaquins trains would no longer serve the Relocated Station and would instead terminate at a new downtown multi-modal hub station in Merced, where they would connect to HSR trains, leaving only 18 HSR daily roundtrips serving Relocated Station.

Once the San Joaquins terminate in Merced, it is possible that there could be local/regional passenger rail service in the future that utilizes the slots that the San Joaquins would no longer utilize. However, this would have to be separate project and is not in the scope of this Project.

Ridership analysis was conducted for Phase 1 and Phase 2 for the years 2025 and 2029 respectively, which reflect estimated ridership for the operational plans at the Relocated Station described above, as well as for a No-Build condition, where the Existing Station is not relocated. Ridership was assessed by estimating passenger “ons and offs” (or “boardings and alightings”). In this approach, each person is counted twice (once for getting on at a station and once for getting off at a station). Therefore, the number of actual passengers would be 50% of the numbers shown above. Estimating ons/offs is useful to assess usage of the station facilities, etc.

The estimated ridership is summarized in Table 2.6-1 below.

Table 2.6-1. Estimated Project Ridership

No Build¹ 2025 (San Joaquins)	Phase 1² 2025 (San Joaquins)	Project Phase 2³ 2029 (High-Speed Rail Service)
40,200¹ (passenger ons/off)	103,100² (passenger ons/off)	210,600³ (passenger ons/off)
Notes: ¹ Assumes eight (8) San Joaquins roundtrips serving the Existing Station. ² Assumes eight (8) San Joaquins roundtrips serving the Relocated Station. ³ Assumes eighteen (18) high-speed rail roundtrips serving the Relocated Station.		

For more information on the ridership estimates, refer to Appendix G (Ridership, Vehicle Miles Traveled, and Parking Estimates).

2.7. Required Permits

The Project is subject to CEQA, and the SJJPA is the lead agency for the Project. As such, SJJPA must oversee environmental review of the Project under CEQA, prior to approving the Project. SJJPA recognizes the need for a close relationship with Madera County (County) and the nearby City of Madera (City) and wishes to pursue the planning and environmental review of the Project in such a way that SJJPA, the County and the City can agree that the Project would be of overall community benefit and that all reasonable efforts to avoid significant environmental effects have been made. Towards this end, SJJPA would comply with regulations regarding site planning and construction, including such ordinances as the County noise regulations and provisions of the County's stormwater sewer system discharge permit.

The Project requires the following approvals and permits from agencies including:

- County of Madera Public Works Department of Public Work's Grading and Erosion Control Permit.
- County of Madera Public Works Department of Public Work's Encroachment Permit Application
- Central Valley Regional Water Quality Control Board's NPDES Construction General Permit Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ).
- Central Valley Regional Water Quality Control Board, Clean Water Act (CWA) Section 401 Permit/Waste Discharge Requirements.
- A consultation with U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) would be conducted if special status plant species cannot be protected and an Incidental Take Permit (ITP) would be attained.
- CDFW Section 1600 Streambed Alteration Agreement.
- Central Valley Flood Protection Board (CVFPB) Encroachment Permit.
- Army Corps of Engineering Clean Water Act (CWA) Section 404 Permit.
- The California High-Speed Rail Authority (CHSRA) would need to approve connection into their track infrastructure.

2.8. Public Outreach

The SJJPA has engaged local stakeholders and agencies, as well as the general public in the Project's development since before the environmental process began. SJJPA has conducted ongoing coordination with the Madera County, Madera CTC, and the City of Madera since late 2016. The Madera CTC and Madera County sent letters of support for the Madera Station Relocation's TIRCP application. In 2018, SJJPA prepared and made available to the public a Madera Relocation Station Planning document that discussed the history and best sites for relocating the existing Madera Station. This document was updated in Spring of 2020 and made public.

Early on in the environmental process, SJJPA decided to include a robust public outreach component, even though CEQA does not require a substantial outreach effort for an IS/MND (relative to an Environmental Impact Report (EIR)). An extensive stakeholder and public outreach process was undertaken to educate the public about the Project. Numerous materials were developed that include various information about the Project, including a Project factsheet. Additionally, a dedicated Project webpage was created (housed within the SJJPA website) that not only provided information about the Project but contained a tool to allow members of the public to sign-up to the Project stakeholder list.

In addition to providing general information about the Project, in-person public open houses were conceived at the onset of the Project's environmental process to further inform the public. However, due to COVID-19 and State and local restrictions on gatherings, and for the safety of the public, it was decided that webinars would be held instead of physical public open houses. Three webinars (two in English and one in Spanish) were held on May 14, 2020.

Several methods were utilized to promote the public webinars. E-mail notifications (e-blasts) were conducted to the extensive list of stakeholders assembled for the Project. Additionally, flyers, social media posts, and newspaper advertisements (both print and digital) were disseminated to inform the public about public webinars. Additionally, agencies and key stakeholders within Madera County were leveraged to further the reach of e-blasts, flyers and social media posts.

The format of all three webinars consisted of a 20-minute PowerPoint presentation on the Project history, the Project description, an overview of the environmental process, and a review of the proposed schedule for the Project. The presentation portion of the webinars were followed by a question and answer session. Approximately 20 people joined for all three meetings.

The email notifications (e-blasts), information sheets (English and Spanish), PowerPoint presentations (English and Spanish), and Project website screenshot are presented in Appendix H (Public Outreach). A second outreach effort will be made once the Draft IS/MND is published.

3. INITIAL STUDY

This section follows the Environmental Checklist format as provided by Appendix G of the 2020 CEQA Thresholds (CA Office of Planning and Research 2020). The purpose of this section is to present the evaluation of the proposed Project against the questions in all environmental categories listed below. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. Brief but adequate explanation is required for all answers and these answers must adequately be supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis). Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.

3.1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Create a new source of glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

3.1.1. Would the Project have a substantial adverse effect on a scenic vista?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project site is characterized by flat terrain in the San Joaquin Valley approximately 50 miles from the foothills of two mountain ranges: the Diablo Range to the west and the Sierra Nevada to the east. Existing vistas are those of the mountain with broad plains in between. There are existing low- and mid-rise buildings for manufacturing, roadways, and overhead utility lines in the vicinity of the Project, including a Pacific Gas and Electric (PG&E) transmission line with towers that are over 100 feet in height that lead to a power substation on Avenue 12. However, the Project area is mainly characterized by agricultural land uses and is sparsely developed and populated. There are no sensitive viewers in the Project Footprint, or in the vicinity of the Project Footprint.

The Madera County General Plan establishes two policy items related to Visual and Scenic Resources that the Project would abide to:

- **Policy 1.H.1-** Avoid locating structures along ridgelines, on steep slopes, or in other highly visible locations, except under certain conditions.
- **Policy 1.H.2-** Requires new developments to minimize land alterations that involves grading.

Phase 1 – San Joaquin Relocated Station

Construction Impacts

During construction, contractors would use staging areas and standard industry equipment such as excavators, pavers, and dump and concrete trucks to support the construction of the Project. None of the equipment would have any height or scale that would block any vistas and no sensitive viewers exist in the Project Footprint, or in the vicinity of the Project Footprint. Therefore, construction impacts related to having a substantial effect on a scenic vista would be less than significant.

Operational Impacts

The proposed support buildings for the Relocated Station would be one-story (approximately 12 feet) tall and would not block any views of the mountain ranges to the west or east. The poles for security lighting in the platform and in the parking lot would be taller than the one-story support buildings but would be spaced throughout the Project such that no vistas would be blocked. Therefore, operational impacts related to having a substantial effect on a scenic vista would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction impacts for Phase 2 would be similar to those discussed above for Phase 1. One difference would be the use of pile-driving equipment for the construction of the new bridge over Cottonwood Creek, which is usually a tall equipment. However, the height of the equipment would not be enough to block long-distance vistas of the mountain ranges. Therefore, construction impacts related to having a substantial effect on a scenic vista would be less than significant.

Operational Impacts

Operational impacts for the Phase 2 would be similar to those discussed above for Phase 1. In addition, the CAHSR Improvements would include overhead contact system (OCS) poles that would be approximately 30 feet high and at a spacing of approximately 200 to 250 feet. The OCS poles are highly visible in close viewing distances but become less visible in the distance and would not obstruct the long-range mountain views. Therefore, operational impacts related to having a substantial effect on a scenic vista would be a less than significant.

3.1.2 Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Determination: NO IMPACT

The Project site is characterized by flat terrain, portions of which are currently used for agriculture, more specifically orchards. While some areas within the Project Footprint contains trees, these are common crop trees. There are no significant rocks or outcroppings on the Project Footprint or in the vicinity. The closest state scenic highway that is eligible for Official Designation is the segment of SR-41 that starts north of the SR-49¹ junction approximately 30 to 35 miles from the Project and is not visible from the Project Footprint. The closest historic building² is the Historic Madera County Courthouse which is approximately five miles from the Project and not visible from the Project.

Project Interim Phase – Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

There are no scenic resources close to the Project Footprint. Thus, construction activities associated with both Phases 1 and 2 would not damage any scenic resources. Therefore, no construction impacts would occur related to having a substantial effect that would damage

¹ Caltrans (2019), List of eligible and officially designated State Scenic Highways, <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>

² National Register of Historic Places: <https://npgallery.nps.gov/NRHP/AssetDetail?assetID=ac52da44-fdce-4fe3-af84-d77c1f1d1e02>

scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Operational Impacts

There are no scenic resources close to the alignments of the proposed rail service for either Phase 1 or Phase 2. Therefore, no operational impacts would occur related to having a substantial effect that would damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

3.1.3 In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project's visual character is composed primarily of agricultural landscape with rows of planted vegetation commonly found in farming practices. The few buildings that exist support manufacturing, the Madera County Community College, and the PG&E substation. These buildings are one- to two-story in height and are rectangular shaped. Existing infrastructure includes roadways and the existing BNSF track. Overhead PG&E transmission lines and electrical lines exist³.

In addition, the CAHSR Project trackwork and electrical poles are currently under construction in the vicinity of the Project Footprint (and are part of this project's baseline). Construction activities in the vicinity of the Project Footprint are anticipated to continue for a few more years.

Phase 1 – San Joaquins Relocated Station

Construction Impacts

During construction, activities and storage of equipment would alter the visual character of the Project Footprint. Clearing and grubbing activities would remove vegetation from current agricultural land use. The construction activities related to Phase 1 would be similar to those that are occurring as part of the CAHSR Project under construction. Best Management Practices (BMPs) that would be implemented include fabric-covered screening fences to minimize public views of the construction activities, equipment, and stockpiles. Therefore, construction impacts related to degrading the existing visual character or quality of public views of the site and its surroundings would be less than significant.

Operational Impacts

Project elements would alter the visual character of the agricultural landscape through the introduction of one-story buildings and roadway improvements. Although primarily agricultural, train operations already exist in the area along the same railroad right-of-way (the BNSF Corridor) that would serve the Relocated Station in Phase 1. Single-story buildings

³ Google Street view, captured May 2020

already exist in the area, and the addition of the station elements would be consistent with the existing visual character in the vicinity of the Project Footprint. The Relocated Station would introduce similar visual elements as those present in the existing Madera Station, including a 600-foot platform with a canopy or canopies, fare box vending machines, information panels, lighting, and buildings to house restrooms and cleaning supplies. No public views would be altered due to the operations of the Relocated Station. Therefore, operational impacts related to degrading the existing visual character or quality of public views of the site and its surroundings would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction impacts would be similar to those discussed for Phase 1 above. These improvements include the construction of new cross tracks on the CAHSR corridor to provide southbound trains access to the HSR platform at the Relocated Station. Construction impacts related to new trackwork, including the construction of poles to support the overhead catenary system would be minimal, and would not significantly obstruct the visual quality and public views of the existing site and surrounding lands. Additionally, the TPSS would be constructed between the two station platforms, which would help reduce impacts to the quality of public views of the site. Therefore, construction impacts in Phase 2 related to degrading the existing visual character or quality of public views of the site and its surroundings would be less than significant.

Operational Impacts

Operational impacts would be similar to those discussed for Phase 1. Therefore, operational impacts related to degrading the existing visual character or quality of public views of the site and its surroundings would be less than significant.

3.1.4 Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project Footprint and its vicinity are characterized as agricultural and do not have many sources of nighttime lighting, except from nighttime construction activities. Street lighting along roadways in the vicinity of the Project do not typically exist, except adjacent to the Madera Community College. There is security lighting at the buildings located on Avenue 12, including the Church and Dwight and Pacific Ethanol manufacturing buildings and the PG&E substation.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction activities would introduce new sources of lighting if night work is required for both Phases 1 and 2. In addition, nighttime security lighting of the construction staging site would be required. The use of light shields is a common BMP that can be used during construction to minimize light spilling off-site, if additional mitigation efforts are needed. Construction equipment is not a typical source of glare. Therefore, construction impacts related to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area would be less than significant.

Operational Impacts

New lighting for safety and security at the station platforms, restrooms, parking lot, bus depot, and access road would introduce permanent sources of nighttime lighting to the Project, as well as the construction staging site. BMPs that would be incorporated into the design of the Project include positioning of light direction and shielding, which would minimize lighting spillover. The materials used for the one-story buildings and canopies include concrete, painted steel, and glass, which would cause minimal glare to surrounding areas. Therefore, operational impacts related to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area would be less than significant.

3.2. AGRICULTURE AND FORESTRY RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
1) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Conflict with existing zoning for agricultural use, or use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

3.2.1. Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance?

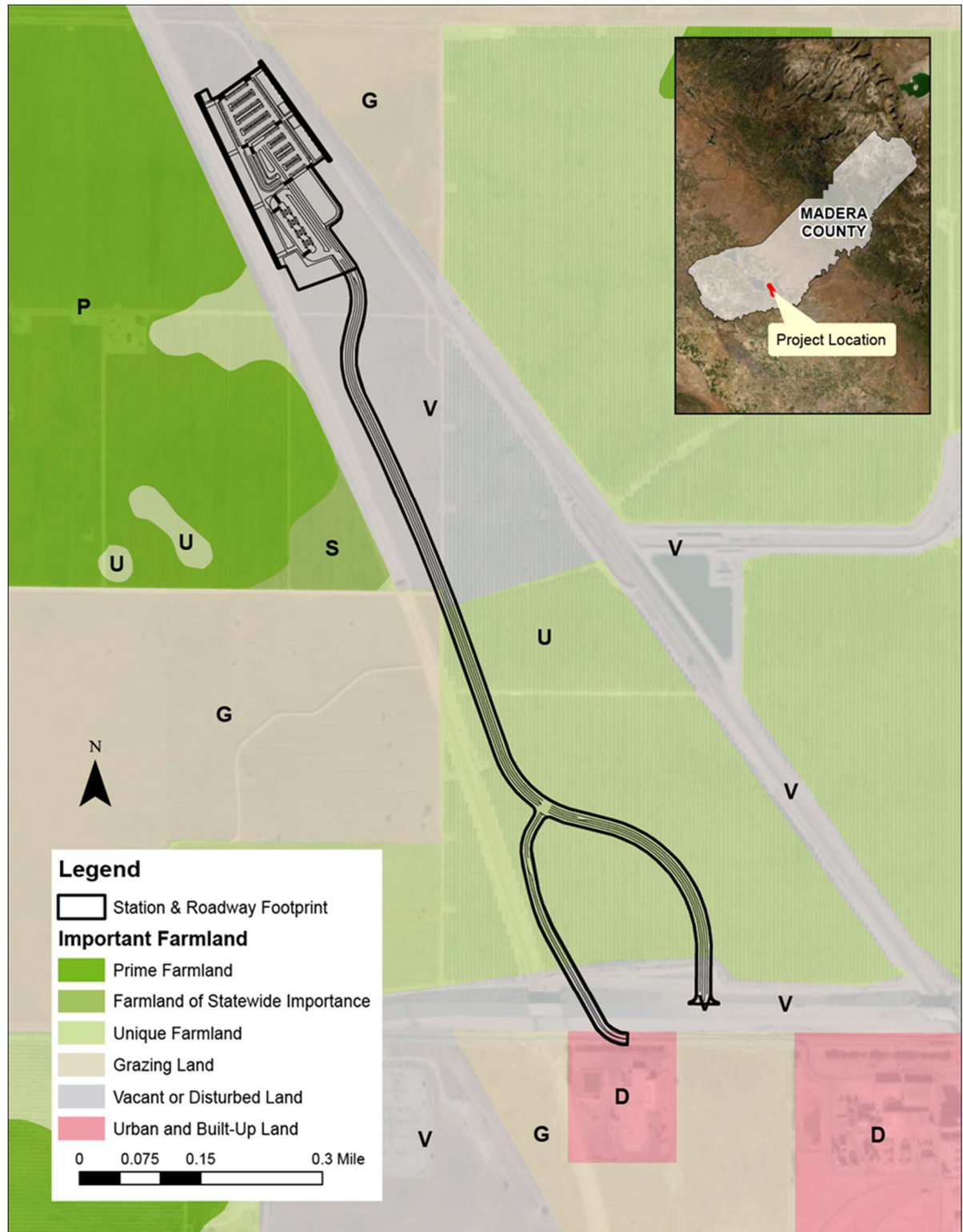
Determination: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED

The California Department of Conservation's (DOC's) Important Farmland classifications—Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance—recognize the land's suitability for agricultural production by considering the physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. Together, Important Farmland and Grazing Land are defined by the DOC as "Agricultural Land" (California Public Resources Code, Sections 21060.1 and 21095). Appendix G of the CEQA Guidelines focuses the analysis on conversion of agricultural land on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; therefore, any conversion of these lands would be considered a significant impact under CEQA.

According to the Madera County Important Farmland map, published by the DOC's Division of Land Resource Protection, the Project site is designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (DOC 2016a) (Figure 3.2-1). The following list provides a description of these farmland categories mapped by the DOC (DOC 2020):

- **Prime Farmland**—Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- **Farmland of Statewide Importance**—Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.
- **Unique Farmland**—Land of lesser quality soils used for the production of the state's leading agricultural cash crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California.

Figure 3.2-1 Farmland Classifications



Source: The California Department of Conservation, 2017

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Permanent conversion of Important Farmland to nonagricultural uses would occur where elements of Phase 1 intersect Important Farmland, or more specifically, where these elements are situated on Important Farmland. The elements of Phase 1, including trackwork, platform, parking, access road, and bus depot, would permanently convert Important Farmland to nonagricultural use (Figure 3.2-1). Based on analysis of the Madera County Important Farmland map (DOC 2016a), construction of the proposed Phase 1 elements would directly and permanently convert a total of 7.9 acres of Important Farmland, including approximately 1.1 acres of Prime Farmland, 0.9 acre of Farmland of Statewide Importance, and 5.9 acres of Unique Farmland.

The conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland would contribute to the incremental decline of Important Farmland in the county, region, and state and result in the irreversible conversion of this agricultural land. DOC estimated that Madera County included 372,748 acres of Important Farmland in 2016, of which 98,500 acres (26 percent) were classified as Prime Farmland, 85,206 acres were classified as Farmland of Statewide Importance (23 percent), and 180,291 acres (48 percent) were classified as Unique Farmland (DOC 2016b). A permanent conversion of approximately 7.9 acres of Important Farmland attributed to Phase 1 of the Project would account for 0.0027 percent of this total in Madera County. The total conversion of Important Farmland would be small in the context of the county's entire agricultural land base and would not cause a substantial reduction in the county's total agricultural production. However, Appendix G of the CEQA Guidelines considers the conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland a significant impact under CEQA.

- ***MM- AG-1: Conserve Important Farmlands (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland).***

The San Joaquin Joint Powers Authority (SJIPA) shall enter into an agreement with the Department of Conservation and its California Farmland Conservancy Program to implement agricultural land mitigation. SJIPA shall 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 Important Farmlands that are permanently converted to nonagricultural uses.

SJIPA shall document implementation of Mitigation Measure AG-1 through issuance of a compliance memorandum.

Implementation of Mitigation Measure AG-1 would reduce impacts from permanent conversion of Important Farmland to a less-than-significant level by requiring purchase of agricultural conservation easements at a ratio of 1:1 for direct use of Important Farmland. This mitigation measure would be effective in minimizing the overall permanent conversion of Important Farmland to a nonagricultural use because it would preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands and within the same agricultural regions where the impacts would occur. Therefore, construction impacts related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance use would be less than significant with mitigation incorporated.

Operational Impacts

No additional land use changes would result from operation of the Relocated Station. Therefore, no operational impacts related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Elements of Phase 2, including the platform for HSR trains, additional parking, bus bays, new trackwork, and the reconfigured access roadway, would directly and permanently convert an additional 10.6 acres of Important Farmland. This total conversion consists of approximately 4.5 acres of Prime Farmland, 0.4 acre of Farmland of Statewide Importance, and 5.7 acres of Unique Farmland (DOC 2016a). The total Important Farmland converted for both Phases 1 and 2 would total 18.5 acres. For the same reasons described above for Phase 1, conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland would be a significant impact under CEQA.

- ***MM-AG-1: Conserve Important Farmlands (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland). Refer to measure description above.***

Implementation of Mitigation Measure AG-1 would reduce impacts from permanent conversion of Important Farmland to a less-than-significant level by requiring purchase of agricultural conservation easements at a ratio of 1:1 for direct use of Important Farmland. This mitigation measure would be effective in minimizing the overall permanent conversion of Important Farmland to a nonagricultural use because it would preserve Important Farmland in an amount commensurate with the quantity and quality of the converted farmlands and within the same agricultural regions where the impacts would occur.

Operational Impacts

No additional land use changes would result from operation of the HSR Improvements as part of Phase 2. Therefore, no operational impacts related to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

3.2.2. Would the Project conflict with existing zoning for an agricultural use or a Williamson Act contract?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station

Construction and Operational Impacts

The Project Footprint and surrounding parcels are not under Williamson Act contracts (Madera County Assessor 2020). Therefore, no conflicts with a Williamson Act contract would occur.

The Project Footprint (Assessor's parcel numbers 047-070-022 and 047-070-027, 047-080-002) and surrounding parcels are zoned by Madera County as ARE-40 (Agriculture Rural Exclusive, 40-acre minimum). The ARE-40 zoning district is intended to preserve agricultural lands; transit improvements are not a permitted use in the ARE-40 zoning district (Chapter 18.53 of Title 18 in the County's Municipal Code) (Madera County 2020). This zoning designation was adopted for the purpose of avoiding a physical environmental effect on agricultural land (see Section 3.11 Land Use and Planning for further discussion of consistency with land use policies).

The Project Footprint is partially within the adopted 1,867-acre Madera SCCC Specific Plan boundary. The Madera SCCC Specific Plan discusses access to the BNSF rail line for utilization for rail service and identifies a transit station that would include Amtrak within its planning boundaries. Facilities related to the Relocated Station, including the platform, parking areas, and bus bays would be located on undeveloped land currently owned by the California High-Speed Rail Authority constructed (Assessor's parcel numbers 047-070-022 and 047-070-027). The access roadway would be constructed on land under agricultural production (Assessor's parcel number 047-080-002). SJPA would acquire only the portion of the parcel required for construction of the access roadway. The access roadway would require approximately 6 acres along the western portion of a 595-acre parcel leaving 589 acres (99 percent) available for agricultural production and the parcel would remain zoned as ARE-40. Therefore, construction and operational impacts that would conflict with existing zoning of the Project site for an agricultural use would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The location of the HSR Improvements at the Project Footprint and surrounding parcels are not under Williamson Act contracts (Madera County Assessor 2020). Therefore, no construction or operational impacts would occur that conflicts with a Williamson Act contract.

The HSR Improvements would be constructed on parcels zoned by Madera County as ARE-40. The HSR Improvements would have similar impacts relating to conflicts with zoning for

an agricultural use as described for Relocated Station. In Phase 2, the access roadway would require approximately 10 acres along the western portion of a 595-acre parcel leaving 585 acres (98 percent) available for agricultural production and the parcel would remain zoned as ARE-40. Therefore, construction and operational impacts that would conflict with existing zoning of the Project site for an agricultural use would be less than significant.

3.2.3. Would the Project conflict with existing zoning, or cause rezoning of, forest land?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project Footprint is not zoned as forestland, timberland, or a Timberland Production Zone. Therefore, construction and operational impacts would not occur that would conflict with existing zoning, or cause rezoning of, forestry resources.

3.2.4. Would the Project result in the loss of forest land or result in the conversion of forest land to non-forest use?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project area does not contain 10 percent native tree cover that would be classified as forestland under Public Resources Code Section 12220(g). Therefore, construction and operational impacts would not occur that would result in the loss of forest land or result in the conversion of forest land to non-forest use.

3.2.5. Would the Project involve other changes in the existing environment which could result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station

Construction and Operational Impacts

See response to Impacts (3.2.3 and 3.2.4) above. Phase 1 would not result in other changes in the environment that would result in the conversion of forestland to non-forest uses.

See response to Impact (3.2.2) above. The trackwork, platform, parking, and bus depot associated with Phase 1 would be constructed on undeveloped land (Assessor's parcel numbers 047-070-022 and 047-070-027), both of which are owned by CHSRA. The access

roadway would convert 6 acres of land under agricultural production to non-agricultural uses (Assessor's parcel number 047-080-002). Although the access roadway would result in the conversion of agricultural land, the remainder of this parcel (approximately 499 acres) would be of sufficient size for the continuation of agricultural operations, and the parcel would not be fragmented or irregularly shaped to such a degree that continuing agricultural land uses would be difficult or infeasible.

The Project Footprint is partially within the adopted Madera SCCC Specific Plan boundary. The SCCC Specific Plan is also designated as the Madera State Center New Growth Area (Madera County 2015). The Madera County General Plan Policy 5.A.5 states the County allows the conversion of existing agricultural lands within New Growth Areas (Madera County 2015; see Section XI Land Use and Planning for further discussion of County General Plan policies). Therefore, construction and operational impacts that would involve other changes in the existing environment which could result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

See response to Impacts (3.2.3 and 3.2.4) above. Phase 2 would not result in other changes in the environment that would result in the conversion of forestland to non-forest uses.

See response to Impact (3.2.2) above. The HSR Improvements would be constructed approximately 365 feet from the northerly edge of the platform built as part of Phase 1. The additional parking and bus bays constructed in Phase 2 would be constructed between the HSR Improvements and the original platform. The HSR Improvements would be constructed on land that is currently undeveloped. The expansion of the access roadway would convert approximately four additional acres (for a total of 10 acres for both Phases 1 and 2) of land under agricultural production to non-agricultural uses (Assessor's parcel number 047-080-002). Reconfiguration of the access road in Phase 2 would have similar impacts relating to the conversion of agricultural land to non-agricultural uses as described for Phase 1. Therefore, construction and operational impacts that would involve other changes in the existing environment which could result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use would be less than significant.

3.3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Conflict with or obstruction implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) into compliance with those standards pursuant to the requirements of the Clean Air Act (CAA) and California Clean Air Act (CCAA). NAAQS and CAAQS have been established for the following criteria pollutants: ozone, carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter less than 10 micrometers in diameter (PM₁₀), particulate matter less than 2.5 micrometers in diameter (PM_{2.5}), and lead.

The Project is within the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is responsible for preparing air quality attainment plans (AQAP) for each criteria pollutant that does not meet the standard. AQAP documents are transmitted to the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (USEPA) for incorporation into the State Implementation Plan (SIP), a comprehensive plan that describes how an area would attain and maintain the NAAQS for complying with the federal CAA. The AQAPs present comprehensive strategies to reduce emissions from stationary, area, mobile, and indirect sources. Recent AQAPs include:

- 2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards adopted in November 2018 as plan to achieve attainment of the 1997 Standard by 2020, the 2006 Standard by 2024, and 2012 Standard by 2025.

- 2016 Plan for the 2008 8-Hour Ozone Standard adopted in June 2016 as a plan to achieve attainment of the 2008 Standard by 2031.
- 2007 PM10 Maintenance Plan adopted in September 2007 to assure the SJVAB's continued attainment of the federal standard.

As shown in Table 3.3-1 below, the SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on SJVAPCD offset requirements for stationary sources. According to SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts, projects with emissions below the thresholds of significance for criteria pollutants would not impact the SJVAPCD's ability to reach or maintain attainment and would be determined to not conflict with or obstruct implementation of the SJVAPCD AQAPs (SJVAPCD 2015).

Table 3.3-1. SJVAPCD Thresholds of Significance for Criteria Pollutants during Construction Activities

Pollutant	Annual Emissions	Daily Emissions
	Tpy	lbs/day
CO	100	100
NO _x	10	100
ROG	10	100
SO _x	27	100
PM10	15	100
PM2.5	15	100
Notes: CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day. Source: SJVAPCD 2015; SJVAPCD 2018a		

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SJVAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

3.3.1. Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Determination: LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Relocated Station during Phase 1 and the HSR Improvements during Phase 2 would involve the use of off-road equipment, haul trucks, and worker commute

trips. As discussed in more detail in Impact (3.3.2) below, emissions generated from the construction of Phase 1 would not exceed the SJVAPCD annual thresholds of significance for any pollutants. However, construction related emissions of nitrogen oxides (NO_x), an ozone precursor, would exceed the daily NO_x screening threshold recommended by SJVAPCD to determine whether a project would cause or contribute to any violation of a CAAQS or NAAQS through a detailed ambient air quality analysis (SJVAPCD 2018a). Construction related emissions of Phase 2 would exceed the annual significance threshold and daily screening threshold of NO_x. Consequently, construction-related emissions related to both Phases 1 and 2 have the potential to conflict with the SJVAPCD's AQAPs. As described in more detail in Impact (3.3.2) below, with incorporation of Mitigation Measures AQ-1 and AQ-2, construction-related emissions of Phases 1 and 2 would not exceed SJVAPCD's annual thresholds and daily screening thresholds. Therefore, construction impacts related to conflicting with the applicable air quality plan would be less than significant with mitigation incorporated. The mitigation measures are defined under 3.3.2.

Operational Impacts

The Relocated Station in Phase 1 and the HSR Improvements in Phase 2 are anticipated to serve both the existing and expected future growth of Madera County, including the proposed growth in the southwest portion of Madera County and in the vicinity of the nearby Madera Community College Center.

The Project would not result in any increase in San Joaquins train service. Capacity enhancements along the BNSF Corridor to accommodate this increase in train service from seven to eight daily roundtrips are either already completed or in construction by BNSF and would be completed regardless of whether the Madera Station is relocated or not. The San Joaquins would stop at the Relocated Station but the overall criteria pollutant emissions from train operations would not change with the relocation of the Station.

The Project would not result in any increase in CAHSR train service. Current plans developed by the CHSRA include 18 round trip trains per day and the addition of a stop in Madera would not change the amount of HSR service. While the amount of HSR trains would not change, there would be a slight increase in electricity used for trains to stop at Madera due to the additional energy expended during acceleration. However, CHSRA plans to use 100% renewable energy, so this slight increase in electricity will not result in additional emissions related to train operations.

As discussed in more detail in Section 3.17 (Transportation) and in Appendix F, the Relocated Station during Phase 1 is expected to capture higher ridership for the San Joaquins than the Existing Station at Madera Acres, with an estimated ridership of 103,100 passenger ons/off (or boardings/alightings) in 2025 with Project being built (i.e. the "Build Scenario") compared to 40,200 ons/off at the Existing Station under if the Project is not build (i.e. the "No-Build Scenario").

During Phase 2, HSR ridership is estimated to further increase with the replacement of San Joaquins service at the Relocated Station with HSR service, increasing to an estimated 210,600 passenger ons/off.

This increased ridership for San Joaquins service and HSR service would result in a decrease in regional and intercity single-occupancy vehicle trips by passenger vehicles, which would produce substantive benefits in reducing vehicle miles traveled (VMT), congestion on SR-99, and associated criteria pollutant emissions. These benefits in particular, would align with the goals and objectives in the applicable SJVAPCD's AQAPs and Rules and Regulations. For example, consistent with the goal of Rule 9410, Employer-Based Trip Reduction, the Project would increase passenger rail ridership and reduce single-occupancy vehicle commutes. Thus, construction of the Project would be consistent with the goals included in SJVAPCD AQAP of increasing and facilitating innovative clean transit (SJVAPCD 2018b). Therefore, operational impacts related to conflicting with applicable AQAPs would be less than significant.

3.3.2. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Determination: LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction of Phase 1 would generate temporary emissions of criteria air pollutants and ozone precursors (reactive organic gases [ROG] and NO_x). ROG, NO_x, CO, and sulfur oxides (SO_x), PM₁₀ (exhaust), and PM_{2.5} (exhaust) emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive dust emissions (PM₁₀ and PM_{2.5}) are associated primarily with site preparation and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles.

Construction of Phase 1 is expected to begin in 2023 and last approximately 12 months.⁴ Emissions generated by construction activities were modeled using emission factors from the CARB's OFFROAD and Emission FACTor (EMFAC) 2017 inventory models. Construction emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying construction equipment usage information by the equipment-specific emissions factors, based on aggregate model years and horsepower provided in OFFROAD. Emissions

⁴ At the time of the analysis, construction was anticipated to begin in 2023. Given that exhaust emissions from the construction equipment fleet are expected to decrease over time as stricter standards take effect, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions as construction occurs in later years. Thus, the emission estimates presented in this analysis are conservative.

from on-site and off-site on-road motor vehicles were estimated using vehicle trips, VMT, and EMFAC 2017 mobile source emission factors. The emission factors represent the fleet-wide average emission factors in Madera County. Fugitive dust emissions were estimated using the U.S. EPA Compilation of Air Pollutant Factors (AP-42) and are based on material loading, VMT, and earthwork quantities. Additional modeling assumptions and details are provided in Appendix E.

Table 3.3-2 shows the daily and annual emissions associated with construction of Phase 1 of the Project. As shown in Table 3.3-2, annual construction-related emissions of CO, NO_x, ROG, SO_x, PM10, and PM2.5 would not exceed the recommended SJVAPCD annual thresholds of significance. Daily construction-related emissions of CO, ROG, SO_x, PM10, and PM2.5 would also not exceed the daily SJVAPCD thresholds of significance. However, daily construction emissions of NO_x would exceed the daily threshold of 100 pounds per day.

**Table 3.3-1. Unmitigated Construction Emissions
(Phase 1 – San Joaquin Relocated Station)**

Description	CO	NO _x	ROG	SO _x	PM10	PM2.5
Annual Emissions (tpy)	3.88	7.76	0.75	0.01	1.30	0.58
SJVAPCD Threshold of Significance (tpy)	100	10	10	27	15	15
Significant Impact?	No	No	No	No	No	No
Maximum Daily Emissions (lbs/day)	46.19	109.08	10.62	0.13	32.76	15.25
SJVAPCD Threshold of Significance (lbs/day)	100	100	100	100	100	100
Significant Impact?	No	Yes	No	No	No	No
Notes: CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day.						

These thresholds are designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria air pollutant emissions to the region's emissions profile and would not cause or contribute to an exceedance of ambient air quality standards. As shown in Table 3.3-2, maximum daily emissions of NO_x associated with construction of Phase 1 would exceed the SJVAPCD threshold of significance and have the potential to result in a cumulatively considerable net increase of NO_x emissions, a precursor to ozone, a criteria pollutant for which the Project region is non-attainment. Thus, implementation of Mitigation Measures AQ-1 and AQ-2 would be required to reduce criteria pollutant emissions.

- **MM-AQ-1. Implement advanced emissions controls for off-road equipment.** SJJPA shall require that the construction contractor for all off-road equipment greater than 50 horsepower have engines that meet or exceed Tier 3 CARB/EPA off-road emission standards, if commercially available. Lesser tier engines shall be allowed on a case-by-case basis when the contractor has documented that no Tier 3 engine equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete construction. Documentation shall consist of signed written statements from at least two construction equipment rental firms or equivalent.
- **MM-AQ-2. Implement advanced emissions controls for locomotives used for construction.** SJJPA shall require that the construction contractor for all diesel-powered locomotives used for construction to have engines that meet or exceed Tier 3 locomotive emission standards.

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction-related NO_x emissions by requiring advanced emission controls for off-road equipment and locomotives used during construction activities. Table 3.3-3 shows the estimated emissions associated with construction of Phase 1 with implementation of Mitigation Measure AQ-1 and AQ-2.

**Table 3.3-2. Mitigated Construction Emissions
(Phase 1 – San Joaquin Relocated Station)**

Description	CO	NO _x	ROG	SO _x	PM10	PM2.5
Annual Emissions (tpy)	4.60	4.57	0.35	0.01	1.18	0.48
SJVAPCD Threshold of Significance (tpy)	100	10	10	27	15	15
Significant Impact?	No	No	No	No	No	No
Maximum Daily Emissions (lbs/day)	55.26	64.56	6.60	0.13	31.72	14.32
SJVAPCD Threshold of Significance (lbs/day)	100	100	100	100	100	100
Significant Impact?	No	No	No	No	No	No
Notes: CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day.						

As shown in Table 3.3-3, incorporation of MM-AQ-1 and MM-AQ-2 would reduce NO_x emissions to a less than significant level. In addition, SJVAPCD would require implementation of Regulation VIII Control Measures (fugitive dust requirements) for construction emissions of PM10 which would further reduce fugitive dust emissions of PM10 and PM2.5 during construction of the Interim Phase. As such, construction-related emissions of Phase 1 would not result in a cumulatively considerable net increase of any

criteria pollutant for which the Project region is non-attainment. Therefore, construction impacts related to a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be less than significant with mitigation incorporated.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Operational Impacts

As discussed earlier in this chapter, the Project would not result in an increase in San Joaquins or HSR train service levels. Also described earlier this section and in Section 3.17 (Transportation), the Project would result in a net reduction of VMT by inducing a mode shift from personal automobiles to public transit, including long-distance intercity trips through an estimated increased rail ridership. The annual net reduction in VMT would result in a net reduction in criteria pollutant emissions in the region.

The Relocated Station during Phase 1 would expand the catchment population of the San Joaquins service and is expected to result in increased ridership overall compared to the existing station in Madera Acres. The HSR Improvements during Phase 2 would bring intercity HSR service directly to Madera County, providing vastly improved travel times via rail over existing rail service in the County. Thus, the Project is expected to result in a net reduction in VMT from personal vehicles in the region and the associated criteria air pollutant emissions.

While there is expected to be some increase in criteria air pollutant emissions associated with new localized VMT due to vehicle activity, including buses and personal vehicle trips, to and from the proposed station, these effects would be far outweighed by the reduction in regional and intercity VMT due to mode shifts from automobiles to passenger rail.

The estimated increase in ridership due the Project would result in VMT reductions and, thereby, a reduction in regional criteria air pollutants that would outweigh the nominal increase in emissions associated with travel to and from the proposed station. As described in more detail in Section 3.17 (Transportation), Phase 1 is anticipated to result in an annual net reduction of approximately 3,189,300 vehicle-miles traveled under the 2025 Phase 1 conditions. Phase 2 is anticipated to result in an annual net reduction of approximately 8,102,300 vehicle-miles traveled under the 2029 Phase 2 conditions. Table 3.3-4 presents the estimated annual and daily emissions reductions associated with the avoided VMT.

Table 3.3-4. Emissions Reductions Associated with Net Reduction in VMT

Description	CO	NO _x	ROG	SO _x	PM10	PM2.5
Phase 1 – San Joaquins Relocated Station						
Avoided Daily Emissions (lbs/day)	(13.36)	(0.81)	(0.20)	(0.05)	(0.89)	(0.37)
Avoided Annual Emissions (tons/year)	(2.44)	(0.15)	(0.04)	(0.01)	(0.16)	(0.07)
Phase 2 – HSR Interim Operating Segment Station						
Avoided Daily Emissions (lbs/day)	(27.91)	(0.19)	(0.32)	(0.12)	(2.26)	(0.93)
Avoided Annual Emissions (tons/year)	(5.09)	(0.04)	(0.06)	(0.02)	(0.41)	(0.17)
Notes: CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day.						

Thus, operational emissions associated with operation of the Project is anticipated to generate a beneficial impact to air quality in the region by reducing VMT and the associated criteria air pollutants in the region.

Therefore, operational impacts related to a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Phase 2 is expected to begin in 2026 and last approximately 24 months. Emissions generated by construction activities were estimated using the same methodology as described for Phase 1.

Table 3.3-5 shows the daily and annual emissions associated with construction of Phase 2 of the Project. As shown in Table 3.3-5, annual construction-related emissions of CO, ROG, SO_x, PM10, and PM2.5 would not exceed the recommended SJVAPCD annual thresholds of significance. Daily construction-related emissions of CO, ROG, SO_x, PM10, and PM2.5 would also not exceed the daily SJVAPCD thresholds of significance. However, annual and daily construction emissions of NO_x would exceed the annual and daily thresholds of 10 tons per year and 100 pounds per day, respectively.

**Table 3.3-5. Unmitigated Construction Emissions
(Phase 2 – HSR Interim Operating Segment Station)**

Description	CO	NO _x	ROG	SO _x	PM10	PM2.5
Annual Emissions (tpy)	4.98	10.95	1.02	0.01	2.14	0.91
SJVAPCD Threshold of Significance (tpy)	100	10	10	27	15	15
<i>Significant Impact?</i>	No	Yes	No	No	No	No
Maximum Daily Emissions (lbs/day) ¹	46.19	109.08	10.29	0.13	33.13	15.30
SJVAPCD Threshold of Significance (lbs/day)	100	100	100	100	100	100
<i>Significant Impact?</i>	No	Yes	No	No	No	No
Notes: ¹ Per project engineers, similar types of equipment would be used for both Phases 1 and 2. Thus, potential maximum daily emissions for both scenarios are the same. CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day.						

As such, construction of Phase 2 has the potential to result in a cumulatively considerable net increase of NO_x emissions, a precursor to ozone, a criteria pollutant for which the Project's region is non-attainment. Thus, implementation of Mitigation Measures AQ-1 and AQ-2, as described above, would also be required to reduce criteria pollutant emissions during construction of Phase 2. Estimated emissions associated with the implementation of Mitigation Measures AQ-1 and AQ-2 are shown in Table 3.3-6.

**Table 3.3-6. Mitigated Construction Emissions
(Phase 2 – HSR Interim Operating Segment Station)**

Description	CO	NO _x	ROG	SO _x	PM10	PM2.5
Annual Emissions (tpy)	5.90	6.21	0.51	0.01	1.98	0.77
SJVAPCD Threshold of Significance (tpy)	100	10	10	27	15	15
<i>Significant Impact?</i>	No	No	No	No	No	No
Maximum Daily Emissions (lbs/day)	55.26	64.56	6.27	0.13	32.09	14.37
SJVAPCD Threshold of Significance (lbs/day)	100	100	100	100	100	100
<i>Significant Impact?</i>	No	No	No	No	No	No
Notes: CO = carbon monoxide; NO _x = nitrogen oxides; ROG = reactive organic gases; SO _x = sulfur oxides; PM10 = suspended particulate matter less than 10 micrometers in diameter; PM2.5 = fine particulate matter less than 2.5 micrometers in diameter; tpy = tons per year; lbs/day = pounds per day.						

As shown in Table 3.3-6, incorporation of MM-AQ-1 and MM-AQ-2 would reduce NO_x emissions to a less than significant level. In addition, SJVAPCD would require implementation of Regulation VIII Control Measures (fugitive dust requirements) for construction emissions of PM₁₀ which would further reduce fugitive dust emissions of PM₁₀ and PM_{2.5} during construction of Phase 2. As such, construction-related emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment. Therefore, construction impacts related to a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard would be less than significant with mitigation incorporated.

3.3.3. Would the Project expose sensitive receptors to substantial pollutant concentrations?

Determination: LESS THAN SIGNIFICANT IMPACT

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. For the purposes of a CEQA analysis, the SJVAPCD considers a sensitive receptor to be facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s) are examples of sensitive receptors (SJVAPCD 2015).

The Project elements, including trackwork, platforms, parking, access road, roadway improvements, and bus depot, would be constructed in a rural and agricultural area of Madera County. The nearest sensitive receptor to the Project Footprint is a single-family residence approximately 750 feet east of the northern trackwork and approximately 1.3 miles from the proposed station facilities.

Criteria Air Pollutants

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

As described previously, NAAQS and CAAQS have been established for criteria air pollutants using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. As shown in Tables 3.3-2 and 3.3-5, construction-related activities would result in emissions of ROG, CO, SO_x, PM₁₀, and PM_{2.5} that would not exceed SJVAPCD thresholds of significance. However, NO_x emissions during construction of Phases 1 and 2 would exceed the SJVAPCD threshold of significance. The thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable CAAQS and NAAQS. Therefore, projects that would not exceed the thresholds of significance would not impede

attainment and maintenance of the standards, which can inform the Project's impacts to regional air quality and health risks associated from criteria pollutants under CEQA.

Further, negative health effects associated with criteria pollutants are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, health history]). Moreover, ozone precursors (ROG and NO_x) are pollutants that affect air quality on a regional scale. Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. Chronic exposure to high ozone levels can permanently damage lung tissue.

Because of the reaction time and other factors involved in ozone formation, ozone is considered a regional pollutant that is not linearly related to emissions (i.e., ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology, and seasonal impacts). Therefore, health effects related to ozone are the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and as such, translating project-generated criteria pollutants to specific health effects would not produce meaningful results (SCAQMD 2015). In other words, minor increases in regional air pollution from project-generated ROG and NO_x would have nominal or negligible impacts on human health.

Further, the SCAQMD states that a project emitting only 10 tons per year of NO_x or VOC/[ROG] (same order of magnitude as the unmitigated emissions generated during construction by the Project) is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models used to determine ozone levels (SCAQMD 2015). Therefore, in this case, it would not be feasible to directly correlate Project emissions of criteria pollutants, including ozone precursors of NO_x and ROG, with specific health impacts from ozone.

In addition, as stated above in Section 3.3.2, Mitigation Measures AQ-1 and AQ-2, would be used to reduce emissions of NO_x below the SJVAPCD threshold of significance. Mitigation Measures AQ-1 requires implementation of Tier 3 off-road engines, which reduce NO_x emissions by approximately 38 percent compared to Tier 2 engines (SCAQMD 2014). Because the thresholds were developed to assist the region in attaining the applicable CAAQS and NAAQS, which are established using health-based criteria, construction impacts related to exposing sensitive receptors to substantial pollutant concentrations would be less than significant.

Operational Impacts

As discussed in more detail earlier in this section and in Section 3.17 (Transportation), the Relocated Station, during Phases 1 and 2, is expected to capture higher ridership for the San Joaquins than the Existing Station at Madera Acres. Consequently, the Project is anticipated to result in a net reduction in VMT from personal vehicles in the region by increasing ridership on both the San Joaquins in Phase 1 and HSR services in Phase 2. Thus, as shown in Table 3.3-4, implementation of the Project would improve regional air quality.

While there would be an increase in localized criteria air pollutants due to vehicle activity, including buses and personal vehicles trips, to and from the Relocated Station in both Phases 1 and 2 these effects would be far outweighed by the reduction in regional criteria air pollutant emissions due to the reduction in personal vehicle trips. The localized emissions of criteria air pollutants would be small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models used to determine ozone levels (SCAQMD 2015). In addition, the HSR trains are electric-powered; thus, HSR operations at the station would also not expose sensitive receptors to substantial criteria pollutant concentrations. Therefore, operational impacts related to exposing sensitive receptors to substantial pollutant concentrations would be less than significant.

Toxic Air Contaminants

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

A toxic air contaminant (TAC) is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (26 C.C.R §39655). The greatest potential for TAC emissions would be related to diesel particulate matter (diesel PM) emissions associated with heavy-duty construction equipment operations. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). According to OEHHA methodology, health impacts from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs.

Construction activities are anticipated to last approximately 12 months and 24 months for Phase 1 and Phase 2, respectively, and stretch across 14 acres for Phase 1 and 35 acres for Phase 2 and would cease following completion of the Project. As described previously, the nearest sensitive receptor is a single-family home approximately 750 feet east of the northern trackwork that extends parallel to a non-public, unpaved Santa Fe Drive. The majority of the construction activities (and construction emissions) would occur at the proposed station site which is approximately 1.3 miles from the nearest sensitive receptor. Thus, construction activities would not occur in the immediate proximity of sensitive receptors for an extended period of time. Studies also indicate that diesel PM emissions and

the relative health risk decrease substantially beyond 300 feet (CARB 2005; Zhu et al. 2002). Therefore, given the substantial buffer distance to the nearest sensitive receptors, construction impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Operational Impacts

Train idling by the San Joaquins at the Relocated Station in Phase 1 would generate localized TAC emissions associated with the diesel-powered trains. In addition, there may be periodic maintenance activities at the station that might include diesel-powered equipment use. However, any train idling or maintenance activities at the proposed relocated station would occur approximately 1.3 miles from the nearest receptor.

There is also a potential for an increase in localized TAC emissions from diesel-fueled buses and gas-powered vehicles associated with the new vehicle trips to and from the proposed station. However, these emissions would occur along the existing road network and the proposed access road, which would not be in the immediate vicinity of any sensitive receptors. For example, the nearest sensitive receptor is approximately 750 feet from Santa Fe Drive.

The TAC emissions due to train idling or maintenance at the station or new vehicle trips to and from the station would occur outside the recommended buffer distances included in the CARB Air Quality and Land Use Handbook: A Community Health Perspective (Handbook) for air pollution sources. The key recommendations in the Handbook are to avoid siting sensitive land uses (a) within 500 feet of a freeway, urban roads with 100,000 vehicles per day, (b) within 1,000 feet of a major service and maintenance rail yard, (c) Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries, (d) within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet), or (e) within 300 feet of a large gas station. These guidelines are based primarily on data showing that the amount of exposure to these air pollution sources can be reduced as much as 80 percent with the recommended separations (CARB 2005). Thus, operational impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

For Phase 2, HSR trains are electrically powered and have no direct criteria pollutant or TAC emissions due to HSR train idling or operations. As described above for Phase 1, HSR Improvements in Phase 2 would also generate localized TAC emissions associated with the new vehicle trips to and from the proposed station and maintenance at the station. However, these emissions would also occur along the existing road network and the proposed access road which would not be in the immediate vicinity of any sensitive receptors. Therefore, operational impacts related to exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

3.3.4. Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Potential sources that may emit odors during construction activities include exhaust from diesel construction equipment. However, due to the distance to the nearest sensitive receptors (approximately 750 feet at the nearest point) and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by emissions, such as those leading to odors associated with Project construction. The Project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Therefore, construction impacts related to emissions (such as those leading to odors) adversely affecting a substantial number of people would be less than significant.

Operational Impacts

Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities. Operation of the Project is not a typical odor-generating land use and the increase in train service would occur on the existing BNSF corridor. Therefore, after construction, operational emissions, including diesel exhaust odors, are not anticipated to increase substantially beyond existing conditions. As a result, the Project would not create objectionable odors affecting a substantial number of people. Therefore, operational impacts related to emissions (such as those leading to odors) adversely affecting a substantial number of people would be less than significant.

3.4. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

For a discussion of the existing setting, refer to Appendix A.

- 3.4.1. Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS?**

Determination: LESS THAN SIGNIFICANT WITH MITIGATIONS INCORPORATED

Impacts on Special-Status Plant Species

Phase 1 – San Joaquins Relocated Station

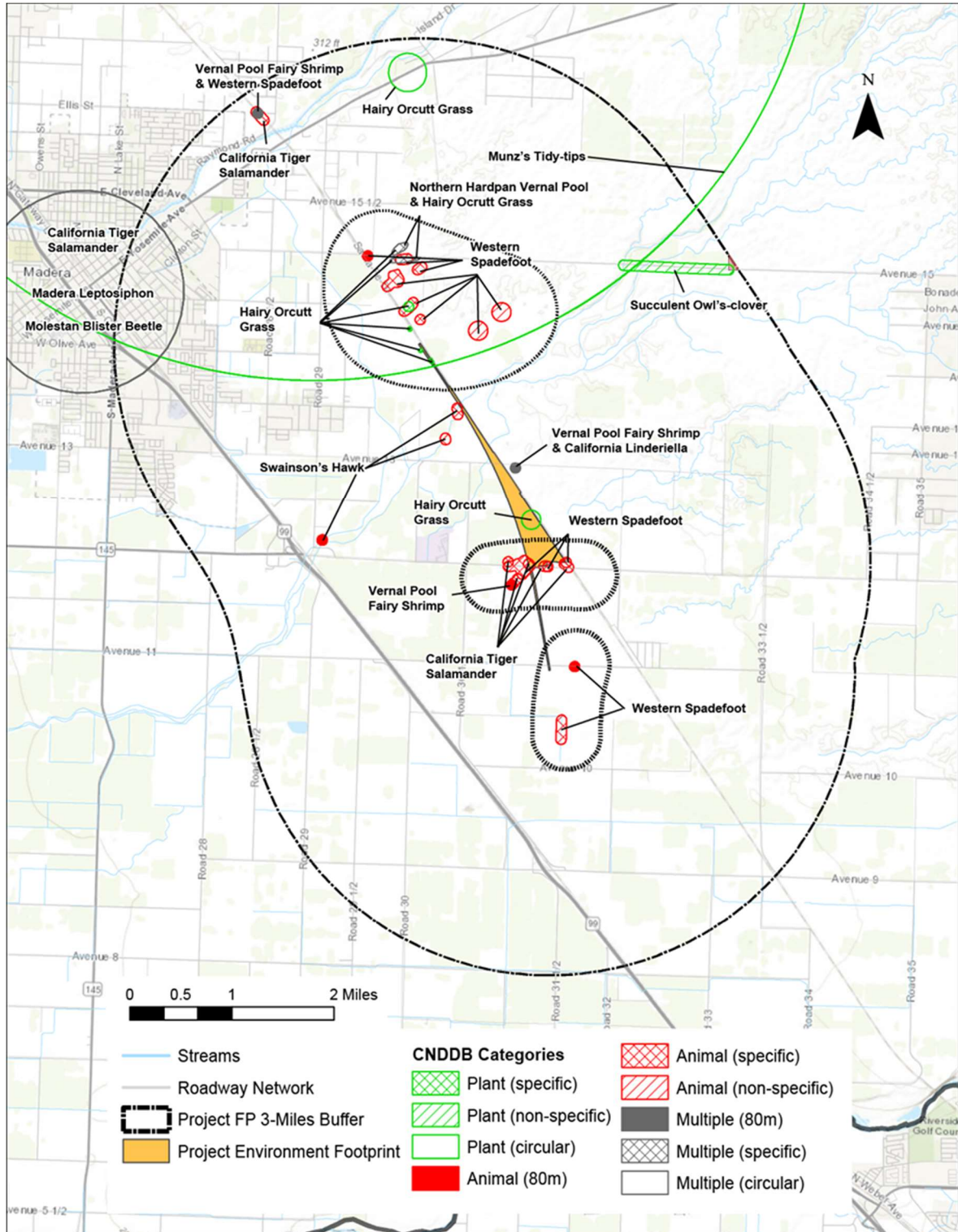
Construction Impacts

Six small linear-to-oblong depressional seasonal wetland features occur in the Project Footprint parallel to the toe of the railroad embankment that may potentially support seasonal wetland (SW-) or vernal pool communities (Figures 3.4-2 through 3.4-4); one of these, SW-4, occurs directly below the proposed Footprint of the Relocated Station. While hairy Orcutt grass (*Orcuttia pilosa*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), succulent owl's-clover (*Castilleja campestris* var. *succulenta*), and spiny-sealed button-celery (*Eryngium spinosepalum*) inhabit vernal pools (which are the only features in the area for potential for special-status plants given its agricultural nature), these six small seasonal wetlands do not provide the hydrological and soil characteristics needed to support these plant species. There is a remnant vernal pool in the northern portion of the proposed Project Footprint (Figure 3.4-1) known to support hairy Orcutt grass, but construction associated with this phase of the Relocated Station would not occur in this area (per preliminary engineering). Therefore, construction impacts related to a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) special-status plant species would be less than significant.

Operational Impacts

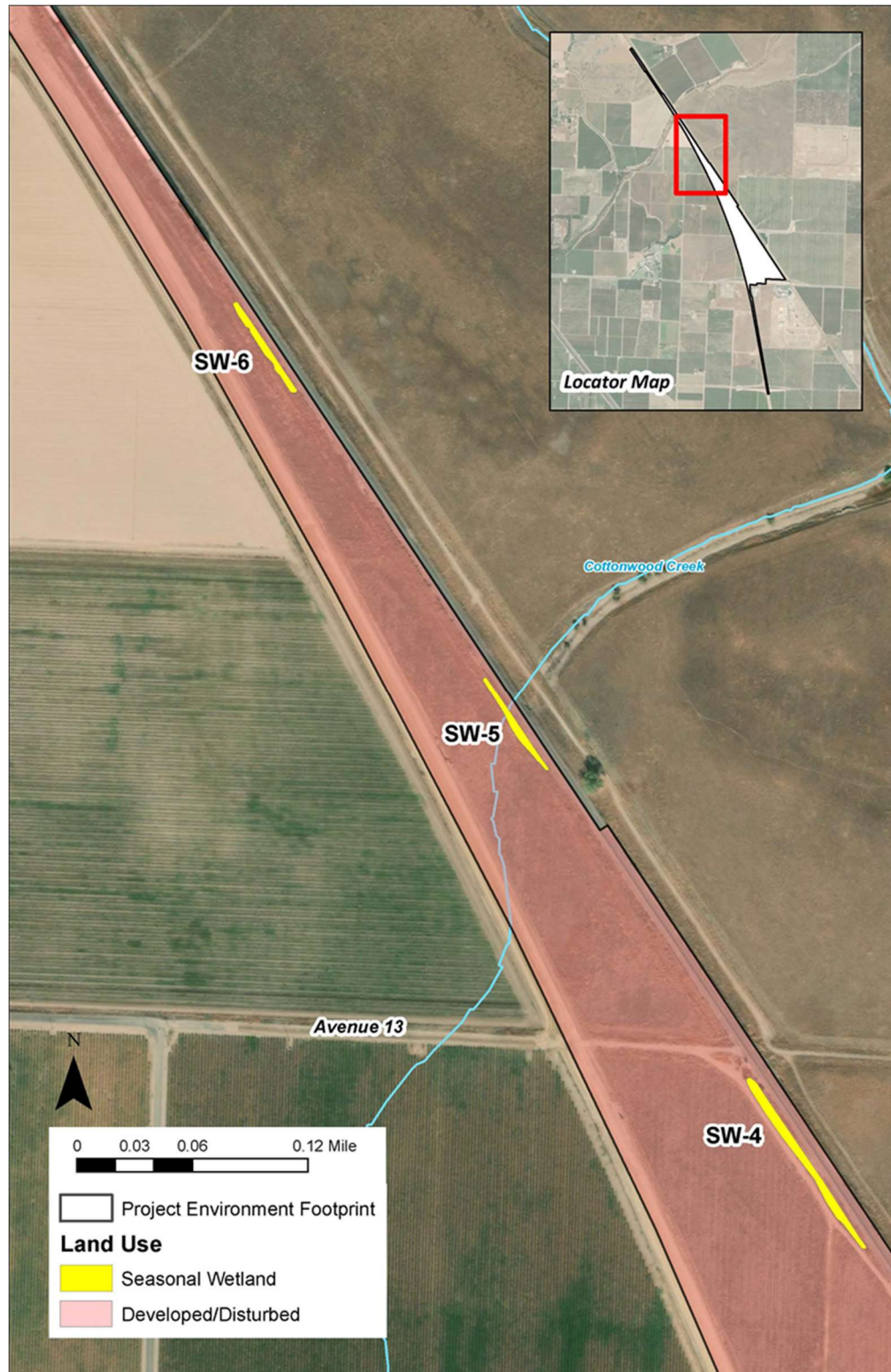
Impacts of future operation of San Joaquins at the Relocated Station during Phase 1, including those from increased vehicular traffic to/from the Relocated Station, are not expected to have adverse effects on special-status plants because no special-status plants are expected to occur in the six seasonal wetlands or in the entire area (i.e., station, tracks, parking areas, access road, etc.) that would be built out for the Relocated Station. Any surrounding habitat outside of the Project Footprint that could potentially support special-status plant species would remain in its natural or current state and be unaffected by operational impacts. Therefore, operational impacts related to a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS would be less than significant.

Figure 3.4-1 Special-Status Plant Species



Source: AECOM, 2020.

Figure 3.4-2 Designated Wetlands Part 1



Source: AECOM; ESRI 2020

Figure 3.4-3 Designated Wetlands Part 2



Source: AECOM; ESRI, 2020

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

A remnant vernal pool at the northern portion of the Project Footprint (Figure 3.4-2) could potentially support hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, and spiny-sepaed button-celery. While this vernal pool feature is within the Project Footprint, it is approximately 10 feet east of the CAHSR Project's track construction Footprint. Construction activities in this vernal pool would result in direct impacts on these special-status plant species. In addition, alteration of soil conditions in or near the vernal pool by clearing and grading may result in the loss of native seed banks, or changes to topography and drainage patterns that could impair the ability of the habitat to support these vernal pool species in the future.

Potential indirect impacts on these special-status plants from nearby construction activities include deposition of dust from construction activities that may reduce photosynthetic capacity or inhibit reproduction by coating leaves and reproductive structures. Indirect impacts could also result from the creation of conditions favorable for the invasion of weedy exotic species that outcompete native species and prevent the reestablishment of desirable vegetation, including special-status plants. Ground-disturbing activities have the potential to result in the introduction and spread of noxious weed species of concern to local agricultural interests and to the California Invasive Plant Council (Cal-IPC 2020). Invasive plant seeds can be introduced via construction vehicles and personnel, soils used from backfill, and grading and clearing of vegetated areas. Invasive seeds may also be introduced after construction by off-highway vehicles, or livestock from newly created access to areas that previously had limited access.

The potential direct and indirect impacts of construction on these special-status plant species, which are regionally rare and of limited distribution, would be significant.

This potential impact can be reduced to a less-than-significant level with implementation of the mitigation measures listed below. These measures are consistent with the mitigation measures in the California High-Speed Train: Merced to Fresno Section Final Project EIR/Environmental Impact Statement (EIS) (CHSRA and FRA 2012). The common mitigation measures MM-BIO-1 through MM-BIO-14 identify avoidance, minimization, and compensation measures to minimize potential impacts and effects on special-status species. MM-BIO-1 through MM-BIO-14 would avoid, protect, or compensate for Project impacts on special-status species and other biological resources and would be applied to all impacts described below as appropriate.

In addition, implementation of MM-BIO-15 would reduce construction impacts on hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, and spiny-sepaed button-celery to less than significant by protecting special-status plant occurrences in an environmentally restricted area (ERA) that is closed off and marked as an environmentally

sensitive areas during construction, or by implementing compensatory mitigation to offset impacts. If direct impacts cannot be avoided, compensatory mitigation would be accomplished by purchasing credits at a mitigation bank or by developing and implementing a Special-Status Plant Mitigation Plan. Mitigation for either approach would be at a 1:1 ratio at a minimum and would offset the loss of special-status plants due to construction activities. Therefore, construction impacts related to substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS would be less than significant with mitigation incorporated.

Operational Impacts

As noted above, the Project will not change HSR service levels, so it will not change impacts associated with HSR train operations. Impacts during Phase 2, including those from increased vehicular traffic to/from the Relocated Station, are not expected to have adverse effects on special-status plants. In the case construction impacts to the vernal pool wetland known to support hairy Orcutt grass and with potential to support other special-status plants cannot be avoided, all the special-status plants at this location would be directly impacted by the construction of the HSR tracks and none would remain. If, however, special-status-plants in this area were flagged and avoided, once developed, this area would be fenced and off limits to the public, and no other infrastructure or operational activities would occur here. The habitat for special-status species in this area would therefore remain in its current state following development and largely protected from future operational impacts. Operational impacts of the HSR Improvements on special-status plant species are therefore considered less than significant.

Mitigation for Special-Status Plant Species (MM-BIO-15 and MM-BIO-16) and General Mitigation Measures (MM-BIO-1 through MM-BIO-14) for all Special-Status Species and Biological Resources Addressed Below:

- **MM-BIO-1: Designate Project Biologist(s), Contractor's Biologist(s), and Project Biological Monitor(s).** During contract procurement for construction and construction management and Contractor selection and prior to ground-disturbing activities, designate a Project Biologist(s), a Contractor's Biologist(s), and a Project Biological Monitor(s), which would be responsible for conducting biological monitoring, overseeing regulatory compliance requirements, and monitoring restoration activities associated with ground-disturbing activities in accordance with the adopted mitigation measures and applicable laws. These roles are defined below:

Project Biologist: The Project Biologist represents and report directly to the Construction Management Team and is responsible for reporting and overseeing the biological resources mitigation measures presented below. The Project Biologist is also responsible for ensuring that the terms and conditions in U.S. Fish and

Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) permits are outlined in the Mitigation Monitoring and Reporting Program (MMRP). The Project Biologist shall report to the overall construction management team, interact with the designated Resident Engineer (part of the Contractor), and shall work to provide quality assurance on the implementation of the mitigation measures as performed by the Contractor and the designated Contractor's Biologist. It is anticipated that the Project Biologist shall have specialized support from other biological monitors and shall work with the construction management team during deployment of the monitors and their respective responsibilities.

Contractor's Biologist: The Contractor's Biologist is responsible for implementing mitigation measures in compliance with the terms and conditions outlined in the MMRP and USFWS, USACE, RWQCB, and CDFW permits, as applicable. The Contractor's Biologist shall work to implement mitigation reflected within the construction drawings and specifications. The Contractor's Biologist shall keep the Project Biologist informed of the progress, planning, implementation, and activities conducted in support of the implementing the mitigation measures.

Project Biological Monitor: The Project Biological Monitor shall be approved by and report directly to the Project Biologist. The Project Biological Monitor shall be onsite during all ground-disturbing activities that have the potential to affect biological resources and would be the principal agent(s) in the direct implementation of the MMRP and compliance assurance. The Project Biological Monitor is responsible for Worker Environmental Awareness Program (WEAP) training, general surveys, compliance monitoring, and reporting. The Project Biological Monitor shall act on behalf of the Project Biologist.

The Project Biologist's duties include reviewing design documents and construction schedules and determining which Project Biological Monitor(s), depending on type of biological issues, need(s) to report to the construction site each day. The Project Biologist informs the Biological Monitors as to which mitigation measures should be documented each day and of any special issues that arise during meetings with the construction management team and/or the Contractor's team.

The Contractor's Biologist is responsible for the timely implementation of the biological mitigation measures as outlined in the MMRP and construction documents and pertinent resource agency permits. The Project Biological Monitor's duties include monitoring construction crew activities, as needed, to document compliance with applicable mitigation measures and permit conditions.

- **MM-BIO-2: Regulatory Agency Access.** If requested, before, during, or upon completion of ground-disturbing activities, the Contractor shall allow access by

USFWS, USACE, RWQCB, and CDFW staff to the construction site. Due to safety concerns, these agencies shall check in with the Resident Engineer prior to accessing the construction site.

- **MM-BIO-3: Prepare and Implement a Worker Environmental Awareness Program.** Prior to ground-disturbing activities, the Contractor shall prepare and implement a WEAP for construction crews. WEAP training materials include the following: discussion of the federal Endangered Species Act (ESA), Californian Endangered Species Act (CESA), Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act (MBTA), Clean Water Act (CWA), and the California Fish and Game Code; consequences and penalties for violation or noncompliance with these laws and regulations and Project permits; identification and value of special-status plants, special-status wildlife, jurisdictional waters, and special-status plant communities; 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, detail construction timing in relation to habitat and species' life stage requirements and discuss Project maps, showing areas of planned minimization and avoidance measures.

The Contractor shall implement the WEAP training before the initiation of construction activities and repeat, as needed, when new personnel begin work within the construction Footprint. The Contractor shall perform daily updates and synopsis of the training during the daily safety ("tailgate") meeting. The Contractor shall require that all personnel who attend the training sign an attendance list stating that they have received the WEAP training.

- **MM-BIO-4: Prepare and Implement a Noxious Weed Control Plan.** Prior to ground-disturbing activities, the Contractor shall prepare and implement a Noxious Weed Control Plan to minimize or avoid the spread of noxious weeds during ground-disturbing activities. "Noxious Weeds" shall be defined, per California Food and Agricultural Code, Section 5004 as "any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate." In the Noxious Weed Control Plan, the Contractor shall address the following:
 - Identify noxious weed control treatments including permitted herbicides, and manual and mechanical methods for application. Restrict herbicide application from use in environmentally sensitive areas.
 - Determine timing of the noxious weed control treatment for each plant species.
 - Identify fire prevention measures.

The Contractor shall implement the Noxious Weed Control Plan during the construction period and require that maintenance crews follow the guidelines in the

Noxious Weed Control Plan during both the construction and operations of the Project.

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

During final design, the Contractor shall prepare a Biological Resources Management Plan (BRMP) and assemble the biological resources mitigation measures. In the BRMP, the Contractor shall include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP shall 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 Contractor shall form the parameters for the BRMP with the mitigation measures from this section, including terms and conditions as applicable from the USFWS, USACE, RWQCB, and CDFW permits, as applicable.

In the BRMP, the Contractor shall organize the biological resources mitigation measures and terms and conditions to help facilitate their implementation. The Contractor shall oversee the implementation of the BRMP and shall prepare compliance reports to document implementation and performance.

- **MM-BIO-6: Prepare and Implement a Restoration and Revegetation Plan.** During final design, the Contractor shall prepare a restoration and revegetation plan (RRP) for habitat subject to temporary ground disturbances during construction that would require decompaction or regrading, if appropriate.

- **MM-BIO-7: Delineate Environmentally Sensitive Areas and Environmentally Restricted Areas (on plans and in-field).** Prior to ground-disturbing activities, to the extent practicable, the Contractor shall verify that environmental sensitive areas and environmentally restricted areas (ERAs) are delineated as appropriate. Environmentally sensitive areas are areas within the construction zones containing suitable 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 areas outside the Project Footprint under construction that must be protected in-place during all construction activities.

Prior to ground-disturbing activities, the Contractor shall include all environmentally sensitive areas and ERAs on final construction plans (including grading and landscape plans). The Contractor shall prepare maps of all environmentally sensitive areas and ERAs on the design drawings and work to update these maps as necessary. The Contractor shall submit these maps to the SJPA for their review and approval prior to the start of construction.

Prior to ground-disturbing activities, install the environmentally sensitive area and ERAs. Mark environmentally sensitive areas and ERAs with high visibility temporary fencing to prevent encroachment of construction personnel and equipment onto sensitive areas. Designate the two categories, environmentally sensitive area and ERA, differently in the field (e.g., different colored flagging/fencing). Use sub-meter accurate GPS equipment to delineate all environmentally sensitive areas and ERAs. Remove environmentally sensitive areas and ERA fencing when construction is complete, or the resource has been cleared according to agency permit conditions in the MMRP and construction drawings and specifications.

- **MM-BIO-8: Equipment Staging Areas.** Prior to ground-disturbing activities, the Contractor shall locate staging areas for construction equipment outside sensitive biological resources including habitat for special-status species, habitats of concern, and wildlife movement corridors, to the maximum extent possible.
- **MM-BIO-9: Avoid Mono-Filament Netting.** During ground-disturbing activities, Contractor shall verify that plastic monofilament netting (erosion-control matting) or similar material is not used in erosion control materials; substitutes include coconut hair matting or tackified hydroseeding compounds.
- **MM-BIO-10: Vehicle Traffic.** During ground-disturbing activities, the Contractor shall restrict Project-related vehicle traffic, within the construction area, to established roads, construction areas, and other designated areas. Contractor shall establish vehicle traffic locations disturbed by previous activities to prevent further adverse effects. Workers shall observe a 20-mph speed limit for construction areas with potential special-status species habitat. Lastly, the Contractor shall clearly flag and mark access routes and prohibit off-road traffic.
- **MM-BIO-11: Entrapment Prevention.** The Contractor shall cover all excavated, steep-sided holes or trenches, more than eight inches deep, at the close of each working day with plywood or similar materials or provide a minimum of one escape ramp per 10 feet of trenching constructed of earth fill. The Contractor shall thoroughly inspect such holes or trenches for trapped animals before filling.

Screen all culverts, or similar enclosed structures, with a diameter of 4 inches or greater to prevent use by wildlife. Clear stored material at the construction site for common and special-status wildlife species before the material is subsequently used or moved.

- **MM-BIO-12: Work Stoppage.** During ground-disturbing activities, the Contractor shall halt work in the event that a special-status wildlife species gains access to the Project Footprint under construction. The Contractor shall suspend ground-disturbing activities in the immediate area that could reasonably result in a take of special-status wildlife species. The Contractor shall continue the suspension until

the individual leaves voluntarily, is relocated to a release area using USFWS- and/or CDFW-approved handling techniques and relocation methods, or as required by USFWS or CDFW.

- **MM-BIO-13: 'Take' Notification and Reporting.** The Contractor shall notify the USFWS and/or CDFW immediately in the case of an accidental death or injury to a federal or state listed species during Project-related activities.
- **MM-BIO-14: Post-Construction Compliance Reports.** The Contractor shall submit post-construction compliance reports consistent with the appropriate agency (e.g., USFWS and CDFW) protocols within 90 days of completion of construction.
- **MM-BIO-15: Conduct Pre-Construction Surveys for Special-Status Plant Species and Implement Avoidance, Minimization and Mitigation Measures.** A qualified botanist shall conduct protocol-level preconstruction special-status plant surveys for potentially occurring species during the appropriate survey period, based on the blooming or identification period, and preceding the start of construction. All plant species encountered on the Project area shall be identified to the taxonomic level necessary to determine species status. The surveys shall be conducted no more than 5 years prior and no later than the blooming period immediately preceding the approval of a grading or improvement plan or any ground disturbing activities, including grubbing or clearing. If one or more occurrences of hairy Orcutt grass, San Joaquin Valley Orcutt grass, succulent owl's-clover, or spiny-sealed button-celery are detected, CDFW and/or USFWS shall be consulted to develop avoidance and minimization measures to protect these occurrences from direct and indirect impacts during construction. Protection shall involve establishment of ERAs and marking them as environmentally sensitive areas for all occurrences, as described above in MM-BIO-7. If direct and indirect impacts on special-status plants cannot be avoided by protecting the occurrences within ERAs, MM-BIO-16 shall be implemented.
- **MM-BIO-16: Implement Compensatory Mitigation Measures for Special-Status Plant Species in Consultation with CDFW and/or USFWS.** If special-status plant species in the vernal pool cannot be protected from direct and indirect impacts, USFWS and CDFW shall be consulted to determine if an ITP is required and to develop appropriate compensatory mitigation for loss of special-status plants in the vernal pool. As directed by CDFW and/or USFWS (depending on whether the plant occurrences are state or federally listed), mitigation shall be accomplished by either (1) purchasing credits from an existing, approved mitigation bank that provides habitat for the affected special-status plant species, or (2) developing and implementing a Special-Status Plant Mitigation Plan for salvage, relocation and/or propagation of special-status plant species. Mitigation shall be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results

of the preconstruction plan surveys) or at a greater ratio if specified in the ITP. If a Special-Status Plant Mitigation Plan is developed the mitigation strategy in the plan shall include performance standards for successful establishment of the target special-status plants and/or enhancement of existing habitat, and a monitoring and reporting program to track revegetation and/or enhancement success. This plan shall be developed in consultation with and approved by CDFW before construction begins. The Special-Status Plant Mitigation Plan shall include at least the following provisions:

- Before Project disturbance, identification of restoration areas within the Project area for seeding and/or transplanting of special-status plants, with data collection to determine appropriate microsites
- Before Project disturbance, measurement of existing special-status plant populations within the Project area for percent cover and density and establishment of these characteristics as the minimum success criteria for the species' cover and density as a result of restoration/enhancement.
- A plan and protocols for appropriate and ecologically sensitive collection and storage of special-status plant seeds, rhizomes, and plants from the Project area.
- Transplanting and seeding protocols for special-status plants.
- Adaptive management measures and a remedial planting plan.
- Revegetation and/or enhancement monitoring and reporting for at least 3 years.

Impacts on California Tiger Salamander (*Ambystoma californiense*)

Phase 1 – San Joaquins Relocated Station

Construction Impacts

California tiger salamanders could potentially occur in seasonal wetland (SW)-4 (Figure 3.4-2) which is a long, narrow anthropogenic seasonal wetland at the toe of the railroad embankment that is beneath the proposed Relocated Station platform, and in other seasonal wetlands in the Project Footprint. As described in the Biological Resources Technical Memo (AECOM 2020), aquatic habitat with documented presence of breeding California tiger salamanders occurs approximately 800 feet south of Avenue 12. This aquatic habitat is approximately 0.5 mile south of the most southern seasonal wetland (SW-1) documented in the BNSF Corridor, and approximately 1.1 miles from the Relocated Station. Aestivating California tiger salamanders could therefore potentially disperse from the breeding habitat and occur in small mammal burrows anywhere within the Project Footprint.

If California tiger salamanders are present in seasonal wetlands or in small mammal burrows in adjacent uplands within the Project Footprint, direct impacts could include crushing from construction equipment, exposure to accidental spills, (including contaminants or pollutants), changes in micro/local hydrology, and displacement due to habitat modification. Direct impacts could also include the permanent conversion of occupied habitat. Indirect impacts may result from grading and stockpiling soils upslope of the pools, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality or reduced reproductive success of California tiger salamanders. These direct and indirect impacts would be significant.

These potential impacts can be reduced to less than significant with implementation of mitigation measures MM-BIO-1 through Bio MM-BIO-14 and with implementation of MM-BIO-17 and MM-BIO-18, which require a preconstruction survey for California tiger salamanders and implementation of compensatory mitigation if warranted. MM-BIO-17 would reduce construction impacts on California tiger salamander to less than significant by providing compensatory mitigation for loss of aquatic and/or upland California tiger salamander habitat at a 1:1 ratio. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of the California tiger salamanders would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the Madera Station and the San Joaquins train service and increased vehicular traffic at the Madera Station are not expected to have adverse effects on California tiger salamanders that differ substantially from conditions that would be present after the station is constructed. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of the California tiger salamanders would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

The vernal pool in the northern portion of the Project Footprint (Figure 3.4-2) could potentially provide breeding habitat for California tiger salamanders. As described in the Biological Resources Technical Memo (AECOM 2020), there are considerably larger pools in the same field that are 0.5 mile or less to the northeast and more pools to the east of the railroad tracks. Aestivating California tiger salamanders could therefore potentially occur in small mammal burrows around this vernal pool or across most of the Project Footprint if they migrate between wetlands.

If California tiger salamanders are present in the vernal pool or in small mammal burrows in adjacent uplands within the Project Footprint, direct impacts would include crushing from construction equipment, exposure to accidental spills, including contaminants or pollutants,

changes in micro/local hydrology, and displacement due to habitat modification. Direct impacts would also include the permanent conversion of occupied habitat. Indirect impacts may result from grading and stockpiling soils upslope of the pools, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality or reduced reproductive success of California tiger salamanders. These direct and indirect impacts would be significant.

These potential impacts would be reduced to a less-than-significant level with implementation of mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-17 and MM-BIO-18, which require a preconstruction survey for California tiger salamanders and implementation of compensatory mitigation if warranted. MM-BIO-18 would reduce construction impacts on California tiger salamander to less than significant by providing compensatory mitigation for loss of aquatic and/or upland California tiger salamander habitat at a 1:1 ratio. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of the California tiger salamanders would be less than significant with mitigation incorporated.

Operational Impacts

Impacts of future operation of the HSR service at the Relocated Station, including increased vehicular traffic to/from the Relocated Station, are not expected to have adverse effects on California tiger salamanders that differ substantially from conditions that would be present after the station is constructed. Any aquatic or upland habitat within the Project Footprint that was flagged, avoided, and undeveloped and that could potentially support California tiger salamander, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of the California tiger salamanders are therefore considered less than significant.

Mitigation for California Tiger Salamander

- **MM-BIO-17: Conduct a Site Assessment for California Tiger Salamander and Implement Avoidance and Minimization Measures.** Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment of the Project area vernal pool and seasonal wetlands and adjacent uplands 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 2003). If the site assessment determines that there is a likelihood that the California tiger salamander may occur in wetlands or in upland habitat within the Project Footprint, the USFWS and CDFW shall be consulted, and field surveys shall be conducted to confirm presence or absence of California tiger salamanders, as required in the USFWS 2003

guidance. If aquatic and upland habitat for California tiger salamanders are identified during the survey, these areas shall be mapped and flagged during preconstruction surveys. Protection shall involve establishment of environmentally restricted areas (ERAs) and environmentally sensitive areas to protect aquatic and/or upland habitat for California tiger salamander within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on California tiger salamander habitat cannot be avoided by protecting the habitat within an environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-18.

- **MM-BIO-18: Secure Incidental Take Permits for California Tiger Salamander from CDFW and USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.** If the site assessment and surveys described in MM-BIO-17 establish that California tiger salamander are likely to be present in aquatic or upland habitat in the Project Footprint, and that impacts on aquatic and upland habitat for California tiger salamanders cannot be avoided during construction, ITPs shall be secured from the USFWS and CDFW before construction. All avoidance, minimization and mitigation measures specified in the USFWS and CDFW ITPs shall be implemented during construction. Mitigation shall include purchase of credits at an approved California tiger salamander mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.

Impacts on Western Spadefoot (*Spea hammondi*)

Phase 1 – San Joaquin Relocated Station

Construction Impacts

SW-4 is located directly underneath the proposed platform for the Relocated Station and described above in the section for California tiger salamander, could also provide breeding habitat for western spadefoot. Small mammal burrows in upland habitat in the Project Footprint could provide refugia for aestivating spadefoots. This species was documented as recently as 2018 at Avenue 12 within the area covered by the Project Footprint and potentially could occur in wetlands and upland habitat throughout the Project area.

If western spadefoots are present in seasonal wetlands or in small mammal burrows in adjacent uplands within the Project Footprint, direct impacts would include crushing from construction equipment, exposure to accidental spills, including contaminants or pollutants, changes in micro/local hydrology, and displacement due to habitat modification. Direct impacts would also include the permanent conversion of occupied habitat. Indirect impacts may result from grading and stockpiling soils upslope of the pools, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality or reduced reproductive success of western spadefoots. These direct and indirect impacts would be

significant because this species is of limited distribution and increasingly imperiled in the state and in Madera County (USFWS 2005).

These potential impacts can be reduced to less than significant with implementation of mitigation measures MM-BIO-1 through MM-BIO-14, MM-BIO-19, and MM-BIO-20. These measures involve conducting a habitat assessment, implementing avoidance and minimization measures to protect western spadefoot habitat, and securing compensatory mitigation at an approved mitigation bank at a 1:1 ratio if the avoidance and minimization measures cannot be implemented. The compensatory mitigation would reduce impacts to less than significant by offsetting the loss of aquatic and/or upland western spadefoot habitat. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of western spadefoots would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the San Joaquins at the Relocated Station, including increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on western spadefoot that differ substantially from conditions that would be present after the station is constructed. Any aquatic or upland habitat within the Project Footprint that was flagged, avoided, and undeveloped and that could potentially support western spadefoot, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of western spadefoots are therefore considered less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

The vernal pool in the northern portion of the Project Footprint could potentially provide breeding habitat for western spadefoot (Figure 3.4-2). This species was documented as recently as 2018 at Avenue 12 within the Project Footprint and potentially could occur in wetlands and upland habitat throughout the Project Footprint. If western spadefoot individuals are present in the vernal pool or in seasonal wetlands in the Project Footprint, or in small mammal burrows in adjacent uplands within the Project Footprint, direct impacts could include crushing from construction equipment, exposure to accidental spills, including contaminants or pollutants, changes in micro/local hydrology, and displacement due to habitat modification. Direct impacts would also include the permanent conversion of occupied habitat. Indirect impacts may result from grading and stockpiling soils upslope of the pools, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality or reduced reproductive success of western spadefoots. These direct

and indirect impacts would be significant because this species is of limited distribution and increasingly imperiled in the state and in Madera County (USFWS 2005).

These potential impacts can be reduced to less than significant with implementation of the mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-19 and MM-BIO-20, which requires a preconstruction site assessment for western spadefoot and implementation of compensatory mitigation if warranted. MM-BIO-20 would reduce construction impacts on western spadefoot to less than significant by providing compensatory mitigation to offset the loss of aquatic and/or upland western spadefoot habitat at a 1:1 ratio. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of western spadefoots would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the HSR portion of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on western spadefoot that differ substantially from conditions that would be present after the station is constructed. Any aquatic or upland habitat within the Project Footprint that was flagged, avoided, and undeveloped and that could potentially support western spadefoot, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of western spadefoots are therefore considered less than significant.

Mitigation for Western Spadefoot

- **MM-BIO-19: Conduct a Site Assessment for Western Spadefoot and Implement Avoidance and Minimization Measures.** Prior to ground-disturbing activities, the Project Biologist shall conduct a site assessment for western spadefoot. If the site assessment determines that there is a likelihood that western spadefoot may occur in wetlands or upland habitat within the Project Footprint, aquatic and upland habitat for this species shall be mapped and flagged during the surveys. Protection shall involve establishment of ERAs and environmentally sensitive areas to protect aquatic and/or upland habitat for western spadefoot within and near the Project Footprint, as described above in MM-BIO-7. If direct and indirect impacts on western spadefoot habitat cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-20.
- **MM-BIO-20: Secure Compensatory Mitigation to Offset Impacts on Western Spadefoot.** If the surveys described in MM-BIO-19 determine that western

spadefoot are present in aquatic or upland habitat in the Project Footprint, mitigation credits shall be purchased at an approved mitigation bank for western spadefoot at a minimum 1:1 ratio.

Impacts on Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Vernal pool fairy shrimp have a low potential to occur in the anthropogenic SW-1 through SW-6 within the Project Footprint and have moderate potential to occur in the vernal pool at the northern portion of the Project area. As discussed above in the section for California tiger salamander, SW-4 (Figure 3.4-2) is located directly underneath the proposed platform of the Relocated Station.

If vernal pool fairy shrimp are present in SW-4, direct impacts would include crushing of adults, eggs or cysts from construction equipment. The vernal pool at the northern end of the Project area (Figure 3.4-2) would not be directly impacted by construction of the Madera Station, nor would the other five seasonal wetlands in the Project Footprint, but construction activities within the watershed of vernal pools or wetlands could adversely affect vernal pool fairy shrimp and other vernal pool invertebrates. These potential indirect disturbances include changes in the retention/infiltration of runoff to the pool and other changes in micro/local hydrology, and exposure to accidental spills, including contaminants or pollutants. Indirect impacts could also result from grading and stockpiling soils upslope of the wetland, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality of vernal pool invertebrates. These direct and indirect impacts on vernal pool invertebrates would be significant.

These potential impacts would be reduced to a less-than-significant level with implementation of mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-21 and MM-BIO-22, which require a preconstruction site assessment for vernal pool fairy shrimp and flagging or marking environmentally sensitive areas and ERAs. MM-BIO-22 would reduce construction impacts on vernal pool fairy shrimp to less than significant by providing compensatory mitigation for loss of vernal pool invertebrates at a 1:1 ratio. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of vernal pool fairy shrimp would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the San Joaquins at the Relocated Station, including increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on vernal pool invertebrates that differ substantially from conditions that would be present after the station is constructed. Any aquatic habitat within the Project Footprint that was

flagged, avoided, and undeveloped and that could potentially support vernal pool fairy shrimp, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of vernal pool fairy shrimp are therefore considered less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Vernal pool fairy shrimp have moderate potential to occur in the vernal pool at the northern portion of the Project Footprint and could also occur in the six seasonal wetlands within the Project Footprint (Attachment A, Figure 4 in Bio Tech Memo). While the vernal pool is within the Project Footprint, it is approximately 10 feet east of the HSR's track construction Footprint.

If construction activities occurred in the vernal pool direct impacts would include crushing of adults, eggs or cysts from construction equipment. Construction activities within the watershed of vernal pools or wetlands can also adversely affect vernal pool fairy shrimp and other vernal pool invertebrates even if direct construction impacts do not occur. These indirect disturbances include changes in the retention/infiltration of runoff to the pool and other changes in micro/local hydrology, and exposure to accidental spills, including contaminants or pollutants. Indirect impacts may also result from grading and stockpiling soils upslope of the wetland, leading to sediment transfer into the water column. Chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks could contaminate the water column, resulting in mortality of vernal pool invertebrates. These direct and indirect impacts on vernal pool invertebrates would be significant.

These potential impacts can be reduced to less than significant with implementation of the mitigation measures MM-BIO-1 through MM-BIO-14 and with implementation of MM-BIO-21 and MM-BIO-22, which requires a preconstruction site assessment for vernal pool invertebrates flagging or marking environmentally sensitive areas and ERAs. MM-BIO-22 would reduce construction impacts on vernal pool fairy shrimp to less than significant by providing compensatory mitigation for loss of vernal pool invertebrates at a 1:1 ratio. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of vernal pool fairy shrimp would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the HSR portion of the Relocated Station, including HSR service and potentially the San Joaquins service, along with and increased vehicular traffic to and from Relocated Station are not expected to have adverse effects on vernal pool invertebrates that differ substantially from conditions that would be present after the station is constructed.

Any aquatic habitat within the Project Footprint that was flagged, avoided, and undeveloped and that could potentially support vernal pool fairy shrimp, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Operational impacts of the HSR service on vernal pool invertebrates are therefore considered less than significant. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of vernal pool fairy shrimp are therefore considered less than significant.

Mitigation for Vernal Pool Fairy Shrimp and Other Vernal Pool Invertebrates

- **MM-BIO-21: Establish Environmentally Sensitive Areas and ERAs around Seasonal Wetlands and the Vernal Pool to Protect Vernal Pool Fairy Shrimp and Other Vernal Pool Invertebrates.** Prior to ground-disturbing activities, the Project Biologist and the Contractor Biologist shall establish ERAs and environmentally sensitive areas to protect aquatic habitat (the vernal pool and six seasonal wetlands) for vernal pool invertebrates. If direct and indirect impacts on vernal pool fairy shrimp and other special-status vernal pool invertebrates cannot be avoided by protecting the habitat within environmentally sensitive areas and ERAs, mitigation shall be accomplished as described below in MM-BIO-22.
- **MM-BIO-22: Secure Incidental Take Permit for Vernal Pool Fairy Shrimp from USFWS and Implement Compensatory Mitigation as Required by Permit Conditions.** If direct and indirect impacts on vernal pool fairy shrimp cannot be avoided with establishment and maintenance of environmentally sensitive areas and ERAs, an ITP shall be secured from the USFWS before construction. All avoidance, minimization and mitigation measures specified in the ITPs shall be implemented during construction. Mitigation shall include purchasing credits at an approved vernal pool fairy shrimp mitigation bank at a minimum 1:1 ratio, or at a higher ratio if specified in the ITP conditions.

Impacts on Swainson's Hawk (*Buteo swainsoni*)

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Fallow agricultural grain fields and row crops within the Project Footprint provide foraging habitat for Swainson's hawk, while scattered individual Goodding's willow (*Salix gooddingii*) and Fremont cottonwood (*Populus fremontii*) trees, upstream and downstream of the Project area in Cottonwood Creek provide nesting habitat. A California Natural Diversity Database (CNDDB) record documents multiple Swainson's hawk nests in 2016 and 2017 immediately southwest and downstream of the Project Footprint in Cottonwood Creek.

The minor loss of foraging habitat due to construction of the Relocated Station is less than significant because the area is primarily planted as orchard and low-quality foraging habitat is limited to the margins of roads, but if construction of the Relocated Station or HSR improvements occurred near an active Swainson's hawk nest, the noise and disturbance could result in nest abandonment or decreased reproductive success. This impact would be significant.

Potential impacts on nesting Swainson's hawk can be reduced to less than significant with the implementation of mitigation measure MM-BIO-23. This measure calls for conducting pre-construction surveys for Swainson's hawk and establishing non-disturbance buffers to protect nests during construction. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of Swainson's hawk would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on Swainson's hawks that differ substantially from conditions that would be present after the station is constructed. The nesting habitat in Cottonwood Creek that is upstream and downstream of the Project Footprint and any foraging habitat that was avoided and undeveloped and that could potentially be used by Swainson's hawk, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of Swainson's hawk are therefore considered less than significant.

Mitigation for Swainson's Hawk

- **MM-BIO-23: Conduct Pre-Construction Surveys for Swainson's Hawk and Implement Protective Buffers.** The Project Biologist shall conduct preconstruction surveys for Swainson's hawks during the nesting season (March 1 through August 21) within the Project Footprint and of all suitable nesting habitat within line of sight of construction activities within a 0.5-mile radius of the Project Footprint. The surveys shall be conducted no less than 14 days and no more than 30 days before the beginning of construction. Guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (SHTAC 2000) shall be followed for surveys for Swainson's hawk. This requires that surveys be conducted for at least the two survey periods prior to the start of construction. The survey periods are as follows:
 - Period I. January-March 20,
 - Period II. March 20 to April 5,

- Period III. April 5 to April 20,
- Period IV. April 21 to June 10 (monitoring known nests only),
- Period V. June 10 to July 30 (post-fledging).

If active Swainson's hawk or other raptor nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting raptors and their young. No Project activity shall commence within the buffer areas until the Project Biologist has determined in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.

Monitoring of the nest by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or Project Biological Monitor.

Burrowing Owl (*Athene cunicularia*)

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Burrowing owls could forage and nest in and near the Project Footprint. This species often occurs in highly modified landscapes and could nest in ground squirrel burrows adjacent to the existing railroad tracks or in small mammal burrows in ruderal grassland habitat adjacent to agricultural fields.

Construction activities related to the Relocated Station and its interim access road, and the HSR portion of the station and its station siding track and the Phase 2 access road could directly harm burrowing owl nests by crushing burrows, or the noise and disturbance associated with construction could indirectly cause nest abandonment. The impact would be significant, but this potential impact can be reduced to less than significant with implementation of mitigation measure MM-BIO-24. This measure calls for conducting pre-construction surveys for burrowing owls, establishing non-disturbance buffers to protect nesting burrowing owls during construction, and potentially exclusion and relocation plans if nesting sites cannot be avoided. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of burrowing owl nests would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station are not expected to have effects on burrowing owls that differ substantially from conditions that would be present after the station is constructed. Any nesting habitat within the Project Footprint that was avoided and undeveloped and that could potentially be used by burrowing owl, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts related to a substantial effect, either directly or through habitat modifications of burrowing owl nests are therefore considered less than significant.

Mitigation for Burrowing Owl

- **MM-BIO-24: Conduct Pre-Construction Surveys for Burrowing Owls and Implement Protective Buffers.** The Project Biologist shall conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the Project Footprint. Surveys shall be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012) which requires that four survey visits be conducted. Surveys conducted during the breeding season (February 1 to August 31) must include one visit between February 15 and April 15 and a minimum of three survey visits spread three weeks apart between April 15 and July 15. Four survey visits spread evenly through the nonbreeding season (September 1 through January 31) are required for nonbreeding surveys. If no occupied burrows are found, no further avoidance and minimization measures shall be required. Surveys for burrowing owl shall be conducted by walking transects with centerlines spaced no more than 65 feet apart to search the ground for burrows.

If an active burrow is found during the nonbreeding season, the Project applicant shall consult with CDFW regarding protection buffers to be established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan shall be developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). Owls shall be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If an active burrow is found during the breeding season, occupied burrows shall not be disturbed and shall be provided with a 150- to 1,500-foot protective buffer unless the

Project Biologist or Project Biological Monitor verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150- to 1,500-feet) shall depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (2012:9). The size of the buffer may be reduced if the Project Biologist or Project Biological Monitor, in consultation with CDFW, determines burrowing owls would not be adversely affected by the proposed activities. If a smaller than recommended buffer is used, a scientifically-rigorous monitoring program approved by CDFW shall be implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls shall be relocated outside the impact area if their burrows cannot be avoided or adequately protected with a no-disturbance buffer. Relocation shall follow a burrowing owl exclusion and relocation plan developed according to guidance provided in Appendix E of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). No burrowing owls shall be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

Impacts on Migratory Birds

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Vegetation removal, grading, and other Project construction activities associated with the Relocated Station and its interim access road, and the HSR portion of the station and its station siding tracks and Phase 2 access road could result in mortality of individuals and nest abandonment of migratory birds. The nests of most bird species found in California are protected by the MBTA and California Fish and Game Code 3503. If vegetation is removed during the nesting bird season (generally late February through early September), mortality of eggs and chicks of tree/shrub nesting and ground nesting birds could result if an active nest were present. Project construction could also disturb active nests near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. The potential loss of an active nest or mortality of chicks and eggs of any special-status or protected bird species would be a significant impact. This potential impact would be reduced to a less-than-significant level with implementation of mitigation measure MM-BIO-25. This measure calls for conducting pre-construction surveys nesting bird surveys and establishing non-disturbance buffers to protect nesting birds during construction. Therefore, construction impacts related to a substantial effect, either directly or through habitat modifications of migratory birds would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station,

are not expected to have adverse effects on migratory birds that differ substantially from conditions that would be present after Phase 2 station is constructed. Any nesting habitat within the Project Footprint that was avoided and undeveloped and that could potentially support migratory birds, would remain undeveloped and unaffected by future operations. Areas of track and around the station would be fenced and off limits to the public, and no other infrastructure or operational activities would occur in areas that were left undeveloped. Therefore, operational impacts, either directly or through habitat modifications of migratory birds (including nests), are therefore considered less than significant.

Mitigation for Nesting Migratory Birds

- **MM-BIO-25: Conduct Pre-Construction Surveys for Nesting Bird Species and Establish Protective Buffers.** If construction activities occur during the nesting bird season (February 1 – August 31), a focused survey to identify protected bird nests shall be conducted by the Project Biologist or the Project Biological Monitor before construction begins. Surveys shall include all areas of suitable nesting habitat within 300 feet of the Project Footprint. If no active nests are found, no further avoidance and minimization measures shall be required.

If active nests are found, appropriate buffers shall be established to avoid impacts. No Project activity shall commence within the buffer area until the Project Biologist or Project Biological Monitor, in consultation with CDFW, confirms the nest is no longer active. Depending on the species of bird and its sensitivity, 50 to 300-feet shall likely to be needed to avoid indirect Project impacts on nesting activities. The size of the buffers may be reduced in consultation with CDFW if the Project Biologist or Project Biological Monitor determines that Project activity within a reduced buffer shall not be likely to adversely affect the nest.

Monitoring of active nests by the Project Biologist or Project Biological Monitor during construction activities may be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer shall remain in place until the chicks have fledged or as otherwise determined by the Project Biologist or the Project Biological Monitor.

3.4.2. Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS?

Determination: LESS THAN SIGNIFICANT IMPACTS WITH MITIGATIONS INCORPORATED

Phase 1 – San Joaquins Relocated Station

Construction Impacts

The construction of the Relocated Station would not result in any impacts to riparian habitat because no such habitat exists within the Project Footprint. The new HSR station siding track would be constructed on the existing span over Cottonwood Creek, but the closest riparian woodland habitat is 100 to 150 feet downstream in the channel from the Project Footprint and therefore would not be impacted. A vernal pool wetland at north end of the Project Footprint (Figure 3.4-2) is considered a sensitive natural community and classified as a Northern Claypan Vernal Pool (Sawyer and Keeler-Wolf 1995) or Fremont's goldfields–Downingia vernal pools (CDFW 2019 and CNPS 2020b) but this vernal pool would not be affected by the Relocated Station construction. As discussed below, the anthropogenic seasonal wetlands (SW-1 through SW-6) that would be affected by construction of the Relocated Station are not considered a sensitive natural community or jurisdictional waters of the United States. Therefore, no construction impacts would occur related to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS.

Operational Impacts

Future operations of the Relocated Station and the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on riparian habitat or sensitive natural communities that differ substantially from conditions that would be present after the station is constructed. The riparian habitat in Cottonwood Creek that is upstream and downstream of the Project Footprint would remain undeveloped and unaffected by future operations and no other riparian or sensitive natural community would be affected the construction of the Relocated Station. Therefore, no operational impacts would occur related to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

The HSR Improvements would not result in any impacts to riparian habitat because no such habitat exists within the Project Footprint. However, a vernal pool wetland at north end of the Project Footprint (Figure 3.4-2) is considered a sensitive natural community. It is classified as a Northern Claypan Vernal Pool (Sawyer and Keeler-Wolf 1995) or Fremont's goldfields–Downingia vernal pools (CDFW 2019 and CNPS 2020b). Construction activities

associated with Phase 2 includes building the new HSR station siding track through northern section of the Project Footprint. The track alignment would be along the west edge of the vernal pool, and a border fence would be constructed within or along the east edge. Excavating, digging, and heavy equipment working at this location could degrade and destroy the pool, which would result in permanent direct impacts to a sensitive natural community, and the permanent loss of plant and wildlife species, hydrological functions, and possibly the hardpan soil layer. This impact on a sensitive natural community would be significant.

Mitigation Measure MM-BIO-26 calls for a delineation of the extent of the vernal pool in the Project Footprint and requires compensatory mitigation for permanent impacts to this sensitive natural community. If direct impacts to protected wetlands cannot be avoided by protecting the occurrences within an environmentally sensitive areas or an ERA, as described in mitigation measures MM-BIO-17, MM-BIO-19 and MM-BIO-21 for special-status vernal pool species, mitigation shall be accomplished by purchasing credits from an existing mitigation bank that provides habitat for vernal pool wetlands. Mitigation shall be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results of the preconstruction plan surveys). Implementing these mitigation measures would reduce construction impacts on protected wetlands to less than significant by protecting the vernal pool wetland in an ERA during construction, or by implementing compensatory mitigation to offset impacts.

Together, implementation of MM-BIO-17, MM-BIO-19, MM-BIO-21, and MM-BIO-26 would reduce impacts on this vernal pool to less than significant by protecting the feature in an environmentally sensitive area and ERA during construction, or by implementing compensatory mitigation to offset impacts on the sensitive natural community. Therefore, construction impacts related to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS would be less than significant with mitigation incorporated.

Operational Impacts

Future operations of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station, are not expected to have adverse effects on riparian habitat or sensitive natural communities that differ substantially from conditions that would be present after Phase 2 of the station is constructed. Therefore, operational impacts related to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS are considered less than significant.

Mitigation for Riparian Habitat or Other Sensitive Natural Community

- Refer to MM-BIO-17, MM-BIO-19, MM-BIO-21, and MM-BIO-26 for measures that mitigate potential adverse effects to riparian habitat and/or sensitive natural communities.

3.4.3. Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Determination: LESS THAN SIGNIFICANT IMPACTS WITH MITIGATIONS INCORPORATED

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction of the Relocated Station would result in impacts on SW-4 that will be filled to construct the Relocated Station. However, the anthropogenic seasonal wetlands in the Project Footprint are isolated features along the west side of the BNSF Corridor tracks; they are considered non-jurisdictional under Section 404 of CWA and, therefore, not federally protected. The vernal pool at the northern end of the Project Footprint and Cottonwood Creek in the northern portion of the Project Footprint are potentially subject to U.S. Army Corp of Engineers (USACE) jurisdiction under Section 404 of the CWA. However, the Relocated Station construction would not extend far enough north to affect either the vernal pool or Cottonwood Creek.

Therefore, no construction impacts would occur related to a substantial adverse effect on federal or state protected wetlands through direct removal, filling, hydrological interruption, or other means.

Operational Impacts

Impacts of future operation of the Relocated Station and the San Joaquins train service and increased vehicular traffic to and from the Relocated Station are not expected to have adverse effects on federal or state-protected wetlands because the only protected wetlands within the Project Footprint occur farther north than the construction associated with the Relocated Station. Therefore, no operational impacts would occur related to a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of a new elevated bridge over Cottonwood Creek, parallel to and between the existing HSR and BNSF crossings, would be necessary to accommodate the HSR station siding track. Construction activities associated with Phase 2 also includes building the new

HSR track through northern section of the Project Footprint. The track alignment would be along the west edge of the single vernal pool, and a fence would be constructed within or along the east edge of the pool. Excavating, digging, and heavy equipment working within Cottonwood Creek would result in temporary and permanent impacts to non-wetland Waters of the U.S.; similar construction activity at the vernal pool location could degrade and destroy the pool, which would result in permanent direct impacts to a federally-protected wetland, and permanent hydrological alterations could result in the loss of this feature entirely. The impacts to Cottonwood Creek and the vernal pool would be a significant impact.

If direct impacts to these protected features cannot be avoided by protecting them within an environmentally sensitive areas or an ERA, as described in MM-BIO-17, MM-BIO-19 and MM-BIO-21, mitigation shall be accomplished by purchasing credits from existing mitigation banks that provide credits for vernal pool wetlands and, if needed, for other Waters of the U.S.

Mitigation shall be at least 1:1 for the actual impact (calculated by area per as-built construction drawings and the results of the preconstruction plan surveys). Implementing these mitigation measures would reduce construction impacts on protected wetlands and Waters of the U.S. to less than significant by protecting the creek channel and the vernal pool wetland in an ERA during construction, or by implementing compensatory mitigation to offset impacts. Therefore, construction impacts related to a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means would be less than significant with mitigation incorporated.

Operational Impacts

Impacts of future operation of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic at the Relocated Station are not expected to have adverse effects on federally protected wetlands that differ substantially from conditions that would be present after the station is constructed.

Operational impacts of the CAHSR service on federally protected wetlands are therefore considered less than significant. Therefore, no operational impacts would occur related to a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

3.4.4. Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

While the CAHSR EIR/EIS (CHSRA and FRA 2012) does not identify Cottonwood Creek as one of the important or major wildlife corridors in the region, it is the only established native resident or migratory wildlife corridor that crosses the Project area. The creek is mapped as an ephemeral or intermittent drainage, so its creek bed is often dry, and the channel from the top of bank on each side, including the upland/riparian vegetation, is 250-feet wide. These conditions are suitable for free-roaming wildlife to utilize the channel to migrate, and the existing BNSF and HSR track crossings are already in place and elevated over the channel, so there is no barrier to movement. The construction of a new elevated bridge over Cottonwood Creek, parallel to and between the existing HSR and BNSF crossings, would be necessary to accommodate the HSR station siding track would occur. Activities associated with the construction of the bridge have the potential to temporarily disrupt wildlife from utilizing the channel during the hours of construction. Implementation of Mitigation Measures MM-BIO-1 through MM-BIO-14, as described above, would ensure that wildlife would still be able to utilize the channel as a viable movement corridor, by delineating and marking the creek as an environmentally sensitive area, minimizing work in the channel as much as possible by restricting work during certain times during the day and night, and by training workers on the mitigation measures designed to protect species using this corridor.

Direct impacts to this wildlife corridor would be temporary because the new completed crossing would be elevated and allow unimpeded wildlife movement. However, indirect impacts could occur from construction activities such as lighting, noise, motion, and other startle effects if these activities were to occur in the vicinity of Cottonwood Creek, and they could result in indirect and temporary disruption of wildlife movement. Other temporary but direct impacts could occur across the entire Project area from the placement of barriers during construction which would affect the ability of wildlife to move across the Project area and potentially move off the Project area after being displaced by construction activities such as digging or grading with heavy equipment. Temporary direct impacts could also potentially affect wildlife in adjacent habitats by interfering with movement patterns or by causing wildlife to temporarily avoid areas adjacent to the construction areas. These impacts would be temporary and minor, given that the Project area is not a major movement corridor for wildlife, and are therefore considered less than significant.

The Project area does not provide a breeding or nursery site for native wildlife; therefore, construction and operational impacts would not result in impacts to a nursery site for

wildlife. Therefore, construction impacts that would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites would be less than significant.

Operational Impacts

Impacts of future operation of the Relocated Station, including HSR service and potentially the San Joaquins service, along with increased vehicular traffic to and from the Relocated Station are not expected to have effects on wildlife movement that differ substantially from conditions that would be present after the station is constructed. Therefore, no operational impacts would occur that would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

3.4.5. Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Determination: LESS THAN SIGNIFICANT WITH MITIGATION

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

As described below, construction and operation of the Project would not conflict with any known local policies or ordinances and would be consistent with provisions of the Madera County General Plan for protecting wetland communities and related riparian areas (Goal 5.D), fish and wildlife habitat (Goal 5.E) and vegetation (Goal 5.F). The following policies within these goals apply to this Project:

- **Policy 5.D.2** – The County shall require new development to mitigate wetland loss in both regulated and non-regulated wetlands through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that can provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.
- **Policy 5.E.10** – Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either

identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible.

- **Policy 5.F.2** – The County shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permit approval or for Project mitigation.
- **Policy 5.F.5** – The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.

Construction and operation of the Project, including future operations, and the general and species-specific mitigation measures that would be implemented for the Project are consistent with these goals and policies. Therefore, impacts would be less than significant with mitigation.

3.4.6. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

No draft or adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans exist for Madera County. Therefore, no construction or operational impacts would occur that would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

This section is based on a cultural resources technical document prepared by AECOM (Beck 2020). Cultural resources include historic buildings and structures, historic districts, historic sites, prehistoric and historic archaeological sites, and other prehistoric and historic objects and artifacts.⁵ Historical resource is a CEQA term that includes both archaeological and built environment cultural resources. For the purposes of this Initial Study, the term “historic-age built environment cultural resource” refers to buildings, structures, objects, sites, landscapes, and historic districts that are 45 years and older. The term is used to distinguish such resources from archaeological resources. Archaeological resources refer to material remains of past human life or activities that are of archaeological interest and are typically subsurface deposits. The Regulatory Settings in Appendix B Cultural Resources Technical Memorandum further defines historical resources in relation to their recognition under CEQA.

Desktop-Level Review

Cultural resources specialists conducted desktop-level reviews of the Project Footprint through a record search, literature review, and Native American outreach efforts. Given the current pandemic due to the Coronavirus and California Governor Newsom’s Executive Order N-54-20 to shelter in place, a pedestrian survey was not performed.

Archaeological Results

No previously recorded resources were identified in the Project Footprint. The search of the California Native American Heritage Commission’s (NAHC) Sacred Lands File was negative. Native American outreach resulted in no comments of concern regarding the impacts to cultural or tribal cultural resources as a result of the Project. Although, a pedestrian survey was not conducted due to the Governor Newsom’s Executive Order N-54-20 to shelter in place, the possibility of encountering an

⁵ Impacts on paleontological resources, such as vertebrate, invertebrate, or plant fossils, are discussed in Section VI, Geology and Soils.

archaeological resource on the surface of an agricultural field is low due to the years of ground disturbance. Nevertheless, based on the geoarchaeological sensitivity assessment of the area from just south of the proposed Relocated Station platform and approximately mid-way through the HSR platform, to the northern extent of the Project Footprint beyond Cottonwood Creek has increased potential for encountering buried archaeological sites. The types of soils vary throughout this area but are considered moderate or very high in their sensitivity for these types of resources.

Built Environment Results

Only one previously evaluated built environment resource is adjacent to the Project Footprint, a segment of the BNSF Corridor (formerly Atchison, Topeka and Santa Fe Railway [P-20-002662]). This adjacent segment of the BNSF Corridor was previously inventoried and evaluated in 2009 and 2016 (CRM Tech 2009; HDR EOC Inc. 2016). Both evaluations concluded the railroad was historically significant under National Register of Historic Places (NRHP) Criterion A and California Register of Historic Resources (CRHR) Criterion 1 for its importance as the second transcontinental railroad route constructed through the Central Valley that resulted in breaking up the monopoly of the Southern Pacific Railroad in California. However, both evaluations concluded the resource lacked sufficient historic integrity to physically convey its significance. Therefore, both evaluations concluded P-20-002662 was not eligible for listing in the NRHP or CRHR and does not appear to be a historical resource for the purposes of CEQA.

There are no other historic-age (45 years and older) built environment properties within the Project Footprint that would be potentially adversely affected by the Project. There is one non-historic age property in the Project Footprint along the south side of Avenue 12 that is a light-manufacturing facility at 31266 Avenue 12, constructed between 1985-98 (Historicaerials.com 2020). This property is less than 45 years old and does not appear to have exceptional significance that would warrant potential evaluation for the CRHR or NRHP.

3.5.1. Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Determination: NO IMPACTS

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

As discussed in the Cultural Resources Technical Memorandum, the only historic-age cultural resource adjacent to the Project Footprint, the BNSF Corridor, lacks historic integrity and is not a historical resource. There are no other built environment historical resources within the Project Footprint for Phase 1 or 2. No historical resources are in the Project Footprint or in the vicinity that would be affected by the Project. Therefore, no construction or operational impacts would occur that would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.

3.5.2. Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Determination: LESS THAN SIGNIFICANT WITH MITIGATIONS INCORPORATED

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Archaeological resources would only be impacted during ground-disturbing construction activities. While no archaeological resources have been previously recorded within the Project Footprint, the area has not been previously studied except for the BNSF Corridor. Due to extenuating circumstances, a pedestrian survey for the Project was not conducted. Despite the majority of the Project Footprint being previously disturbed by extensive grading and plowing activities, the possibility of encountering a significant intact archaeological resource on the surface cannot be completely ruled out. Construction of Phase 1 elements, such as (but not limited to) the Relocated Station platform, the building and canopy foundations, lighting and utilities, and access road and roadway improvements that require grading, excavation, and drilling to greater depths than previously occurred during agricultural operations or previous railroad construction, may encounter previously unknown archaeological resources, which is a potentially-significant impact.

In addition, portions of the Project Footprint have been mapped as having Holocene-age soils, which have an increased potential for encountering buried archaeological sites. Mitigation measures would reduce potential impacts to a less than significant level. Therefore, construction impacts that would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 would be less than significant with mitigation incorporated.

Mitigation Measures

- **MM-CUL-1: Conduct cultural resources awareness training.** Prior to construction (any ground-disturbing activity), the construction contractor shall have a qualified archaeologist implement cultural resources awareness training to all Project personnel (laborers and supervisors) who shall have the potential to encounter cultural resources on the Project. The training shall address the types of cultural resources that may be expected within the Project Footprint, measures to avoid and protect archaeological artifacts and features, the mandatory procedures to follow should potential cultural resources be exposed during construction, as well as the legalities of destroying or removing resources or human remains.

Implementation of mitigation measures MM-CUL-1 and MM-CUL-2 would reduce the likelihood of impacts to previously unidentified cultural resources; however, given the increased potential to encounter buried archaeological resources in the northern portion of the Project Footprint, it is uncertain if these requirements alone

would reduce such impacts to a less than significant level. MM-CUL-3 and MM-CUL-4 are proposed to provide additional protection to potential resources.

- **MM-CUL-2: Implement measures to protect unidentified cultural resources.** During construction (any ground-disturbing activity), should there be an unanticipated archaeological discovery, all work within 50 feet of the resource shall halt, and the Project proponent shall consult a qualified archaeologist to assess the significance of the discovery, according to CEQA Guidelines Section 15064.5, and recommend appropriate measures. Should the discovery include human remains, all parties shall comply with state regulations and guidelines regarding the treatment of human remains, including Health & Safety Code Section 8010 et seq., and Cal. Public Res. Code Section 5097.98, and consult with NAHC, and tribal groups.
- **MM-CUL-3: Preconstruction testing or archaeological monitoring.** Based on the geoarchaeological sensitivity assessment there is an increased potential for encountering buried archaeological sites from approximately just south of the Relocated Station platform and approximately mid-way through the HSR platform, to the northern extent of the Project Footprint beyond Cottonwood Creek; this sensitivity is generally greatest in areas near freshwater. If these areas cannot be avoided by the Project, and Project activities in those areas are sufficient (i.e., deep enough) to potentially encounter buried archaeological resources, then additional actions shall be necessary to mitigate potential impacts to as-yet unidentified buried resources such as subsurface testing in advance of Project construction and/or construction-period monitoring.

A professional archaeologist shall be consulted and testing and/or monitoring plans should be prepared prior to construction activities (i.e., ground disturbance) identifying areas for archaeological investigation or monitoring.

Operational Impacts

Operation of the Relocated Station once constructed would not require disturbance of additional areas inside the Project Footprint. As such, no operational impacts would occur that would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Similar to the Relocated Station, there are no previously recorded archaeological resources, no previous studies of the area, and no current pedestrian survey of the Project Footprint. There are areas of Holocene-age soils with increased potential for encountering buried archaeological sites. Construction of Phase 2 elements, such as (but not limited to) the HSR platform, station siding track, bridge over Cottonwood Creek, the building and canopy

foundations, lighting and utilities, access road and roadway improvements, electrification poles, and the TPSS substation that require grading, excavation, and drilling to greater depths than previously occurred during agricultural operations or previous railroad construction, may encounter previously unknown archaeological resources, which is a potentially significant impact.

Mitigation measures would reduce potential impacts to a less than significant level. Therefore, construction impacts that would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 would be less than significant with mitigation incorporated.

Mitigation Measures

Refer to Mitigation Measures MM-CUL-1 through MM-CUL-3 to mitigate potential impacts to less than significant.

Operational Impacts

Operation of Phase 1 and Phase 2 of the Project once constructed would not require disturbance of additional areas inside the Project Footprint. As such, operational impacts would not occur that would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

3.5.3. Would the Project disturb human remains, including those interred outside of formal cemeteries?

Determination: LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

There are no known archaeological resources or formal cemeteries recorded within the Project Footprint. Although there is no indication that human remains are present, there is always a possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. The disturbance or destruction of human remains would be a potentially significant impact.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health & Safety Code Sections 7050.5 and 7052 and Cal. Public Res. Code Section 5097. Therefore, construction impacts related to the disturbance of human remains, including those interred outside of formal cemeteries would be less than significant with mitigation incorporated.

Mitigation Measure

MM-CUL-4 Comply with state laws relating to Native American remains. In the case of discovery of human remains Health and Safety Code Section 7050.5(b) specifies protocol including stop work and documentation measures. The code requires that in the event of discovery of human remains in any location other than a dedicated cemetery, there must be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county (Madera County) in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Operational Impacts

There are no anticipated impacts to human remains as a result of operation of Phase 1 and Phase 2 of the Project improvements because ground disturbance is not anticipated during operations of the Project. Therefore, no operational impacts would occur related to the disturbance of human remains, including those interred outside of formal cemeteries.

3.6. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.6.1. Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Determination: LESS THAN SIGNIFICANT IMPACTS

Energy use and efficiency are possible indicators of environmental impacts. The actual adverse physical environmental effects of energy use and the efficiency of energy use are detailed throughout this IS/MND in the environmental topic-specific sections. For example, the use of energy for transportation leads to air pollutant emissions, the impacts of which are addressed in Section 3.3 Air Quality. The use of energy for electricity leads to indirect greenhouse gas (GHG) emissions, the impacts of which are addressed in Section 3.8 Greenhouse Gas Emissions. There is no physical environmental effects associated with energy use that are not addressed in the environmental topic-specific sections of this IS/MND.

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction of Phase 1 elements would increase energy consumption for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Transportation energy use during construction would come from the transport and use of construction equipment (off-road), delivery and haul trucks (on-road), and construction employee vehicles (on-road). Construction-related transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. The majority of construction equipment used during site and rail work and construction of structures would be gas or diesel powered. The use of fuel by on-road and off-road vehicles for construction would be temporary and would fluctuate according to the

phase of construction. Fuel use for the construction of the Relocated Station elements would cease upon completion of construction.

Based on the anticipated construction of Phase 1, the temporary nature of construction, and project type, the Project elements would not include unusual characteristics that would necessitate the use of construction equipment that is less energy-efficient than at comparable construction sites. Table 3.6-1 presents the total fuel consumption and associated energy consumption anticipated for proposed construction activities for Phase 1. The information in Table 3.6-1 is based on the CalEEMod emissions calculations for proposed construction activities and application of the U.S. Energy Information Administration's CO₂ emissions coefficients (EIA 2016) to estimate fuel consumption for construction activities.

**Table 3.6-1. Construction Energy Requirements
(Phase 1 – San Joaquin Relocated Station)**

Fuel	Total Gallons (gal)¹	Energy Requirement Per Year (gal/yr) ²	Annual Energy Consumption (MMBtu)
Diesel	90,384	3,013	416
Gasoline	5,811	194	24
Total			440
Notes: ¹ See Appendix E for additional details and calculations. ² Assumed amortization period is 30 years, based on the typically assumed project lifetime, consistent with the GHG analysis in Section 3.8, "Greenhouse Gas Emissions." MMBtu = million British thermal units; gal/year = gallons per year			

In addition, the construction contractor, in accordance with the CARB's requirements, would be required to minimize idling time of construction equipment by shutting equipment off when not in use or reducing the time of idling to five minutes. These required practices limit wasteful and unnecessary energy consumption.

Energy consumption during construction activities would be temporary and relatively short-term, while Phase 1 would operate for many years into the future. The actual environmental effects of energy use and the efficiency of energy use for construction activities leads to criteria pollutant and GHG emissions, the impacts of which are addressed in Sections 3.3 and 3.8, respectively. Therefore, construction impacts related to inefficient, wasteful, or unnecessary consumption of energy resources would be less than significant.

Operational Impacts

Following construction, Phase 1 would have energy consumption associated with the fare machines, information panels, and lighting. The Project would facilitate a reduction in energy demand – Phase 1 would encourage the use of transit by capturing more ridership for the San Joaquin and reducing automobile vehicle miles traveled in the region, allowing the means of achieving goals such as, decreasing reliance on fossil fuels and decreasing

overall per capita energy consumption, identified within Appendix F (Energy Conservation) of the CEQA Guidelines. As noted, transportation is the largest energy-consuming sector in California, and therefore projects that reduce transportation energy demand are particularly important in promoting energy conservation and other objectives embodied in Appendix F of the CEQA Guidelines. While Phase 1 would generate localized trips in the Project Footprint due to passengers traveling to and from the station; however, the Project is not anticipated to result in an overall increase in vehicle trips or increase in fuel consumption. Instead, implementation of the Project elements is anticipated to reduce vehicle miles traveled and the associated energy consumption in the region by capturing more ridership for the San Joaquins than the existing station in Madera Acres. As shown in Table 3.6-2, Phase 1 is anticipated to result in a net reduction in fossil fuel-based transportation fuel associated with the reduction in automobile vehicle miles traveled. Table 3.6-2 presents the energy requirement and transportation fuel-related energy reduction associated with operation of Phase 1.

**Table 3.6-2. Annual Operational Energy Requirements
(Phase 1 – San Joaquins Relocated Station)**

Source	Energy Requirement Per Year ¹	Annual Energy Consumption (MMBtu)
Electricity Consumption	64,588	220
Avoided Diesel Fuel Consumption ²	(800) gal/yr	(110)
Avoided Gasoline Fuel Consumption ²	(96,163) gal/yr	(12,020)
Total Energy Consumption		(11,910)
Notes:		
¹ See Appendix E for additional details and calculations.		
² Fuel savings estimated based on the fleet mix composition for passenger vehicles in Madera County and the net reduction in annual VMT		
MMBtu = million British thermal units; kWh/yr = kilowatt-hours per year; gal/year = gallons per year		

As shown in Table 3.6-2, the annual energy consumption associated with Phase 1 would result in a net reduction of approximately 11,910 MMBtu per year.

In addition, public transportation also provides congestion relief and reduces transportation fuel associated with idling vehicles. Therefore, considering that Phase 1 would relocate the existing station to a site with greater ridership potential, transit connectivity, potential for TOD, and better access to SR-99 and the City of Madera, the Project would not result in potentially significant environmental impact on energy consumption. The Project would also encourage a decrease in reliance on fossil fuels and would reduce regional per-capita energy consumption, consistent with the objectives described in Appendix F of the CEQA Guidelines. Because Phase 1 Project elements do not have unusual design or operational features that would have unusual high energy demand, and because they would reduce energy demand in the largest energy-consuming sector statewide (transportation), operational energy use would not be wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, operational impacts related to the result in potentially

significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

As discussed above for Phase 1, construction of HSR improvements for Phase 2 would also increase energy consumption for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Similar to Phase 1, the use of fuel by on-road and off-road vehicles during construction of HSR improvements would be temporary and would fluctuate according to the phase of construction.

Based on the anticipated phasing of construction of the HSR Improvements, temporary nature of construction, and project type, the Project elements would not include unusual characteristics that would necessitate the use of construction equipment that is less energy-efficient than at comparable construction sites. Table 3.6-3 presents the total fuel consumption and associated energy consumption anticipated for proposed construction activities for Phase 2.

**Table 3.6-3. Construction Energy Requirements
(Phase 2 – HSR Interim Operating Segment Station)**

Fuel	Total Gallons (gal)¹	Energy Requirement Per Year (gal/yr) ²	Annual Energy Consumption (MMBtu)
Diesel	151,216	5,041	696
Gasoline	11,293	376	47
Total			743
Notes:			
¹ See Appendix E for additional details and calculations.			
² Assumed amortization period is 30 years, based on the typically assumed project lifetime, consistent with the GHG analysis in Section 3.8, "Greenhouse Gas Emissions."			
MMBtu = million British thermal units; gal/year = gallons per year			

The construction contractors would also be required, in accordance with the CARB requirements, to minimize idling time of construction equipment by shutting equipment off when not in use or reducing the time of idling to five minutes. These required practices limit wasteful and unnecessary energy consumption.

As described above, energy consumption during construction activities would be temporary and relatively short-term. As such, it is expected that fuel consumption associated with construction of the HSR improvements would not be inefficient, wasteful, or unnecessary due to the future energy savings as described further under Operational Impacts. Therefore, construction impacts related to the result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

Operational Impacts

Following construction, the HSR improvements would also have energy consumption associated with the fare machines, information panels, and lighting. By allowing for HSR stops in Madera in Phase 2, HSR ridership would increase and San Joaquin's ridership would increase further beyond Phase 1. This would lead to the reduction of automobile vehicle miles traveled in the region, allowing the means of achieving goals such as, decreasing reliance on fossil fuels and decreasing overall per capita energy consumption, identified within Appendix F (Energy Conservation) of the CEQA Guidelines. As noted above, transportation is the largest energy-consuming sector in California, and therefore projects that reduce transportation energy demand are particularly important in promoting energy conservation and other objectives embodied in Appendix F of the CEQA Guidelines.

Phase 2 would not cause a change to the HSR mainline tracks alignment or alter operations plans currently being pursued by the CHSRA; thus, it is anticipated that electricity consumption associated with electric HSR train operations would not change substantially with implementation of the Project. Further, the electric HSR trains are planned to run on 100 percent renewable energy and thus, energy consumption would not be inefficient, wasteful, or unnecessary.

Phase 2 will generate localized trips in the Project area due to passengers traveling to and from the station; however, the proposed Project would result in a net reduction in VMT overall and associated vehicle fuel use. As shown in Table 3.6-4, Phase 2 is anticipated to result in a net reduction in fossil fuel-based transportation fuel associated with the reduction in automobile vehicle miles traveled. Similar to Phase 1 elements, Phase 2 includes the installation of light fixtures equipped with LED lights. Table 3.6-4 presents the energy requirement and transportation fuel-related energy reduction associated with operation of the HSR Improvements.

**Table 3.6-4. Operational Energy Requirements
(Phase 2 – HSR Interim Operating Segment Station)**

Source	Energy Requirement Per Year ¹	Annual Energy Consumption (MMBtu)
Electricity Consumption	94,776 kWh/yr	323
Avoided Diesel Fuel Consumption ²	(1,993) gal/yr	(275)
Avoided Gasoline Fuel Consumption ²	(219,794) gal/yr	(27,474)
Total Energy Consumption		(27,426)
Notes:		
¹ See Appendix E for additional details and calculations.		
² Fuel savings estimated based on the fleet mix composition for passenger vehicles in Madera County and the net reduction in annual VMT.		
MMBtu = million British thermal units; kWh/yr = kilowatt-hours per year; gal/year = gallons per year		

As shown in Table 3.6-4, the annual energy consumption associated with Phase 2 would result in a net reduction of approximately 27,426 MMBtu per year during Phase 2 of the Project.

Similar to Phase 1, Phase 2 would promote the use of transit and would have synergistic benefits in attracting new ridership on both services. Thus, the Project would reduce transportation fuel use and the associated regional energy consumption by reducing the amount of VMT, and the number of cars that operate in congested traffic conditions. The Project would not substantially change planned HSR train operations and HSR trains would be electric. Thus, the Project would encourage a decrease in reliance on fossil fuels and would reduce regional per-capita energy consumption, consistent with the objectives described in Appendix F to the CEQA Guidelines. Because Phase 2 does not have unusual design or operational features that would have unusual high energy demand, and because they would reduce energy demand in the largest energy-consuming sector statewide (transportation), operational energy use would not be wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, operational impacts related to potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

3.6.2. Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

As discussed in Section 3.8, Greenhouse Gas Emissions, the 2017 Scoping Plan Update identifies the transportation sustainability sector to be a key area for fossil fuel consumption reduction strategies. CARB calls for encouraging public transit use and increasing public transportation opportunities in efforts to decrease fossil fuel demand from light-duty combustion vehicles (CARB 2017). The 2017 Scoping Plan Update also calls for supporting local and regional governments to develop and implement high speed rail station area plans as means to encourage vibrant communities and reduce VMT. Through relocation of the existing Phase 1 elements and construction of the HSR Improvements in Phase 2, the Project is anticipated to increase ridership and reduce VMT by inducing a mode shift from personal automobiles to public transit. Consistent with the 2018 California State Rail Plan Policy 4, “To Transform to a Clean and Energy Efficient Transportation System,” the Project would reduce VMT in the region (Caltrans 2018). Therefore, the Project would be consistent with the energy conservation measures and strategies identified in the 2017 Scoping Plan Update and 2018 California State Rail Plan.

Additionally, the Madera County Transportation Commission (Madera CTC) 2018 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) includes goals and strategies to improve regional transportation system efficiency and optimize public transportation in efforts to encourage public transportation and reduce vehicle trips and VMT. The Project would be consistent with the energy conservation strategies of the 2018 RTP/SCS as the Project is a means to increase ridership levels by relocating the existing station to a station site with greater ridership potential and transit connectivity.

As such, because the Project would increase ridership, reduce traditional transportation fuel consumption associated with personal automobile vehicle trips, and HSR's commitment to the use of renewable energy for electric power for HSR train service, the Project would not conflict with state or local plans for renewable energy or energy efficiency. Therefore, no construction and operational impacts would occur that would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.7. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

- 3.7.1. Would the Project, directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

There are no Alquist-Priolo Earthquake Fault Zones within Madera County. The closest potentially active fault is the Clovis Fault approximately six miles south of the Madera County line (as shown in Figure 3.7-1). The Clovis Fault has no historic evidence of activity. Construction and operation of Phase 1 and Phase 2 are not expected to expose people or structures to adverse effects caused by the rupture of a known fault. Therefore, no construction and operational impacts would occur related to potential substantial adverse effects, including the risk of loss, injury, or death with rupture of a known earthquake fault.

- 3.7.2. Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?**

Determination: LESS THAN SIGNIFICANT IMPACT

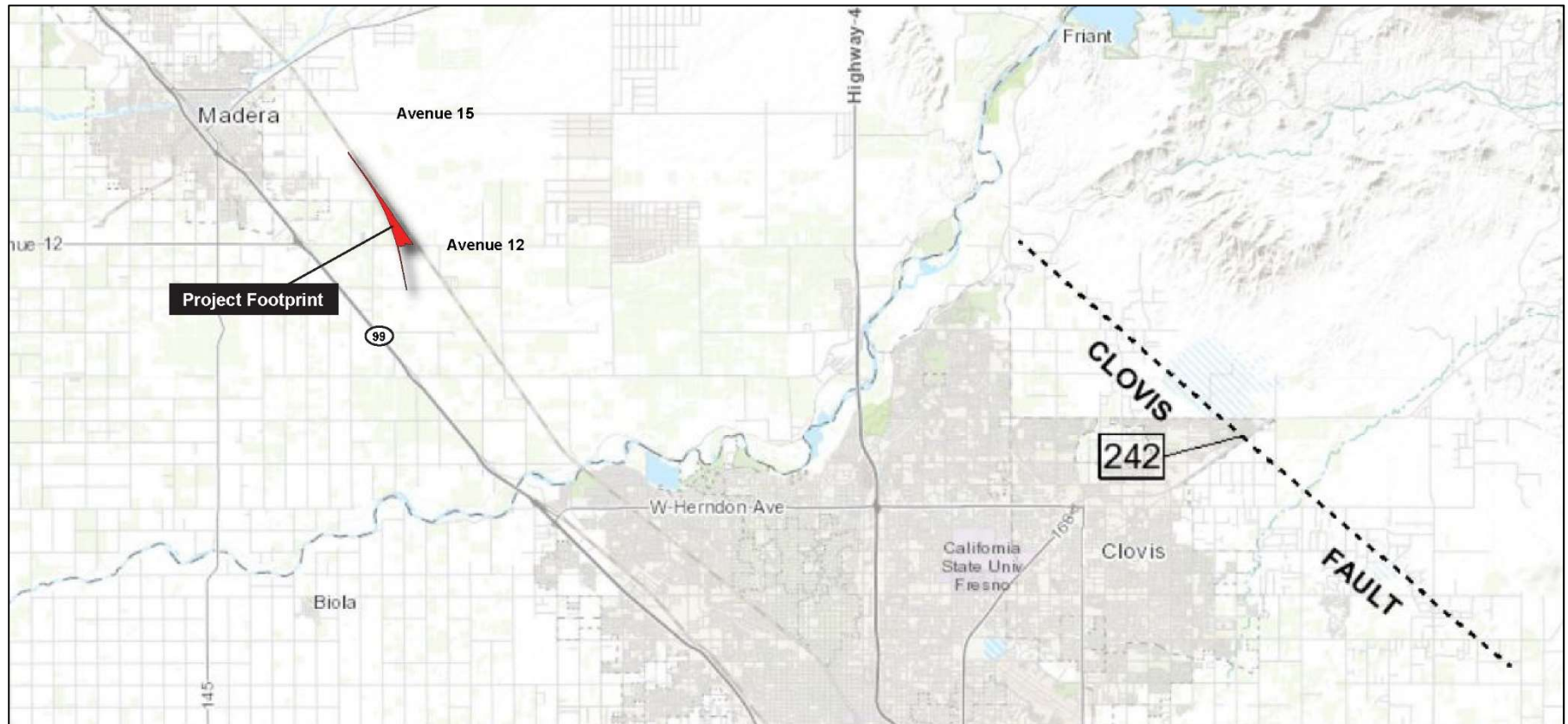
Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

Madera County is in a low to moderately seismic active area, with areas in the upper Sierra Nevada region at a greater seismic risk. The western half of Madera County is in the lowest earthquake shaking potential for California. Although the Project Footprint is not near any active faults, it is possible that the region could be affected by future seismic activity. With the exception of the far eastern edge of the County, the magnitude of the incident is not likely to be severe. Depending on the strength of ground shaking, it is possible that structures in the area could be damaged during such an event. All new structures proposed for the Project Footprint would be required to comply with construction standards and seismic design criteria contained in the most updated California Building Code.

Although the potential for seismic ground shaking to occur at the Project Footprint is unavoidable, the risk of excessive permanent damage is minor because facilities would comply with building standards for seismic safety as required by the California Building Code and the County of Madera Department of Public Works. Therefore, construction and operational impacts related to exposing people or structures to strong seismic ground shaking would be less than significant.

Figure 3.7-1 California Earthquake Zone Map



Source: California Geological Survey, <https://maps.conservation.ca.gov/cgs/EQZApp/app/>

3.7.3. Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

Soil types in Madera County are not conducive to liquefaction because they are either too coarse in texture or too high in clay content, so the soil types reduce the potential for liquefaction. Since the Project Footprint is in a low to moderate active seismic region, there is some potential for seismic-related ground failure. The probability of soil liquefaction in the area is considered a low to moderate hazard because of the substantial distance from active fault zones and the intensity of ground shaking expected (see Impact (3.7.1), above).

Prior to final design, a site-specific geotechnical study would be prepared, as required by the California Building Code (Title 24 of the California Code of Regulations). The geotechnical study would be used to determine the appropriate design features and construction measures that would be necessary to minimize potential adverse effects associated with seismic-related ground failure, including liquefaction, lurching, or lateral spreading. In addition, new structures would be constructed to meet all Title 24 seismic safety regulations. Therefore, construction and operational impacts related to seismic-related ground failure would be less than significant.

3.7.4. Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

Most areas in western Madera County are at low to moderate risk for landslides. There have been two Federal (1993 & 1995) and three State (1993, 1995, 2016/2017) disaster declarations with landslides in Madera County. Minimal landslides have occurred within the County due to recent wildfires, which make the soils susceptible to landslides. However, the Project Footprint is in a flat area so there is no risk of landslides in such terrain. Therefore, no construction and operational impacts would occur related to landslides.

3.7.5. Would the Project result in substantial soil erosion or the loss of topsoil?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project Footprint is atop soil units with poor topsoil quality, is susceptible to water or wind erosion, and is highly corrosive to uncoated steel and concrete. Construction and operation of the Project could erode and cause indirect impacts on water quality and loss of high value soil, which collectively would result in a substantial indirect effect.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

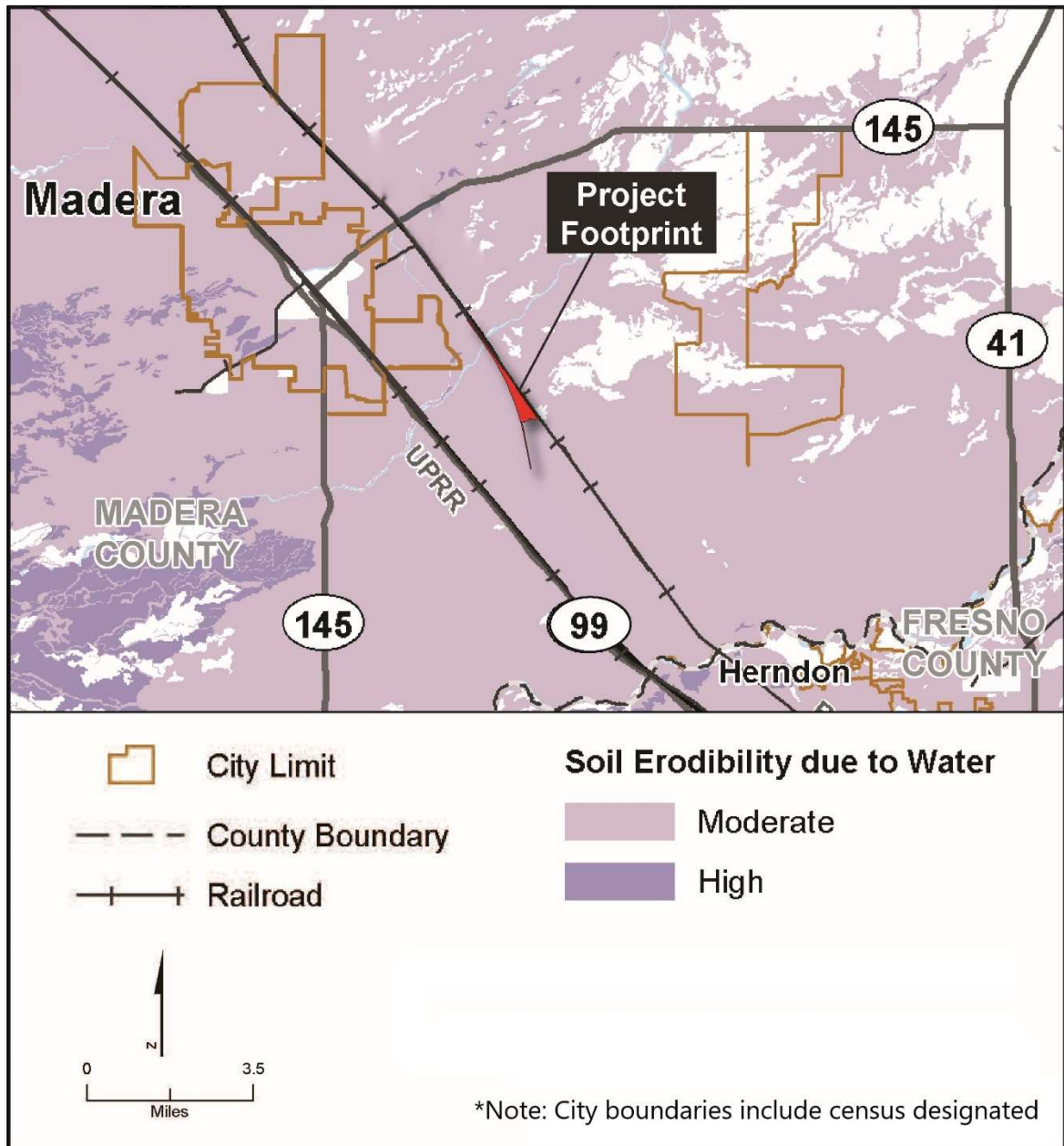
Soils that have moderate potential for water erosion and high potential for wind erosion were identified within the Project Footprint (as shown in Figure 3.7-2 and Figure 3.7-3). Construction methods including excavation or grading would increase the potential for more surface water runoff when existing vegetation is removed, and soils are exposed to wind or water erosion. Construction methods that involve more exposure of the ground during construction would have greater risks from water and wind erosion. If exposed soils are not protected from wind or water erosion, such as stockpiling of excavation materials during construction, the topsoil could erode and cause indirect impacts on water quality and loss of high value soil, which collectively would result in a substantial indirect effect.

By implementing standard construction practices and Best Management Practices (BMPs) such as those listed in the Caltrans' Construction Site BMPs Field Manual and Troubleshooting Guide (Caltrans 2003a), and the Construction Site Best Management Practice (BMP) Manual (Caltrans 2003b), Project construction would have limited impacts from erosion. Therefore, construction impacts related to substantial soil erosion or the loss of topsoil would result in less than significant impacts.

Operational Impacts

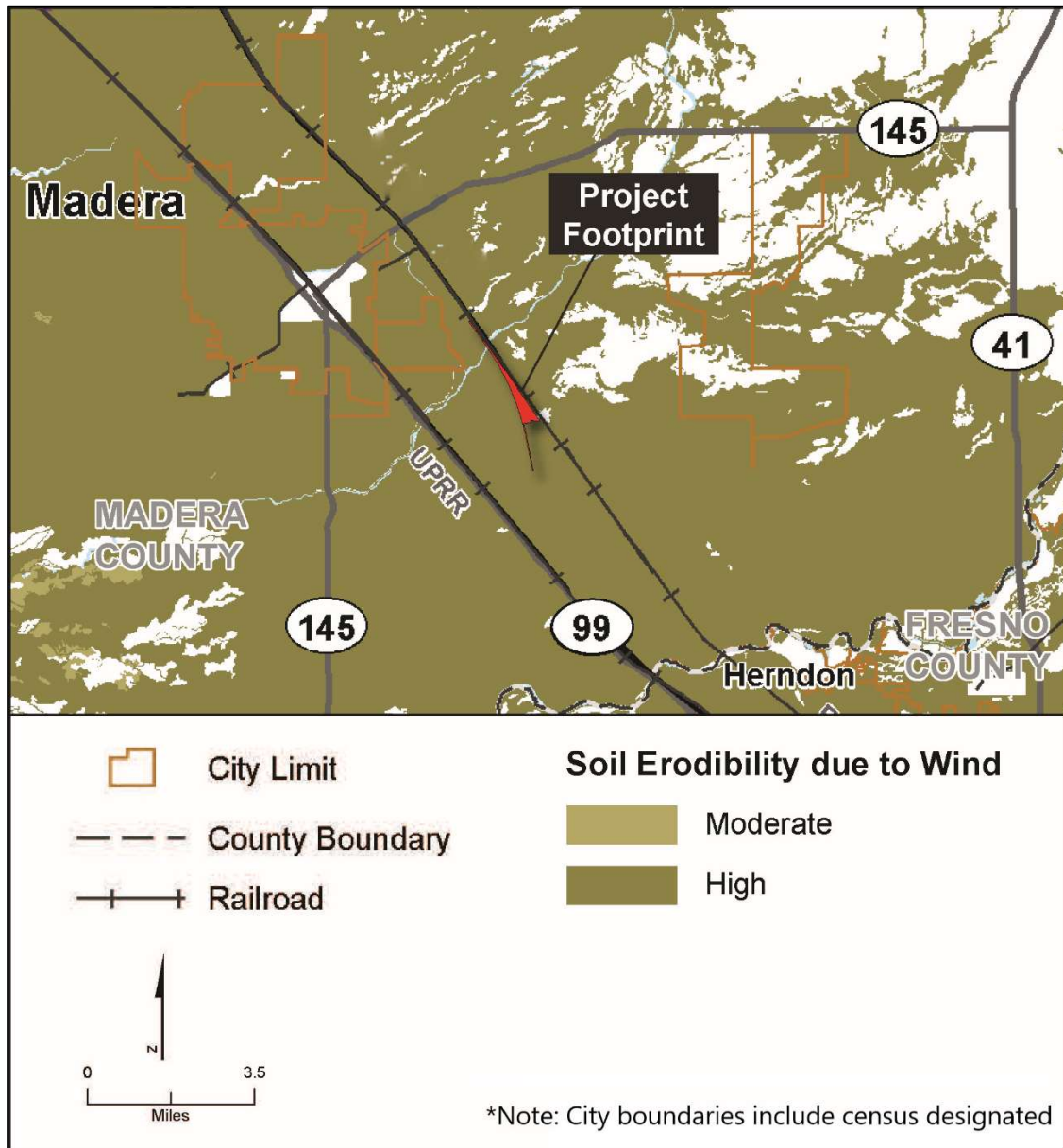
During Project operation, the potential for soil exposure increases due to excavation activities. With the longer exposure period, the potential for creep- or groundwater-related soil failures increase. The unstable soils consist of loose or soft deposits of sands, silts, and clays that can occur on a localized basis and are likely to be more prevalent near river and stream crossings.

Figure 3.7-1 Potential for Soil Erosion to Water



Source: California High-Speed Train Project EIR/EIS Geology, Soils, and Seismicity Technical Report Merced to Fresno Section.

Figure 3.7-2 Potential for Soil Erosion to Wind



Source: California High-Speed Train Project EIR/EIS Geology, Soils, and Seismicity Technical Report Merced to Fresno Section.

By implementing standard construction practices and Best Management Practices (BMPs) such as those listed in the Caltrans' Construction Site BMPs Field Manual and Troubleshooting Guide (Caltrans 2003a), and the Construction Site Best Management Practice (BMP) Manual (Caltrans 2003b) and maintaining them during operation would limit the impacts from erosion. Design methods that consider the short- and long-term impacts of unstable soils would be incorporated. Engineered ground improvements such as regrading or groundwater controls would be implemented to avoid long-term impacts from unstable soils. Implementation of these methods during final design would meet standards of design and building code requirements to provide either sufficient bearing capacity and slope stability or design measures that protect the facility from loads associated with unstable soils. Therefore, operational impacts related to substantial soil erosion or the loss of topsoil would be less than significant.

3.7.6. Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

See Impact 3.7.1, above, regarding lateral spreading and liquefaction and Impact 3.7.4 regarding landfills.

3.7.7. Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project Footprint is on relatively flat land in the San Joaquin sandy loam soil unit with zero to three percent slopes. The San Joaquin sandy loam soil unit is composed of 90% San Joaquin soils, with the remainder of a variety of minor soil types (ten percent). San Joaquin Valley soils are characterized by moderate drainage, slow water movement, very low water availability to a depth of 2.1 inches, and high shrink-swell potential.

Most of the soils in the upper five feet of the soil profile within the Project Footprint were generally found to have moderate-to-high shrink-swell potential (as shown in Figure 3.7-4). The soils of the older, low alluvial terraces contain expansive clays, giving these soils a high shrink-swell potential. The earth loads associated with at-grade segments of the track alignment may not be sufficient to overcome swell potential. This impact is considered to have substantial intensity because this impact could result in loss of life or substantial property damage if not adequately addressed during design and construction.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

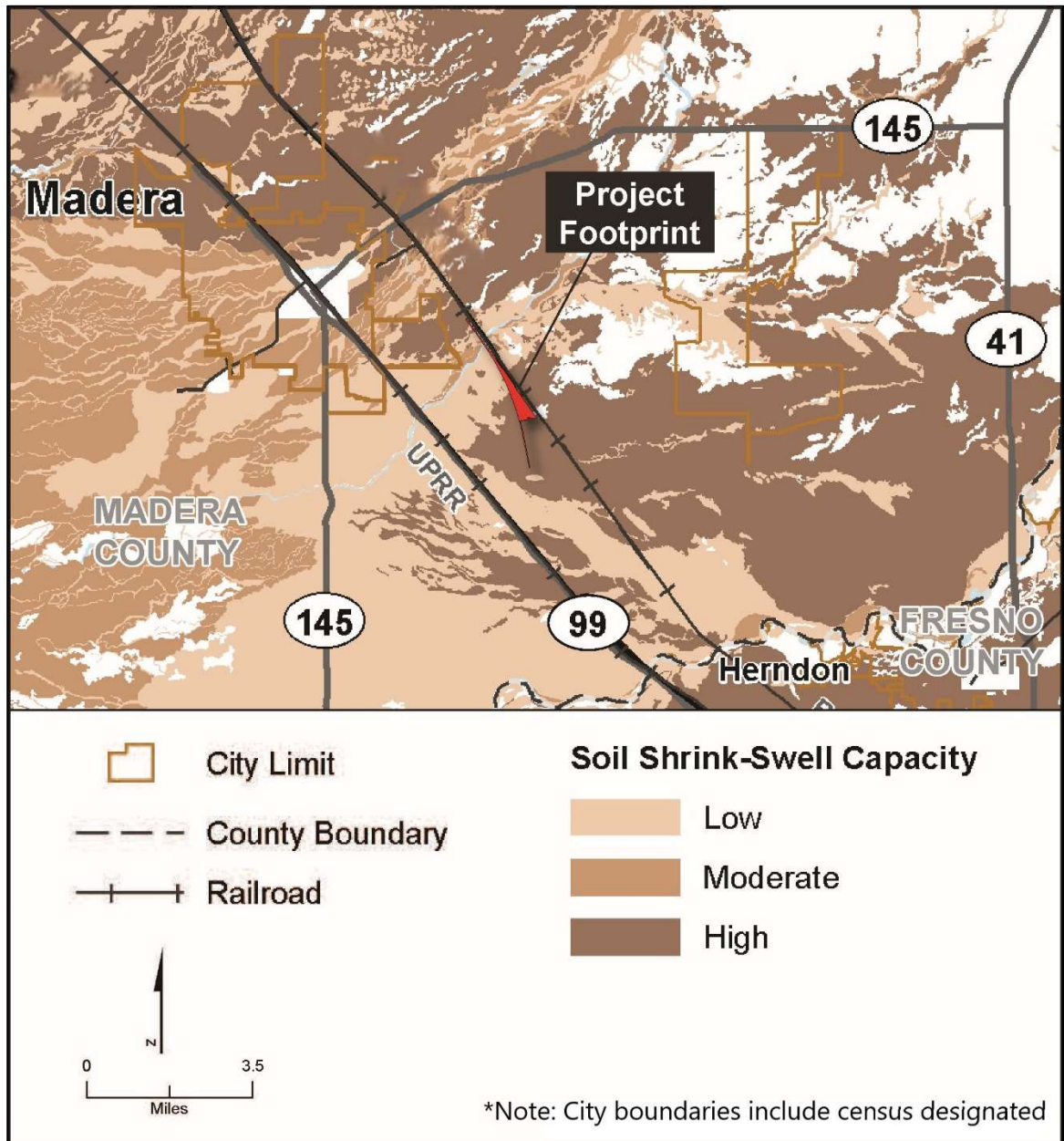
Construction and Operational Impacts

Construction of the Project on soils with moderate to high shrink-swell (expansive) potential could result in damage to the building facilities during operation of the Project. The potential for shrink-swell also represents a risk to the track system and track right-of-way for long-term operations for both the BNSF and CAHSR lines by differential track movement (Figure 3.7-4). This type of impact is more critical at locations with at-grade segments than to elevated structures on deep foundations, retained fill, and retained cuts. The earth loads associated with at-grade segments of the two rail lines may not be sufficient to overcome swell potential. Soils with swell potential would likely be present along the two rail alignments, station platforms, and building facilities.

Because of the shrink-swell potential risk, the Project could be subject to unstable soil conditions such as settlement or expansion during construction and operation. Sandy portions of the subsurface materials (alluvium, fill) could be subject to compression causing settlement. When weak soils are reengineered specifically for stability prior to use, these potential effects can be reduced or eliminated. To meet the County's design standards for grading and to comply with the California Building Code (Title 24 of the California Code of Regulations), a site-specific evaluation of soil conditions would be required by the County. This evaluation would identify recommendations for ground preparation and earthwork specific to the Project Footprint and would become an integral part of the Project design.

An acceptable degree of soil stability could be achieved for expansive or compressible soils through routine soil treatment programs (replacement, grouting, compaction, drainage control, etc.). In addition, properly designing foundations and footings and diverting runoff away from buildings would help to prevent the structural damage caused by shrinking and swelling. In addition, properly designing buildings and roads can offset the limited ability of the soil to support a load. Compliance with building regulations and site-specific recommendations to address the on-site soil conditions would reduce the severity of construction and operation impacts. Therefore, construction and operational impacts related to geologic units or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse would be less than significant.

Figure 3.7-4 Potential for Soils Related to Shrink-Swell



Source: California High-Speed Train Project EIR/EIS Geology, Soils, and Seismicity Technical Report Merced to Fresno Section

3.7.8. Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction & Operational Impacts

Sanitary waste would be generated by the restroom and storage room facilities of the Relocated Station and HSR Improvements. The Project Footprint would include an on-site Wastewater Treatment System (OWTS) in accordance with the Local Agency Management Program (LAMP) for Madera County. The most common type of OWTS found in Madera County consists of a septic tank connected to either seepage pits or leach lines, depending on the site location. LAMP has not considered all plausible future events for various sites and proposed projects.

Soil conditions needed to support the use of OWTS need to provide sufficient depth of unsaturated soil below the leach field and seepage pits. The Project Footprint is on soils with very low permeability, which would help provide treatment of the percolating wastewater and would require fewer separation distances to afford proper groundwater protection. As described in Items (3.7.3 and 3.7.4) above, the Project would include a site-specific evaluation of soil conditions to comply with the California Building Code (Title 24 of the California Code of Regulations). This evaluation would identify recommendations for ground preparation and earthwork specific to the Project Footprint, including evaluation of soil conditions to support the use of OWTS. With the implementation of BMPs, as well as compliance with building regulations and site-specific recommendations to address on-site soil conditions, the severity of construction and operational impacts on soils incapable of supporting the use of septic tanks would reduce significantly. Therefore, construction and operational impacts on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems would be less than significant.

3.7.9. Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Determination: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED

The Project Footprint is in an area that has moderate to high paleontological sensitivity. For example, near Chowchilla, the Fairmead Landfill in Madera County is the site of one of the largest middle-Pleistocene fossil excavations in North America. These fossils are of particular significance for California and the western United States because there are few sites known from this time period, especially with so many species present. Mid- to Late-Pleistocene deposits below the topsoil in the vicinity of the Project Footprint consist of three stratigraphic units from top to bottom: Modesto Formation, Riverbank Formation, and

Turlock Lake Formation. Fossils recovered from the Turlock Lake Formation, which is considered to be highly sensitive for paleontological resources in Madera County, were found at depths of 40 feet below the surface.

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction activities associated with the Relocated Station are not anticipated to require more than 10 to 12 feet of excavation. The area in the vicinity of the Project Footprint is known to have yielded paleontological resources in the past at a depth of 40 feet below the surface. Although the excavation depths anticipated for Phase 1 would not likely affect those resources, in an area with high paleontological sensitivity there exists the potential to encounter unknown paleontological resources at various depths, depending on the geology. Without mitigation, impacts to these resources would be considered significant. Below are mitigation measures that would reduce impacts related to paleontological resources to less than significant.

Mitigation Measures MM-GEO-1, MM-GEO-2, and MM-GEO-3 would reduce the potential impacts to paleontological resources if they are encountered during excavation activities associated with construction of the Relocated Station.

- **MM-GEO-1. Paleontological Monitoring During Construction.** At least 120 days prior to construction, a paleontological resources monitor shall be designated for the Project and shall be responsible for determining where and when paleontological resources monitoring should be conducted. The paleontological resources monitor shall be selected based on their qualifications, and the scope and nature of their monitoring shall be determined and directed based on the Paleontological Resource Monitoring and Mitigation Plan (PRMMP). The paleontological resources monitor shall be responsible for developing and implementing the WEAP training. All management and supervisory personnel and construction workers involved with ground-disturbing activities shall be required to take this training prior to beginning work on the Project and shall be provided with the necessary resources for response in case paleontological resources are found during construction. The paleontological resources monitor shall 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.
- **MM-GEO-2: Prepare and Implement a Paleontological Resources Monitoring and Mitigation Plan (PRMMP).** Paleontological monitoring and mitigation measures are restricted to those construction-related activities that shall result in the disturbance of paleontologically sensitive sediments. The PRMMP shall include a description of when and where construction monitoring shall be required; emergency discovery procedures; sampling and data recovery procedures; procedures for the

preparation, identification, analysis, and curation of fossil specimens and data recovered; preconstruction coordination procedures; and procedures for reporting the results of the monitoring and mitigation program. In general, the monitoring program shall reflect site-specific construction of the selected option. The PRMMP shall be consistent with Society of Vertebrate Paleontology (SVP) guidelines for the mitigation of construction-related impacts on paleontological resources. The PRMMP shall also be consistent with the SVP conditions for receivership of paleontological collections and any specific requirements of the designated repository for any fossils collected.

- **MM-GEO-3: Halt to 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 shall cease. This requirement shall 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 paleontological resources monitor, the paleontological resources monitor shall immediately be notified.

Implementation of mitigation measures MM-GEO-1, MM-GEO-2, and MM-GEO-3 would reduce construction impacts related to paleontological resources to less than significant.

Operational Impacts

Operations of the relocated Madera Station would not require excavation activities. Therefore, no operational impacts related to paleontological resources would occur.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction activities associated with Phase 2 in general are not anticipated to require more than 10 to 12 feet of excavation. However, the footings for the new bridge crossing Cottonwood Creek would require excavation of 80 feet in depth. This depth is well within range of the depth at which paleontological resources have been discovered. Therefore, construction impacts related to paleontological resources would be considered significant unless mitigation measures are implemented.

Mitigation Measures MM-GEO-1, MM-GEO-2, and MM-GEO-3 (described above) would reduce the potential impacts to paleontological resources if they are encountered during excavation activities associated with construction of the HSR Improvements.

Implementation of mitigation measures MM-GEO-1, MM-GEO-2, and MM-GEO-3 would reduce construction impacts related to paleontological resources to less than significant.

Operational Impacts

Phase 2Phase 1 and Phase 2 operations would not require excavation activities. Therefore, no operational impacts related to paleontological resources would occur.

3.8. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

3.8.1. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Determination: LESS THAN SIGNIFICANT IMPACT

Greenhouse gas (GHG) emissions play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation (i.e., thermal heat) is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth.

GHGs are present in the atmosphere naturally, are released by natural sources, and are formed from secondary reactions taking place in the atmosphere. The following are GHGs that are widely seen as the principal contributors to human-induced global climate change: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO₂. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO₂, the most abundant GHG. GHGs with lower emissions rates than CO₂ may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO₂ (i.e., high GWP). The concept of CO₂-equivalents (CO₂e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project alone is expected to measurably contribute to a noticeable incremental change in the global average temperature, or to a global, local, or microclimate. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis.

In December 2009, the SJVAPCD adopted the *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (SJVAPCD 2009). Under this guidance, projects complying with an approved GHG plan or mitigation program or implementing Best Performance Standards and reducing project-specific GHG emissions by at least 29% compared to business-as-usual condition would have a less than significant individual and cumulative impact on global climate change. However, the SJVAPCD methodology was developed primarily to address long-term operational activities of land use development projects (e.g. residential and commercial buildings). Thus, the SJVAPCD has not developed an applicable Best Performance Standards or threshold of significance for transportation and transit-related projects such as the Project.

In order to establish additional context in which to consider the Project's GHG emissions, this analysis reviewed guidelines used by other public agencies. For example, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has identified an annual threshold of 1,100 MT CO₂e for the construction and operational phases of all project types. SMAQMD recognizes that, although there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere, a threshold must be set to trigger a review and assessment of the need to mitigate project GHG emissions (SMAQMD 2020). The threshold set by the SMAQMD was developed to allow lead agencies to assess the consistency of proposed projects with the Assembly Bill (AB) 32 and Senate Bill (SB) 32 reduction goals (SMAQMD 2020). The SMAQMD also recommends amortizing the level of short-term construction emissions over the expected (long-term) operational life of a project (SMAQMD 2020). The operational life of a project varies by project type; however, the SMAQMD recommends agencies to use 40 years for new residential and 25 years for conventional commercial. Similarly, other air districts (e.g., South Coast Air Quality Management District) typically assume a project lifetime to be 30 years. The Placer County Air Pollution Control District (PCAPCD), in its 2017 CEQA guidelines, recommends a threshold of 10,000 MT CO₂e per year for the project-level construction phase (PCAPCD 2017). Therefore, this analysis utilizes the 1,100 MT CO₂e threshold developed by SMAQMD for the construction and operational phase of all project types for conservative purposes.

Each of the significance thresholds developed by these other agencies is designed to establish the level of emissions for individual projects that would represent cumulatively considerable contribution to the significant cumulative impact of GHG emissions, based on

the statewide framework established by AB 32, SB 32, and relevant executive orders addressing climate change effects. It is not the intent of this CEQA document to cause the adoption of these thresholds as mass emissions limits for this or other projects, but rather to provide this additional information to put the project-generated GHG emissions in the appropriate statewide context.

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the Project would result in exhaust-related GHG emissions. Construction-related and operational GHG emissions were estimated for both Phase 1 & 2 using the methodology discussed earlier under Section 3.3 Air Quality. Additional modeling assumptions and details are provided in Appendix E.

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction of Phase 1 is anticipated to occur over approximately 12 months with an anticipated start year of 2023. Table 3.8-1 shows the total and amortized GHG emissions associated with construction of Phase 1.

**Table 3.8-1. Construction-Related GHG Emissions
(Phase 1 – San Joaquins Relocated Station)**

Description	GHG Emissions (MT CO₂e)
Total GHG Emissions	970
Amortized GHG Emissions ¹	32
Threshold of Significance ²	1,100
Exceeds Threshold?	No
Notes MT = metric tons; CO ₂ e = carbon dioxide equivalents	
¹ Amortized emissions estimated assuming a 30-year lifetime of the project (970 MT CO ₂ e divided by 30 years).	
² SMAQMD 2020	

As shown in Table 3.8-1, the amortized GHG emissions resulting from construction of Phase 1 would be approximately 32 MT CO₂e. The amortized construction-related GHG emissions are less than the SMAQMD annual threshold of 1,100 MT CO₂e for the construction phase of projects. Therefore, construction impacts related to generating GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be less than significant.

Operational Impacts

As discussed in more detail in Sections 3.3 (Air Quality) and 3.17 (Transportation), the Project would reduce vehicle miles traveled (VMT) by inducing a mode shift from personal automobiles to public transit, including for long-distance intercity. In particular, the Relocated Station in Phase 1 would expand the catchment of the San Joaquins and is

expected to result in increased ridership overall compared to the existing station in Madera Acres. Thus, the Project would reduce VMT from personal vehicles in the region and the associated GHG emissions during Phase 1.

While there is expected to be an increase in GHG emissions associated with increased localized VMT due to vehicle activity to and from the Relocated Station, these effects would be far outweighed by the reduction in overall GHG emissions associated with the reduction in regional and intercity VMT due to mode shifts from automobiles to passenger rail. The Relocated Station is anticipated to generate greater ridership potential and transit connectivity. In addition, the Relocated Station site also provides the potential for future transit-oriented development, which conserves land and decreases the distances people need to travel to reach destinations (USDOT 2010), thereby potentially reducing GHG emissions further. As shown in Table 3.8-2, Phase 1 is anticipated to result in a net reduction of approximately 3,189,300 vehicle-miles, resulting in a net reduction of approximately 863 MT CO₂e per year.

The Relocated Station would generate indirect GHG emissions associated with waste generation and electricity consumption for the fare machines, information panels, and lighting. Indirect GHG emissions associated with electricity were calculated using the estimated energy consumption⁶ and Pacific Gas & Electric's GHG intensity of 210 pounds per Megawatt-hour for delivered electricity (PG&E 2019). Indirect GHG emissions associated with waste generation were calculated using the estimated annual waste generation⁷ and CalEEMod GHG emissions factors for waste generation. Table 3.8-2 shows the annual GHG emissions associated with the operation of Phase 1 and the net reduction in GHG emissions associated with the reduction in automobile vehicle miles.

⁶ Annual energy consumption for the Interim Phase was estimated to be approximately 65 Megawatt-hours.

⁷ Annual waste generation for the Interim Phase was estimated to be approximately 5 tons.

**Table 3.8-2. Annual Operational GHG Emissions
(Phase 1 – San Joaquin Relocated Station)**

Description	GHG Emissions (MT CO ₂ e)
Operational GHG Emissions	8
Avoided GHG Emissions Associated with Net VMT Reduction ¹	(863)
Total GHG Emissions	(855)
Threshold of Significance ¹	1,100
Exceeds Threshold?	No
Notes MT = metric tons; CO ₂ e = carbon dioxide equivalents	
¹ More than one annual year conservative	
² SMAQMD 2020	

As shown in Table 3.8-2, operational emissions of Phase 1 would result in a net reduction in GHG emissions as a result of the reduction in regional and intercity VMT. Therefore, operational impacts related to generating GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of Phase 2 is expected to begin in 2026 and last approximately 24 months. Table 3.8-3 shows the total GHG emissions associated with construction of Phase 2.

**Table 3.8-3. Construction-Related GHG Emissions
(Phase 2 – HSR Interim Operating Segment Station)**

Description	GHG Emissions (MT CO ₂ e)
Total GHG Emissions	1,637
Amortized GHG Emissions ¹	55
Threshold of Significance ²	1,100
Exceeds Threshold?	No
Notes MT = metric tons; CO ₂ e = carbon dioxide equivalents	
¹ 1 Amortized emissions estimated assuming a 30-year lifetime of the project (970 MT CO ₂ e divided by 30 years).	
² SMAQMD 2020	

As shown in Table 3.8-3, the amortized GHG emissions resulting from construction of Phase 2 would be approximately 55 MT CO₂e. The amortized construction-related GHG emissions are less than the SMAQMD annual threshold of 1,100 MT CO₂e for the construction phase of projects. Therefore, construction impacts related to generating GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be less than significant.

Operational Impacts

As described above for Phase 1, the HSR Improvements associated with Phase 2 would allow an HSR stop in Madera, which will increase HSR ridership and San Joaquin's ridership. Thus, the Project is expected to reduce VMT from personal vehicles in the region and the associated GHG emissions. As shown in Table 3.8-4, Phase 2 is anticipated to result in a net reduction of approximately 8,102,300 vehicle-miles, resulting in a net reduction of approximately 1,974 MT CO₂e per year.

Similar to Phase 1, Phase 2 would generate indirect GHG emissions associated with waste generation and electricity consumption. Indirect GHG emissions associated with electricity were calculated using the estimated energy consumption and Pacific Gas & Electric's GHG intensity of 210 pounds per Megawatt-hour for delivered electricity (PG&E 2019). Indirect GHG emissions associated with waste generation were calculated using the estimated annual waste generation and CalEEMod GHG emissions factors for waste generation. Table 3.8-4 shows the annual GHG emissions associated with operation of Phase 2.

**Table 3.8-4. Annual Operational GHG Emissions
(Phase 2 – HSR Interim Operating Segment Station)**

Description	GHG Emissions (MT CO₂e)
Operational GHG Emissions	13
Avoided GHG Emissions Associated with Net VMT Reduction ¹	(1,974)
Total GHG Emissions	(1,961)
Threshold of Significance ²	1,100
Exceeds Threshold?	No
Notes MT = metric tons; CO ₂ e = carbon dioxide equivalents ¹ Emissions reductions associated with the estimated net reduction in annual VMT of approximately 8,102,300 vehicle-miles ² SMAQMD 2020	

As shown in Table 3.8-4, operational annual emissions of Phase 2 would result in a net reduction in GHG emissions due to the net reduction in regional and intercity VMT. Therefore, operational impacts related to generating GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be less than significant.

3.8.2. Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, CARB adopted its Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (CARB 2008).

In 2016, the state legislature passed SB 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, CARB approved the 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target in November 2017 (2017 Scoping Plan). The 2017 Scoping Plan draws from the previous plans to present strategies to reaching California's 2030 GHG reduction target.

While the 2017 Scoping Plan updates do include some measures that would indirectly address GHG emissions levels associated with construction activity, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard, successful implementation of these measures would predominantly depend on the development of future laws and policies at the state level, rather than separate actions by individual agencies or local governments. Thus, it is assumed that any requirements or policies formulated under the mandate of AB 32 and SB 32 that would be applicable to the Project, either directly or indirectly, would be implemented consistent with statewide policies and laws. Therefore, it is assumed that Project construction would not conflict with the 2017 Scoping Plan updates.

The 2017 Scoping Plan Update also identifies GHG reduction strategies and actions in six key sectors: low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water (CARB 2017). Within the transportation sustainability sector, CARB calls for encouraging public transit use and increasing public transportation opportunities in efforts to reduce GHG emissions from light-duty combustion vehicles (CARB 2017). The 2017 Scoping Plan Update also calls for supporting local and regional governments to develop and implement high speed rail station area plans as means to encourage vibrant communities and reduce VMT. The existing Relocated Station in Phase 1 and construction of the HSR Improvements in Phase 2, the Project is anticipated to increase ridership and reduce VMT by inducing a mode shift from personal automobiles to public

transit. Thus, the Project is expected to reduce VMT from personal vehicles in the region and the associated GHG emissions. Further, as an effort to meet the goals of AB 32 to reduce statewide GHG emissions, the California Building Standards Code established the California Green Building Standards Code (*CALGreen*). *CALGreen* encourages sustainable construction practices and building design in the categories of planning and design, including energy efficiency.

In addition, the Madera County Transportation Commission's (Madera CTC) 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) includes goals and strategies to improve regional transportation system efficiency and optimize public transportation (2018 RTP/SCS) in efforts to encourage public transportation and reduce vehicle trips and vehicle miles traveled. The Project would be consistent with the 2018 RTP/SCS as the Project is a means to increase ridership levels by relocating the existing station to a new location with greater ridership potential and transit connectivity in Phase 1. In addition, the Project would implement HSR Improvements in Madera County during Phase 2 and would facilitate goals and objectives of both the 2018 RTP/SCS and the 2018 California State Rail Plan, including reducing GHG emissions, by integrating local, regional, and intercity transit services. Therefore, construction and operational impacts related to conflicting with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions would be less than significant.

3.9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.9.1. Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Determination: LESS THAN SIGNIFICANT IMPACT

Information in this section is based on the Hazards and Hazardous Materials Technical Memorandum. Please refer to Appendix C.

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Construction activities associated with the Relocated Station in Phase 1 of the Project are expected to involve the routine transport, use, and disposal of hazardous materials (e.g. fuels, paints, and lubricants) that could pose a significant threat to human health or the environment if not properly managed. The transport, use, and disposal of hazardous materials during construction is regulated and enforced by federal and state agencies.

Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. During construction, hazardous materials must be transported in accordance with the Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation (USDOT) regulations, stored in accordance with the Unified Program enforced by local Certified Unified Program Agencies (CUPA), and disposed of in accordance with RCRA and the California Code of Regulations (CCR) at a facility permitted to accept the waste.

In accordance with the State Water Board's requirements for construction sites greater than 1 acre, a stormwater pollution prevention plan (SWPPP) must be prepared and implemented during construction for coverage under the Construction General Permit. As detailed further in Section 3.10 Hydrology and Water Resources, the SWPPP requires implementation of BMPs for hazardous materials storage and soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent runoff into existing stormwater collection systems or waterways.

Thus, adherence to federal and state regulations would reduce the risk of exposure to hazardous materials routinely used, transported, or disposed of during construction, as well as the accidental release of hazardous materials. Compliance with existing regulations is mandatory; therefore, construction of the Project is not expected to create a hazard to construction workers, the public, or the environment through the routine transport, use, disposal, or accidental release of hazardous materials. As a result, construction impacts that would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

Operational Impacts

Operation and maintenance activities associated with the Relocated Station during Phase 1 are expected to involve the routine use of diesel to power locomotives and pesticides to clear vegetation from track areas, similar to current operations. Janitorial and maintenance activities at and around the platform and station facilities would also use common cleaning and maintenance chemicals. Routine transport, use, and disposal of such hazardous materials could result in the exposure of workers, the public, and/or the environment to hazardous materials if the materials are not properly managed.

The transport, use, and disposal of hazardous materials during operation is regulated and enforced by federal and state agencies. Workers who handle hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements, which limit potential exposure of workers to hazardous materials by requiring appropriate administrative or engineering controls. Pesticides use for vegetation removal near the tracks would be required to comply with California Department of Pesticide Regulations laws and regulations, which are intended to protect human health and the environment. Hazardous materials must be transported in accordance with RCRA and USDOT regulations; managed, stored, and used in accordance with the Unified Program enforced by local CUPAs; and disposed of in accordance with RCRA and Cal. Code Regs. at a facility permitted to accept the waste.

Thus, adherence to federal and state regulations and the Unified Program reduces the risk of exposure to hazardous materials. Compliance with existing regulations and the Unified Program is mandatory; therefore, operation and maintenance of the Project is not expected to create a hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials. Therefore, operational impacts that would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Construction and operational activities associated with Phase of the Project would have similar impacts relating to routine use, transportation, and disposal of hazardous materials as described for Phase 1 construction and operations above, except that the HSR would operate electric trains. There would be no routine use of diesel associated with the HSR Improvements. However, if it becomes necessary to continue to operate San Joaquins trains during Phase 2, the additional diesel usage would continue. However, based on the Phase 1 and Phase 2 assessments, construction and operational impacts of Phase 2 that would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

3.9.2. Would the Project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Determination: LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station

Construction Impacts

Typically, construction activities have the potential to result in releases of hazardous materials associated with accidental spills of hazardous materials used during construction, or from the disturbance of contaminated soils and groundwater that may be present at the site. These potential impacts are addressed in turn, below:

Accidental Spills: As discussed for Impact 3.8.1 above, construction of the Relocated Station would involve the routine use of hazardous materials associated with construction. The same regulatory framework that would reduce impacts from exposure to chemicals during routine use, would also serve to minimize the risk of accidental spills or releases of such hazardous materials. Impacts would be less than significant.

Contaminated Soils and Groundwater: Construction of the Relocated Station would involve the disturbance of soil and railroad ballast, and possibly groundwater, which could result in the release of hazardous materials into the environment. Potential sources of hazardous materials in the Project Footprint were reported in the Hazardous Materials Technical Report prepared for the Project (AECOM 2020), however not all of the identified potential sources would be disturbed during construction of the Relocated Station, due to the limited Footprint of disturbance associated with these Project components.

Potential sources of hazardous material contamination within the Project Footprint for Phase 1, which might be disturbed during construction, include:

- Potential pesticide contamination in shallow soils and groundwater. The entire Project Footprint could contain elevated levels of pesticides due to past agricultural use of the land (AECOM 2020). Such contaminants could be encountered during ground disturbance associated with any Project features. The groundwater table in the Project Footprint has fluctuated between approximately 150 to 300 feet below ground surface over the last decade (DWR 2020) and is therefore well below the anticipated excavation depth for Relocated Station components, which could be up to 10 feet. However, perched lenses of groundwater at shallower depths have been reported at nearby properties (TRC 2015), therefore construction activities associated with the Relocated Station components could encounter groundwater.
- Potential heavy metals (especially arsenic), petroleum hydrocarbon, or polyaromatic hydrocarbon contamination in shallow soils, railroad ballast materials, or shallow perched groundwater. Areas within or immediately adjacent to the existing BNSF

Corridor could contain elevated levels of contaminants associated with past rail operations (AECOM 2020). Such contaminants could be encountered during ground disturbance associated with proposed track work and platform construction within or immediately adjacent to the rail corridor.

- Potential hazardous building materials (e.g., creosote-treated railroad ties). Such hazardous building materials could be encountered during ground disturbance associated with proposed track work within the existing rail corridor.

If not appropriately managed, disturbance of contaminated soils, ballast, or groundwater during construction could result in the following impacts:

- Potential exposure of construction workers, via direct contact (dermal exposure or ingestion) with contaminated materials or inhalation of fugitive dust. This is a potentially significant impact.
- Potential exposure of nearby residents or the general public, via inhalation of fugitive dust. This is a potentially significant impact.
- Potential release of contaminated materials to the environment, through stormwater contact with excavated contaminated materials or inappropriate disposal of hazardous wastes.

Therefore, construction impacts that would create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be considered a significant impact.

Mitigation Measures

Mitigation Measures MM-HAZ-1, MM-HAZ-2, and MM-HAZ-3 are recommended, which would require a voluntary oversight agreement, site investigation, a construction risk management plan (CRMP), and fugitive dust controls to reduce impacts associated with potentially contaminated soil, ballast, and hazardous building materials during construction.

- **MM-HAZ-1. Implement voluntary oversight agreement.** Prior to construction, SJJPA shall establish an agreement with a state regulatory agency to oversee the investigation and management (described in MM-HAZ-2 and MM-HAZ-3) of contaminated soil, ballast, and/or groundwater that would potentially be disturbed by construction of the Project. Regulatory agency oversight may be provided by, but is not limited to, the State Water Board under the Site Cleanup Program or DTSC under the Voluntary Cleanup Program.
- **MM-HAZ-2: Conduct site investigations.** Prior to construction, SJJPA shall conduct a site investigation for Project improvements to evaluate the chemical quality of soil, ballast, and/or groundwater that could be disturbed during construction activities. A licensed professional shall prepare a work plan describing how representative

samples of soil and ballast shall be collected and analyzed for potential contamination from the following potential sources of hazardous materials:

- Railroad corridors;
- Agricultural land;
- Existing roadways;
- Adjacent industrial properties.

Work plans shall be submitted to the appropriate oversight agency for review and approval. In accordance with the approved work plans, the site investigations shall be conducted and evaluated by a licensed professional. A technical report summarizing the field activities and analytical results shall be submitted to the appropriate oversight agency for review and approval.

- **MM-HAZ-3: Implement construction risk management plan (CRMP).** Prior to construction, SJJPA shall prepare a CRMP for the Project improvements that provides a framework for proper characterization and management of contaminated soil, ballast, and groundwater that could be disturbed during construction activities. The CRMP shall describe how to meet the following key objectives:
 - Identify various scenarios under which soil and railroad ballast generated during construction can be safely reused;
 - Identify maximum acceptable contaminant levels to protect workers, passengers, the public, and ecological receptors for each soil and ballast reuse scenario;
 - Identify maximum acceptable contaminant levels to protect station workers and passengers potentially exposed to vapor intrusion, if any, from soil or groundwater contamination;
 - Identify sampling and analysis, stockpiling, transportation, health and safety, and other procedures by which soil and ballast must be managed in order to meet safety, regulatory and other standards; and
 - Define how the groundwater that would be encountered during construction (if any) shall be characterized, properly managed, and discharged or disposed to a permitted facility.

Based on the analytical results of the site investigations required under MM-HAZ-2, maximum acceptable contaminant levels shall be established for the following soil and ballast reuse scenarios:

- “Unrestricted Onsite Reuse,” in which soil and ballast excavated from the project footprints can be reused anywhere onsite;

- “Station Reuse,” in which soil and ballast excavated from the Project Footprints can be reused in station areas where there is anticipated to be relatively frequent potential exposure;
- “Right-of-Way Reuse,” in which soil and ballast excavated from the Project Footprints can be reused in areas where there is anticipated to be relative infrequent potential exposure along the ROW of the tracks; and
- “Encapsulation”, in which soil and ballast excavated from the Project component footprints can be reused under barriers or other structures (and covered on all exposed sides by clean material).

To protect ecological receptors, the reuse scenarios shall incorporate additional limitations, as necessary, near creeks, surface waters, or other aquatic habitats based on the findings of an ecological risk assessment. Soil or ballast that contains chemical constituents at levels greater than the acceptable reuse scenarios shall be disposed of in accordance with RCRA and Cal. Code Regs. at a facility permitted to accept the waste. Imported fill materials shall be characterized to demonstrate they satisfy the criteria for “Unrestricted Onsite Reuse” established in the CRMP.

All extracted groundwater shall be considered potentially affected and require characterization to determine the appropriate treatment requirements (if necessary) for discharge or disposal. The extracted groundwater shall be collected and managed for disposal or treatment prior to discharge in compliance with local and state regulations and permit requirements. Based on the preliminary groundwater analytical results from the site investigations required under MM-HAZ-2, groundwater discharge and disposal options may include the following:

- Discharge directly to receiving waters;
- Discharge to the local sanitary sewer system;
- Discharge to the storm drain system; and
- Disposal/recycling at an appropriately permitted offsite facility.

Health and safety procedures described in the CRMP shall include requirements for an air quality monitoring program during excavation in areas with elevated contaminants of concern to ensure that fugitive dust emissions do not pose an unacceptable health risk to workers or the public. The air monitoring program shall identify action levels for total particulates that require respiratory protection, implementation of engineering controls, and ultimately work stoppage. This monitoring program shall be in addition to the fugitive dust controls required by the SJVAPCD.

A licensed professional shall prepare the CRMP and submit it to the appropriate oversight agency for review and approval prior to construction. The approved CRMP shall be implemented during construction of the Project.

Implementation of Mitigation Measures MM-HAZ-1, MM-HAZ-2, and MM-HAZ-3 would greatly reduce impacts related to the release of hazardous materials. Therefore, construction impacts that would create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant with mitigation incorporated.

Operational Impacts

As described earlier, the Project will not increase San Joaquin or HSR train service. As such, there will be no increase in the routine use of train fuels or risk of accidental spills related to train service. Minor maintenance would occur at the station that would involve vehicles or equipment carrying fuels and handling of cleaning materials, but all maintenance activities would be done in compliance with state and federal handling requirements. The Project would also reduce the potential for roadway accidents through the net reduction of VMT. The risk of accident conditions, including the accidental release of hazardous materials, are therefore not expected to increase as a result of the Project. In fact, they are likely to experience a net reduction due to the reduction of VMT.

As discussed for Impact 3.9.1 above, there is a robust framework of federal, state, and local regulations outside of CEQA that are applicable to the storage, use, and disposal of hazardous materials. Compliance with these regulations would reduce the likelihood of accidental spill or releases due to mishandling or poor storage practices during Project operations. Thus, adherence to federal and state regulations and the Unified Program reduces the risk of accidental releases of hazardous materials. Compliance with existing regulations and the Unified Program is mandatory; therefore, operation and maintenance of the Project is not expected to create a hazard to the public or the environment through the accidental release of hazardous materials. As a result, operational impacts that would create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment is considered a less than significant impact.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction activities associated with Phase 2 have the potential to result in releases of hazardous materials associated with accidental spills of hazardous materials used during construction, or from the disturbance of contaminated soils and groundwater that may be present at the site. These potential impacts are addressed in turn, below:

Accidental Spills: As discussed for Impact 3.9.1 above, construction of Phase 2 components of the Project would involve the routine use of hazardous materials associated with construction. The same regulatory framework that would reduce impacts from exposure to

chemicals during routine use, would also serve to minimize the risk of accidental spills or releases of such hazardous materials. Impacts would be less than significant.

Contaminated Soils and Groundwater: Construction of Phase 2 components of the Project would involve the disturbance of site soils and groundwater, which could result in the release of hazardous materials into the environment. Construction activities associated with the HSR Improvement components would be up to 10 feet depth in some places (e.g., for bridge abutments or poles supporting catenary lines), and therefore it is possible that groundwater may be encountered during construction. Potential sources of hazardous materials in the Project Footprint were reported in the Hazardous Materials Technical Report prepared for the Project (AECOM 2020). Potential sources of soil contamination within the Footprint for HSR Improvements components of the Project, which might be disturbed during construction, include:

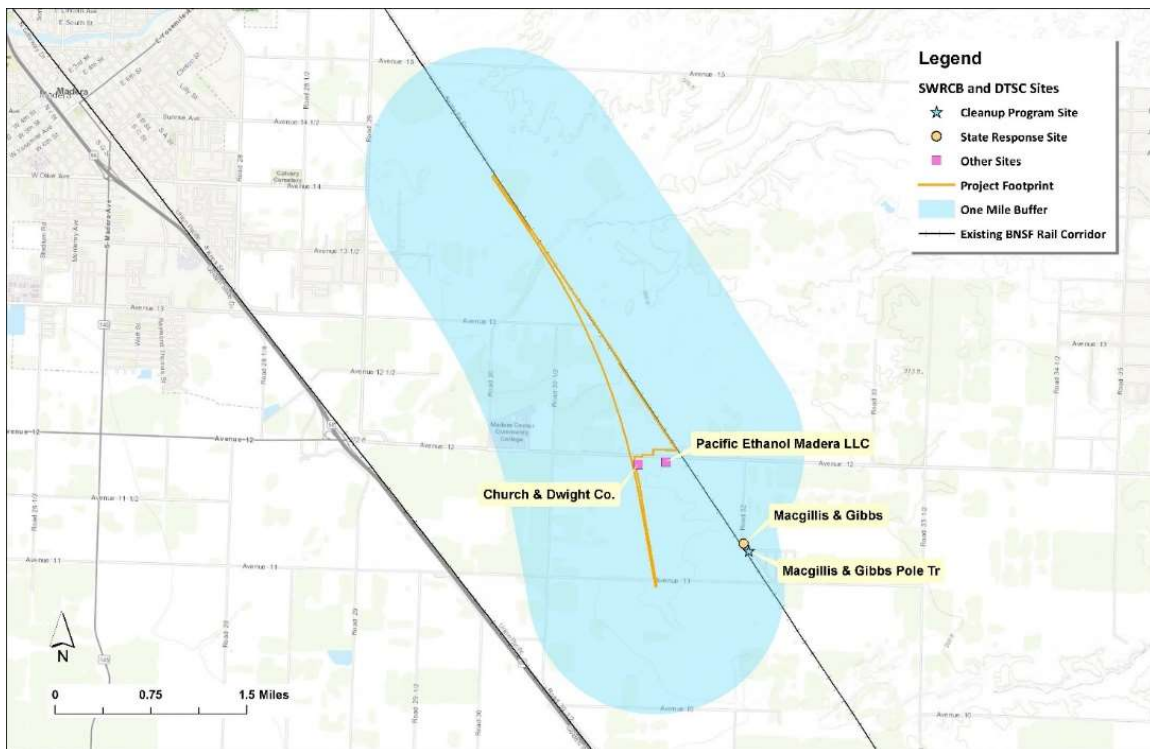
- Potential pesticide contamination in shallow soils or perched groundwater. The entire Project Footprint could contain elevated levels of pesticides due to past agricultural use of the land (AECOM 2020). Such contaminants could be encountered during ground disturbance associated with any Project features.
- Potential lead contamination in shallow soils adjacent to Avenue 12. Project components associated with construction of the permanent station access road and associated improvements to connect the access road to the Avenue 12 frontage road would disturb shallow soils adjacent to the Avenue 12 right-of-way (ROW), which could be contaminated with aerially deposited lead from vehicles using the ROW prior to the federal ban on leaded gasoline.
- Potential localized soil or groundwater contamination from unreported spills associated with industrial land uses adjacent to the Project Footprint. Portions of the new station siding track are within 100 feet of adjacent industrial sites (Dwight and Church Company, Inc. and Pacific Methanol Madera, Inc.), with the new track directly located on the western edge of the Dwight and Church Company, Inc. property. These activities have the potential to encounter localized soil or perched groundwater contamination that might have resulted from previous undocumented spills on those industrial sites.
- Construction of the HSR Improvements would not disturb the existing BNSF Corridor and therefore would not encounter potential contaminants in soil, ballast or hazardous building materials associated with historical rail operations.

If not appropriately managed, disturbance of contaminated soils, ballast, or groundwater during construction could result in the following impacts:

- Potential exposure of construction workers, via direct contact (dermal exposure or ingestion) with contaminated materials or inhalation of fugitive dust. This is a potentially significant impact.

- Potential exposure of nearby residents or the general public, via inhalation of fugitive dust. This is a potentially significant impact.
- Potential release of contaminated materials to the environment, through stormwater contact with excavated contaminated materials or inappropriate disposal of hazardous wastes. This is a potentially significant impact.

Figure 3.9-1 SWRCB and DTSC Sites



Source: Google; ESRI

Mitigation measures MM-HAZ-1, MM-HAZ-2, and MM-HAZ-3 (described above) would reduce impacts associated with potentially contaminated soil, ballast, and hazardous building materials during construction.

Implementation of MM-HAZ-1, MM-HAZ-2, and MM-HAZ-3 which would require a voluntary oversight agreement, site investigation, CRMP and fugitive dust controls would reduce impacts related to release of hazardous materials to less than significant. Therefore, construction impacts that would create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant with mitigation incorporated.

Operational Impacts

Operational activities associated with proposed HSR Improvements would have similar impacts relating to accidental release of hazardous materials as described for Relocated Station operations, above, except that the HSR would operate electric trains, not diesel, which would decrease the risk of foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, operational impacts that would create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment is considered a less than significant impact.

3.9.3. Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

There are no schools within a quarter mile of the Project Footprint. The nearest school is Cesar Chavez Elementary School, approximately 1.5 miles to the west. Because there are no schools nearby, the Project would not emit hazardous emissions or handle hazardous materials within a quarter mile of a school. Therefore, no construction impacts would occur that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Operational Impacts

Project operations would not occur within a quarter mile of a school. Therefore, no operational impacts would occur that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

3.9.4. Would the Project create a significant hazard to the public or environment as a result of being located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station and Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project Footprint is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (AECOM 2020). Therefore, no construction and operational impacts would occur that would create a significant hazard to the public or

environment as a result of being on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

3.9.5. Would the Project create a safety hazard or excessive noise for people residing or working in the project area as a result of being located within an airport land use plan or within two miles of a public or public use airport?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station and Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project Footprint is not within an airport land use plan, and there are no public or public use airports within two miles of the Project Footprint. The nearest public use airports are Madera Municipal Airport, approximately 5.5 miles to the northwest, and Sierra Sky Park Airport, approximately 7.5 miles to the southeast (FAA 2020). Because there are no airports nearby, the Project would not create an airport-related safety hazard or excessive noise for people residing or working in the Project area. Therefore, no construction and operational impacts would occur that would create a safety hazard or excessive noise for people residing or working in the Project area as a result of being located within an airport land use plan or within two miles of a public or public use airport.

3.9.6. Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station

Construction Impacts

The Madera County Emergency Operations Plan establishes the emergency management organization, identifies policies and responsibilities, and establishes operational concepts and procedures required to mitigate any emergency or disaster affecting Madera County (Madera County 2010). The plan does not identify specific emergency evacuation routes.

During the construction of Phase 1 components, staging areas and construction activities would not occur within public roadways. Access to construction sites would occur via the proposed access road that would primarily run adjacent to the CAHSR Project right-of-way and would connect to the new elevated section of Avenue 12 via a ramp structure on the north side of new grade-separated section of Avenue 12, which is being constructed as part of the CAHSR Project. There could be limited, temporary road closures, and road construction that could potentially cause increased traffic congestion in areas where emergency vehicles operate. Emergency vehicles traveling on streets that cross the railroad right of way using existing at-grade crossings would experience delays by gate-down events; however, the duration of individual gate-down events would be unchanged from existing

conditions. This increase in potential frequency is not anticipated to cause significant disruption to emergency services or response. These improvements could potentially disrupt traffic during construction activities and interfere with emergency response or evacuations. These impacts are not expected to be substantial as they would be temporary and occur in stages. Additionally, traffic control plans would address any impacts related to access, as described in Section 3.17 Transportation. Therefore, construction impacts that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan there would be less than significant impacts.

Operational Impacts

Operation of Phase 1 components would increase traffic along Avenue 12, as discussed further in Section 3.17 Transportation. However, congestion from passengers driving to and from the Relocated Station is not anticipated to cause delays to emergency vehicles response times. Emergency vehicles often identify and use multiple routes dependent on time of day and traffic conditions. Peak period traffic congestion generally does not result in delay for emergency vehicles, which have the right-of-way and often utilize multi-lane major arterials for access.

Therefore, operational impacts that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan would be considered a less than significant impact.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Staging areas and construction activities for HSR Improvements during Phase 2 would primarily occur within CHSRA property and within private property, with some work within the ROW for Avenue 12 and the new roadway currently under construction as part of the CAHSR Project. There could be limited, temporary road closures, and road construction that could potentially cause increased traffic congestion in areas where emergency vehicles operate. These improvements could potentially disrupt traffic during construction activities and interfere with emergency response times. These impacts are not expected to be substantial as they would be temporary and occur in stages. Additionally, traffic control plans would address any impacts related to access, as described in Section 3.17. Construction impacts that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan there would be less than significant impact.

Operational Impacts

Operational activities during Phase 2 would have similar impacts as described for Relocated Station operations, above, with respect to potential impediment of emergency response plans from passenger traffic accessing the HSR Improvements. Therefore, operational impacts that would impair implementation of or physically interfere with an adopted

emergency response plan or emergency evacuation plan would be considered a less than significant impact.

3.9.7. Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Based upon review of CAL FIRE's Fire and Resource Assessment Program fire hazards severity zone maps for Madera County, the Project Footprint is partly within a "moderate" fire hazard severity zone, and partly within an "unzoned" area (CAL FIRE 2007). Therefore, construction of the Project would not occur within high or very high wildland fire risk areas. In addition, all construction activities would be conducted in accordance with all requirements established by the County Fire Marshal's office, local jurisdictions and other applicable fire code regulation for the construction of the Project. Therefore, no construction impacts would occur that would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Operational Impacts

Operation of the Project would not occur within high or very high wildfire risk areas. Nonetheless, operation of the new station would be in compliance with applicable building code and fire code regulations. These include installing sprinkler systems, installing and maintaining fire extinguishers, fire alarm systems, and using fire retardant building materials. Buildings would be constructed in accordance to the California Building Code and California Fire Code, which would reduce fire hazards. CAHSR facilities would also be in compliance with the California Public Utilities Commission General Order No. 176, Rules for Overhead 25kV AC Railroad Electrification Systems for High-Speed Rail System (CPUC 2015). Therefore, no operational impacts would occur that would expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

3.10. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
impede or redirected flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

3.10.1. Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Determination: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

The state waterboard and regional authorities have set forth existing water quality regulations with which the Project would be required to comply. Since earthwork activities – clear and grubbing, excavation, and grading the site- would disturb over one acre of soil, the Project would be required to obtain a National Pollutant Discharge Elimination System (NPDES) construction permit through the State Water Resources Control Board’s (SWRCB) Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). Approvals would be granted by the Central Valley Regional Water Quality Control Board (CVRWQCB).

To ensure that water quality is protected, the General Permit would require that the Project develop and implement a Storm Water Pollution Prevention Plan (SWPPP) as the primary compliance mechanism. The SWPPP’s objectives is to identify the sources of sediment and pollutants that affect the quality of storm water discharges and to ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in storm water discharges. The SWPPP would include BMPs that address source control, BMPs that address pollutant control, and BMPs that address treatment control. Typical Construction BMPs established in Madera County include:

- Cover loose stockpiled construction materials (soils, spoils, aggregate, etc.)
- Store chemicals in watertight containers
- Sediments on site to follow California Stormwater Quality Association (CASQA) Construction BMP Guidance Handbook. This may include watering for dust control, placement of straw bales, and sediment basins.
- Grading activities should occur between May 1st through Nov 30th as much as possible.
- Control runoff through sediment basins, silt traps, or similar measures.
- Slope construction should avoid being steeper than 1:1 and fills 1.5:1
- Temp Mulching

SWPPP plans would be developed in compliance with the NPDES Construction Permit to maintain the water quality standards for surface water, Cottonwood Creek, and for any storm water events. Waste discharge is not anticipated for the Project elements. Since the Project would need to comply with existing regulations and BMPs related to water quality standards, construction impacts related to a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality would be less than significant.

As discussed in Section 3.7 Hazards and Hazardous Materials, excavation and structural foundations for station structures, and Phase 2 elements including a new rail bridge at Cottonwood Creek and the OCS pole foundations, are not anticipated to exceed 30 to 50 feet in depth. Although groundwater table in the Project area has fluctuated between 150 and 300 feet below ground surface (DWR 2020), groundwater may be encountered during excavation due to reports of perched lenses (TRC 2015). Potential sources of hazardous material contamination within the proposed Footprint might be disturbed during construction, including:

- Potential pesticide contamination in the groundwater may occur due to the historic agricultural land use.
- Potential heavy metals (especially arsenic), petroleum hydrocarbon, or polyaromatic hydrocarbon contamination in shallow soils, railroad ballast materials, or shallow perched groundwater.
- Potential hazardous building materials (e.g., creosote-treated railroad ties). Such hazardous building materials could be encountered during ground disturbance associated with proposed track work within the existing rail corridor.

Mitigations measures are described in Section 3.9 Hazards and Hazardous Materials that would reduce these impacts to groundwater to less than significant. Therefore, construction impacts related to a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade groundwater quality would be less than significant.

Operational Impacts

Phase 2 of the Project would introduce new impervious surfaces that result in an increase of stormwater and or dry weather runoff. Impermeable surfaces from the concrete station platform, paved roadways, parking lot, and bus depot would replace permeable surfaces previously associated with agricultural land use. Storm water runoff from the adjacent historic agricultural soils can include elevated concentrations of fertilizer, pesticides, and herbicides into the stormwater system. The release of these pollutants could result in potential water quality impacts.

Mitigation Measures

- **MM-HYD-1. Project Design Drainage Features.** To reduce runoff volumes and pollutants entering receiving waters, a licensed Professional Engineer (PE) registered in the state of California shall design a stormwater quality system that meets the standards set forth in the County of Madera's Stormwater Resource Plan (SWRP). A full capture system shall be designed to contain all stormwater runoff from impervious surfaces and treats the stormwater to State discharge standards for industrial operations. Through the County of Madera's SWRP, the State Water Resources Control Board has indicated that the following BMPs should be considered for full capture systems:
 - Bioretention
 - Infiltration Trench
 - Infiltration Basin
 - Detention Basin
 - Media Filter
 - Storm water Capture and Use

The system shall account for flooding potential in FEMA designated zones and be designed to meet the flow capacity. Per the County of Madera Grading and Erosion Control Permit, if the complexity of the project requires additional information, the design shall provide drainage flow computations with volume of runoff to and from the site. The drainage system shall be reviewed and approved by the County of Madera prior to the approval of the Grading and Erosion Control Permit.

With the implementation of MM-HYD-1 operational impacts related to a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality would be less than significant. In addition, groundwater would not be encountered during operations of the Project. Therefore, no operational impacts would occur related to a violation of any water quality standards or waste discharge requirements or otherwise substantially degrade groundwater quality.

3.10.2. Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquin Relocated Station

Construction Impacts

The Project Footprint is within the Madera Groundwater Subbasin which is a part of the larger San Joaquin Valley Groundwater Basin. The Sustainable Groundwater Management Act (SGMA) is a landmark law that empowers local agencies to sustainably manage their

groundwater and authorizes the State Water Board intervention if local agencies are unable to do so. The Madera Subbasin Coordination Committee has created the Madera Subbasin Joint Groundwater Sustainability Plan that has generated a water budget to ensure the sustainable recharge of the groundwater aquifer.

During construction of Phase 1, the Project Footprint would remain similarly pervious as it currently exists. Construction would introduce some temporary impervious surfaces including equipment and materials stored on site but would have minimal impact in the percolation of natural precipitation and overall recharge of the aquifer.

Construction activities would not require the use or extraction of groundwater supplies but may encounter some existing groundwater. While the groundwater table fluctuates between 150 and 300 feet from the ground surface, there are some occurrences of perched lenses in the area, wherein reported groundwater is witnessed at levels between 3 and 27 feet below the ground surface. The maximum subgrade depth of construction activities and footings for this phase would not exceed 12 feet. In the event the construction encounters groundwater (if any), dewatering activities would have the maximum potential to affect up to 9 feet of depth of water in over 7.5 acres of land as described in Impact 3.10.3 Relocated Station Operational Impacts below. The Madera Subbasin Ground Surface Management plan water budget allows for an overall extraction of 439,000 acre-feet per year. The construction of the Relocated Station would have the potential to impact up to 67.5 acre-feet of groundwater if dewatering is necessary. This would represent .0154% of the overall annual water budget for the Madera Subbasin. Comparatively, this would represent a less than significant impact to the groundwater recharge of the Madera Subbasin. In addition, the SGMA allows State intervention in the event that the local agencies are unable to manage the groundwater sustainability. Therefore, construction impacts related to substantially decreasing groundwater supplies or interfering substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin would be less than significant.

Operational Impacts

The concrete station platform and canopies, paved access road, bus depot, and parking area would alter the permeability of the existing conditions. Phase 1 would introduce approximately 7.5 acres of impermeable surfaces to existing conditions that are agricultural and permeable. The Madera Subbasin underlies approximately 350,000 acres. Comparatively the impermeable surfaces introduced by the proposed buildout would be 0.0021% of the entire subbasin's area. An increase in impervious surfaces due to the Project would have a minimal impact in the percolation of natural precipitation and the overall charge of the Madera Subbasin. Operations of this Project would not require the extraction of groundwater supplies and does not require any form of excavation. Therefore, operational impacts related to substantially decreasing groundwater supplies or interfering

substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin would be less than significant.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction activities associated with HSR Improvements during Phase 2 would have similar impacts to construction during Phase 1 and described in Impact (3.10.2) above. An additional 11 acres of buildout for the HSR platform, parking lot, and roadways could potentially impact up to 99-acre feet of groundwater in dewatering activities (if any). This would represent .0225% of the overall annual groundwater water budget to the Madera Subbasin and be less than significant due to a comparative analysis and the regulations set forth by state regulation through SGMA.

Operational Impacts

Operational impacts associated with HSR Improvements during Phase 2 would have similar impacts to the operations described in Phase 1 Impact (3.10.2) above. Phase 2 would introduce 18.3 acres of additional impermeable surfaces and contribute to a cumulative total of 25.8 acres of impermeable surfaces when accounting for the 7.5 acres described in Phase 1. The cumulative total of impermeable surface introduced from both Phases would represent 0.0074% of the Madera Subbasin's 350,000 acres. Operational impacts related to substantially decreasing groundwater supplies or interfering substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin would be less than significant.

3.10.3. Would the Project impede or redirect flood flows?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station

Construction and Operational Impacts

Construction activities related to Phase 1 is determined to fall in Federal Emergency Management Agency (FEMA) Zone-X (Figure 3.10-1). Zone-X is an area of minimal flood hazard and therefore has no impact in impeding or redirecting flood flows. Therefore, no construction and operational impacts would occur that would impede or redirect flood flows.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the HSR Improvements during Phase 2 would occur in partially in FEMA designated Flood Zone AO and AE (Figure 3.10-1). Flood Zone AO is identified as areas subject to inundation by 1-percent-annual-chance of shallow flooding where average depths

are between one to three feet. FEMA identifies Flood Zone AE as areas subject to inundation by the 1-percent-annual-chance flood event. Approximately 475 feet of at-grade guideway would be built on Flood Zone AO and 250 feet of the aerial and at-grade guideway would be built on Flood Zone AE.

The removal of vegetation that acts as an erosion barrier and the movement of earthwork would potentially alter the drainage patterns that would impede or redirect flood flows. As discussed in Impact (3.10.3), construction would be regulated through the requirements of the NPDES General Construction Permit through the Regional State Water Quality Board. SWPPP and BMPs would be utilized to prevent the impediment or redirection of flood flows. Therefore, construction impacts that would impede or redirect flood flows would be less than significant.

Operational Impacts

Operations of HSR trains to Relocated Station during Phase 2 would occur in partially in FEMA designated Flood Zone AO and AE (Figure 3.10-2). Approximately 475 feet of at-grade guideway would be built on Flood Zone AO and 250 feet of the guideway, with both at-grade and aerial components would be operating on Flood Zone AE adjacent to Cottonwood Creek.

According to the California High-Speed Train Project EIR/EIS Merced to Fresno Section, Chapter 3.8 Hydrology and Water Resources, placing at-grade sections on embankments with culverts adequately sized and placed would avoid intensifying flood or drainage problems. The new HSR rail bridge at Cottonwood Creek would be designed similar to the existing rail bridge constructed as part of the CAHSR Project, though would be narrower as the new rail bridge would be only for a single track. Designs would maintain existing hydraulic capacity to prevent operational impacts on hydrology and prevent channel erosion and flooding.

The Central Valley Flood Protection Board (CVFPB) requires that stream crossings meet the provisions of Title 23 of the California Code of Regulations wherein crossings maintain stream channel flow capacity. In Zone AE areas, the County of Madera also requires the certification by a registered civil engineer to demonstrate that the proposed development shall not result in any increase in flood levels during the occurrence of the base flood discharge. The design of the Cottonwood Creek Bridge would account for storm drain features so that they are adequately sized to prevent flooding or issues in drainage. According to the Madera County Local Hazard Mitigation Plan, conditions imposed on the development would protect the property at a 100-year level of protection consistent with the current Central Valley Flood Protection Plan or the FEMA standard of flood protection. Through state regulation on design standards, impacts on flood flows would be minimized. Therefore, operational impacts that would impede or redirect flood flows would be less than significant.

3.10.4. In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to project inundation?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station

Construction and Operational Impacts

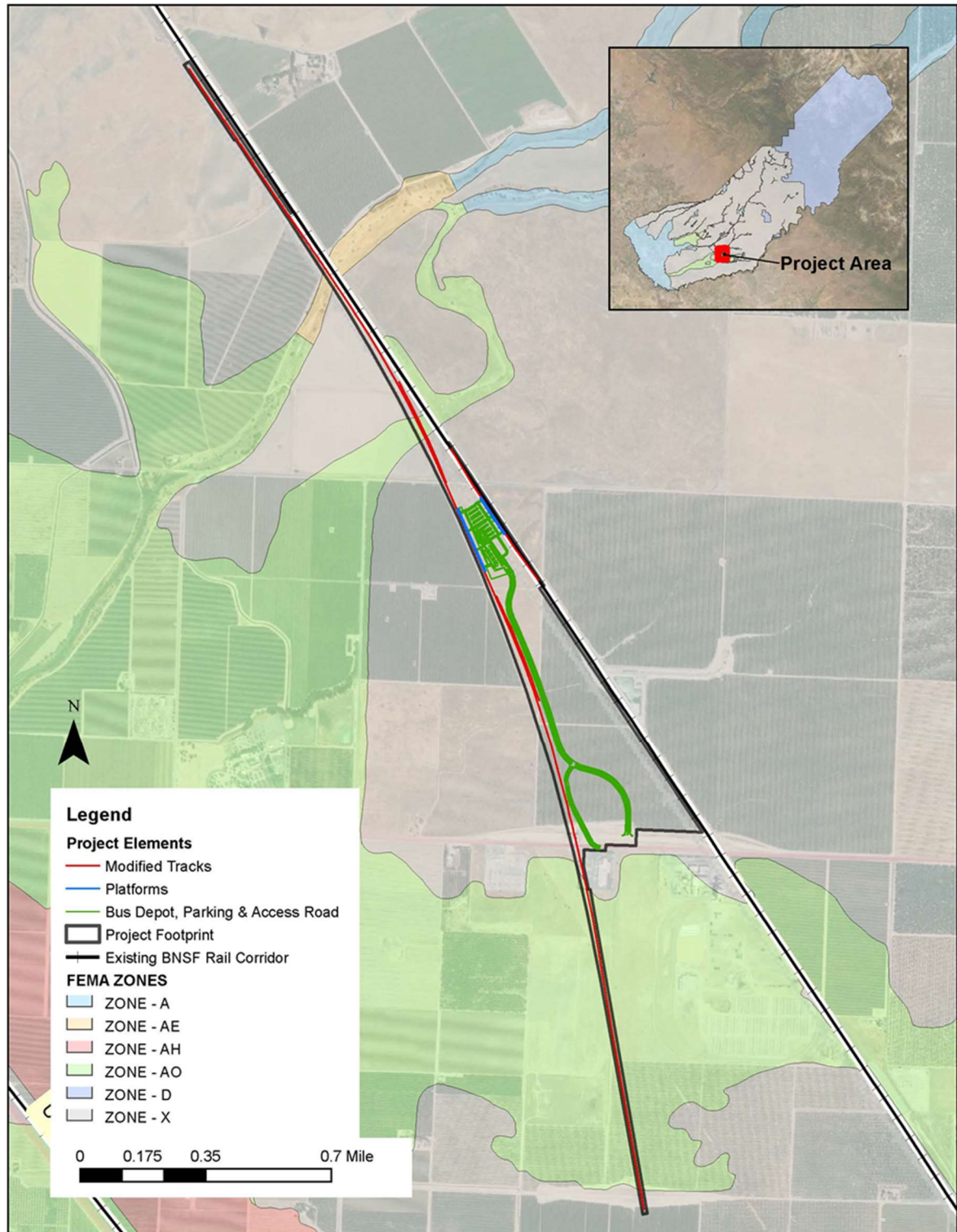
There are no impacts for Phase 1 for the risk of release of pollutants due to Project inundation. The nearest tsunami zone to the Project is approximately 100 miles away in Monterey County. The Madera County General plan has noted that seiches are not a great concern in Madera County and the closest known seiche hazard is approximately 140 miles away at Lake Tahoe. According the Madera County General Plan, the Project is within Hidden Dam's inundation zone which is approximately 12 miles from the Project site. However, the County notes that dam failure is an unlikely occurrence due to routine monitoring and maintenance of the dam's structural integrity. As noted in Impact (3.10.3) the Relocated Station does not fall within a FEMA flood hazard zone. As such, no construction and operational impacts would occur related to the risk of release of pollutants due to inundation.

Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Similar to the impacts described for Impact (3.10.4) for Phase 1 construction impacts, there are no impacts related to tsunami, seiches, or dam inundation for Phase 2. As discussed in Impact (3.10.3), portions of the new station siding track would be in FEMA designated zones AO and AE. Earthwork and grading activities would disturb existing soils that are potentially contaminated from previous uses in agriculture. The NPDES General Construction Permit would require implementation of BMPs including the management of soil stockpiles. Therefore, construction impacts related to the risk of release of pollutants due to inundation would be less than significant.

Figure 3.10-1 FEMA Flood Zones



Source: FEMA, 2017

Operational Impacts

Impacts related to the HSR Improvements during Phase 2 would be similar to those described Impact (3.10.4) Phase 1 construction impacts, there are no impacts related to tsunami, seiches, or dam inundation. Portions of the new station siding track associated with Phase 2 would be in FEMA designated zones AO and AE. Accidental release of hydrocarbons onto the guideway, related to the routine maintenance of the high-speed rail locomotive, may result in additional pollutants released in an inundation. As discussed in Section 3.7.1, robust federal and state regulatory framework would make this impact less than significant. Therefore, operational impacts related to the risk of release of pollutants due to inundation would be less than significant.

3.10.5. Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operation Impacts

The construction and operation of the Project would not conflict or obstruct with implementation of water quality control plans or sustainable groundwater management plans set forth by state and regional authorities. The Project falls within the authority of the Central Valley RWQCB. At a minimum, local water management plans comply with these thresholds to meet water quality standards. The Madera Storm Water Resource Plan coordinates storm water management strategies for the entire County to reduce runoff volumes and pollutants in receiving waters. The Madera County General Plan also presents policies for water quality that is codified into law. The Project would abide by water quality regulations promulgated by State and regional authorities chiefly through compliance with the NPDES General Construction Permitting Process as discussed in Impacts (3.10.1, 3.10.3, 3.10.4.)

The Madera Subbasin Coordination Committee finalized a Joint Groundwater Sustainability Plan in January 2020 under the Sustainable Groundwater Management Act of 2014. While Project construction may encounter groundwater, and operations introduce some impervious surface features that affect percolation, a comparative analysis would not significantly impact the water budget set forth by the Madera Subbasin Joint Groundwater Sustainability Plan. As discussed in Impact (3.10.2), impacts are considered less than significant. Therefore, construction and operational impacts that would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan would be less than significant.

3.11. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.11.1. Would the Project physically divide an established community?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station

Construction and Operational Impacts

The Project elements of Phase 1, including trackwork, platform, parking, and bus depot, would be constructed on undeveloped land, while the planned access road would be built on agricultural land (See Figure 3.11-1). Trackwork in Phase 1 would be constructed immediately adjacent to the existing BNSF Corridor. The Madera Community College Center is approximately 1.5 miles southwest of the Relocated Station site and is located on the north side of Avenue 12. Industrial uses are along the south side of Avenue 12 include two chemical plants and an electrical substation. No established communities are near the Relocated Station. The closest established communities are Parksdale, approximately 1.5 miles northwest of the Relocated Station site and Trigo, approximately 2 miles to the southeast. Given these factors, construction of Phase 1 would not divide any established communities.

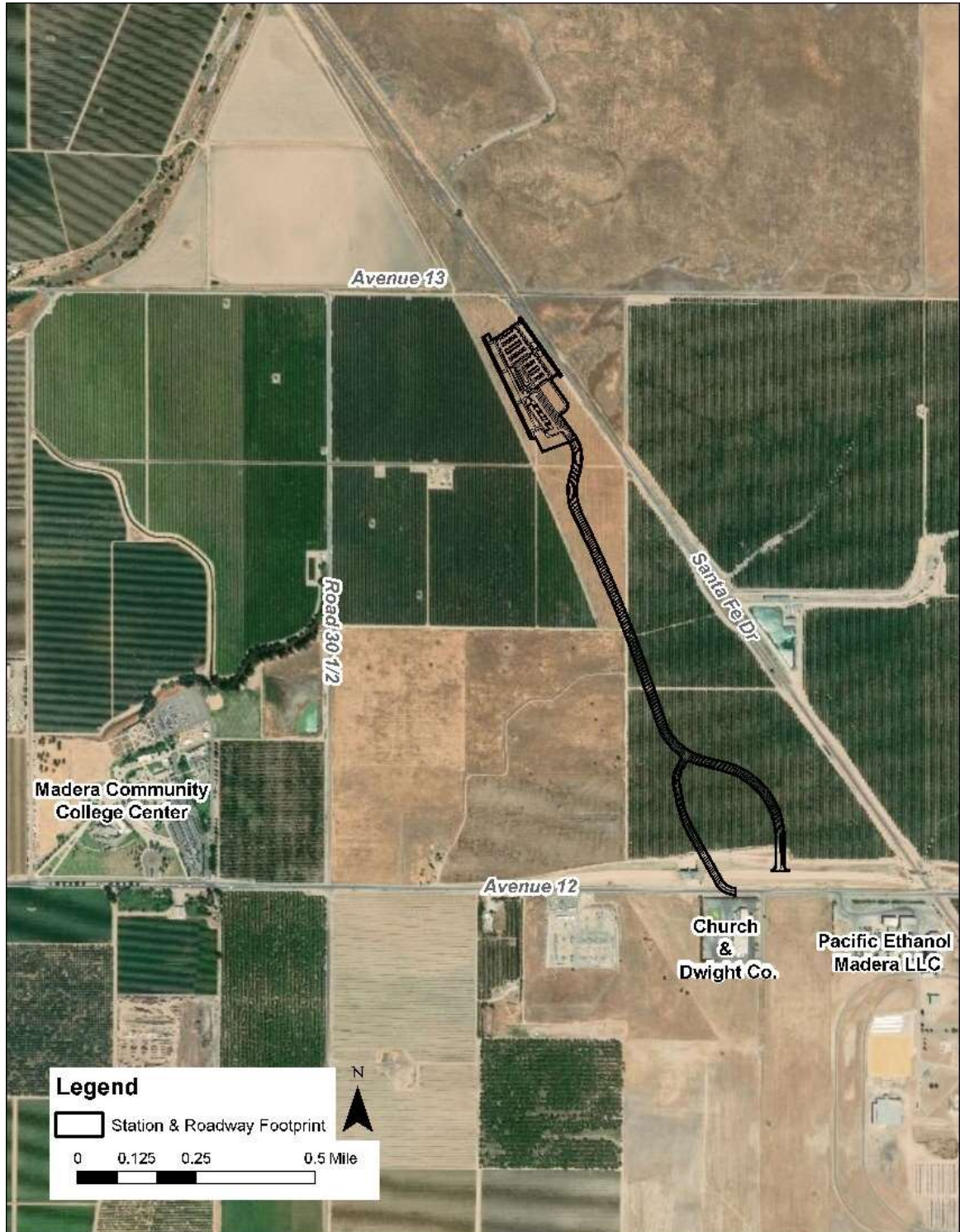
In relation to the Phase 1 operations, San Joaquins trains would run along the proposed station siding track (located adjacent to the existing BNSF mainline to the north and south of the platform) to access the Relocated Station. Given the operation would run adjacent to the BNSF corridor, no established communities would be divided. Rather, the Project would have a beneficial impact by providing greater ridership potential, transit connectivity, potential for TOD, and better access to SR-99 and the City and County of Madera.

Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The HSR platform, to be constructed during Phase 2, would be approximately 365 feet west of the northerly edge of the proposed platform built during Phase 1. All trackwork related to the station siding track constructed in Phase 2 to allow HSR trains to access the Relocated Station would be located immediately east of the currently under construction CAHSR Project (i.e. the HSR mainline) and would not intersect with any existing communities. Future HSR train service would operate along this station siding track within the Project Footprint. Therefore, no construction and operational impacts would occur related to physically dividing an established community. Overall, the Project would not divide an established community.

Figure 3.11-1 Existing Land Use



Source: Google; ESRI

3.11.2. Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Much of the Project Footprint area falls within the adopted SCCC Specific Plan boundaries (see Figure 2-1). This subarea of the Project Footprint includes the station platforms, parking, access road and other station facilities. Trackwork associated with Phase 2 extends beyond the SCCC Specific Plan boundaries, which extend north of Cottonwood Creek and south of Avenue 11.

As envisioned in the SCCC Specific Plan, the 1,867-acre area could accommodate significant new residential development, as well as commercial, light industrial/business park, and professional office space uses. Additionally, and relevant to the Project, a transit station is identified that would include passenger rail service in the southeast portion of the SCCC Specific Plan area immediately adjacent to the BNSF Corridor near Avenue 12 (Madera County 1995, 2015). Overall, the SCCC Specific Plan provides considerable opportunity for future Transit-Oriented Development (TOD) in the areas in the vicinity of the Project.

The boundaries of the adopted SCCC Specific Plan are also contiguous to the Madera State Center New Growth Area, which have a unique set of land-use policies contained within the General Plan and are described later in this section (Madera County 1995, 2015). Finally, the SCCC Specific Plan established a set of land use designations which have been fully incorporated into the Madera County General Plan.

Land Use Designations contained in the Madera County General Plan that fall within the Project Footprint, including the subset of the Land-Use Designations contained in the Madera SCCC Specific Plan, are shown in Figure 3.11-2 below and include:

- Very Low Density Residential (VLDR);
- Low Density Residential (LDR);
- Open Space (OS);
- Public Institution (PI);
- Community Commercial (CC);
- Transit Station (TS);
- Agriculture Residential (AR), for areas of the Project Footprint north of Avenue 13 where trackwork will take place (outside of the SCCC Specific Plan area);

- Heavy Industrial (HI), for areas of the Project Footprint north of Avenue 13 where trackwork will take place (outside of the SCCC Specific Plan area).
- Agriculture (A), for areas of the Project Footprint in the vicinity of Avenue 11 where trackwork will take place (outside of the SCCC Specific Plan area).

The Very Low Density Residential and Low-Density Residential Land Use Designations provide for single-family detached and attached homes, secondary residential units, bed-and-breakfast establishments, limited agricultural uses, and public and quasi-public uses (Madera County 2015). The Open Space Land Use Designation provides for agricultural uses, agriculturally-oriented services, timber production, mineral extraction, airstrips, public and commercial refuse disposal sites, recreational uses, public and quasi-public uses, and similar and compatible uses and identifies areas typically unsuitable for human occupation due to public health and safety hazards or areas containing wildlife habitat and other environmentally-sensitive features (Madera County 2015). The Public Institution Land Use Designation provides for institutional uses such as colleges, schools, and hospitals, and the Community Commercial Institution land use designation provides for retail, wholesale, professional and administrative offices, public and quasi-public uses (Madera County 2015). The Agriculture Residential Land Use Designation provides for single family detached homes, secondary residential units, limited agricultural uses, public and quasi-public uses, and similar and compatible uses. The Heavy Industrial Land-Use Designation provides for industrial parks, warehouses, manufacturing, airports and airstrips, outdoor theaters, public and quasi-public uses, and similar and compatible uses.

Both the Relocated Station site and access roadway are zoned by the County as ARE-40 (Madera County 2020). The ARE-40 zoning district is intended to preserve agricultural lands (Chapter 18.53 of Title 18 in the County's Municipal Code) (Madera County 2020). The Relocated Station platform, parking areas, and bus bays would be on undeveloped land (Assessor's parcel numbers 047-070-022 and 047-070-027), and the access roadway would be on land under agricultural production (Assessor's parcel number 047-080-002). As discussed further in Section 11, "Agricultural and Forestry Resources," the access roadway would require approximately 6 acres along the western portion of a 595-acre parcel leaving 499 acres (99 percent) available for agricultural production and the parcel would remain designated as AE and zoned as ARE-40.

The Madera County General Plan was adopted on October 24, 1995 by Board of Supervisors. The primary purpose of the General Plan is to analyze local and regional conditions and needs to respond effectively to the problems and opportunities facing the community; define the community's environmental, social, and economic goals; record the local government's policies and standards for the maintenance and improvement of existing development and the location and characteristics of future development; and foster the coordination of community development and environmental protection activities among local, regional, state, and federal agencies in Madera County.

In addition to the land use designations that apply to the Project Footprint, the following Madera County General Plan goals and policies are applicable to the Project (Madera County 2015):

- **Goal 2.A:** To maintain a comprehensive and coordinated multimodal transportation system that enhances the mobility of people, improves the environment, and is safe, efficient, and cost effective.
 - **Policy 2.A.1.** The County shall encourage, where appropriate, development of an integrated, multi-modal transportation system that offers attractive choices among modes including pedestrian ways, public transportation, roadways, bikeways, rail, and aviation.
 - **Policy 2.A.2.** The County shall develop the transportation system to reduce vehicle miles traveled, conserve energy resources, minimize air pollution, and reduce greenhouse gas emissions.
 - **Policy 2.A.5.** The County shall require that land use form and transportation systems in designated new growth areas be designed to provide residents and employees with the opportunity to accomplish many of their trips within the new growth area by walking, bicycling, and using transit.
 - **Policy 2.A.6.** The County shall require that transportation systems and improvements planned and constructed in designated new growth areas provide links to transportation systems outside the new growth area and address impacts on transportation facilities outside the new growth area.
- **Goal 2.D:** To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Madera County.
 - **Policy 2.D.6.** The County shall encourage the development of facilities for convenient transfers between different transportation systems. (e.g., train-to-bus, bus-to-bus).
- **Goal 5.A:** To designate adequate agricultural land and promote development of agricultural uses to support the continued viability of Madera County's agricultural economy.
 - **Policy 5.A.5.** The County shall allow the conversion of existing agricultural land to urban uses only within designated urban and rural residential areas, new growth areas, and within city spheres of influence where designated for urban development on the General Plan Land Use Diagram.

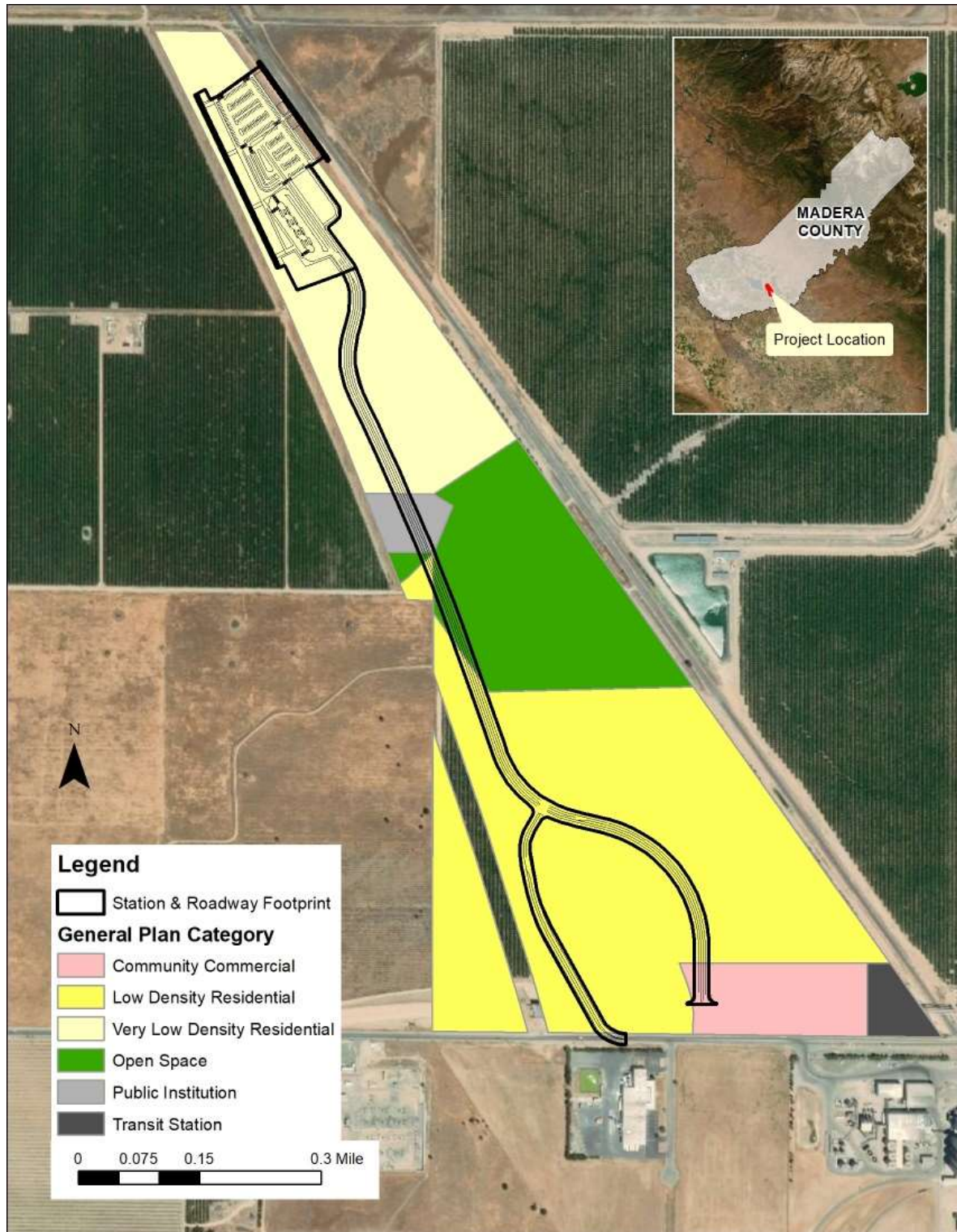
The Project would be consistent with the County's General Plan Policies 2.A.1 and 2.A.2, which encourage development of an integrated, multi-modal transportation system that reduces vehicle miles traveled, conserves energy resources, minimizes air pollution, and reduces greenhouse gas emissions, and General Plan Policy 2.D.6, which encourages the development of facilities for convenient transfers between different transportation systems.

In addition, the Project would be consistent with the County's General Plan Policy 2.A.5, which requires land use form and transportation systems in designated new growth areas be designed to provide residents and employees with the opportunity to accomplish trips within the new growth area by walking, bicycling, and using transit, and Policy 2.A.6, which requires transportation systems and improvements planned and constructed in designated new growth areas provide links to transportation systems outside the new growth area. As stated above, the Relocated Station is within the SCCC Specific Plan. The SCCC Specific Plan identifies a transit station that could accommodate rail service adjacent to the BNSF line near Avenue 12. Although the access road would be on active agricultural lands, Madera County General Plan Policy 5.A.5 states the County may allow the conversion of existing agricultural lands within New Growth Areas and is already designated for residential, open space, public institution, and community uses in the General Plan (Madera County 2015).

In 2018, the Madera County Transportation Commission approved the 2018 Regional Transportation Plan/Sustainable Communities Strategy (2018 RTP/SCS). The 2018 RTP/SCS ensures that the region's transportation system and implementation policies/programs would safely and efficiently accommodate growth envisioned in the General Plan Land Use Elements of the Cities of Chowchilla and Madera and Madera County over a 20-year planning horizon (Madera County Transportation Commission 2018). The 2018 RTP/SCS includes goals, objectives, and strategies to improve mobility and reduce travel demand and the growth in vehicle miles traveled and associated greenhouse gas emissions. The 2018 RTP/SCS also includes projections for the location of growth in the region and estimates of changes in population, housing, and employment.

The Project, which is included in the 2018 RTP/SCS, would support the goal to promote intermodal transportation systems that are fully accessible, encourage quality and sustainable growth and development, support the region's environmental resource management strategies, and are responsive to the needs of current and future travelers. As discussed further below, the Relocated Station would provide opportunities for transit services to the existing and expected future growth of the City of Madera and Madera County.

Figure 3.11-2 General Plan Land Use Designations



Source: County of Madera 2019

In summary, the Project (both Phases 1 and 2) would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Instead, the Project would support the goals and policies of the Madera County General Plan, SCCC Specific Plan, and the 2018 RTP/SCS. It should also be noted that any land use inconsistencies are not physical effects on the environment under CEQA unless they relate to potentially significant physical impacts on other environmental resources. Impacts on other environmental resources and issue areas are addressed in other environmental topic sections of this IS/MND. Therefore, no construction or operational impacts would occur that would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The SJJPA, as the proponent of the Project, supports and encourages the local planning policies of the County of Madera and the City of Madera to increase residential density in order to reduce the amount of sprawl as growth continues in the Central Valley. While the SJJPA does not have authority over the type of land use development, it will strongly encourage transit-oriented development (TOD) in the station area to reduce regional vehicle miles traveled that the Project offers.

In addition to the policies and land-uses contained in the Madera County General Plan, the SCCC Specific Plan, and the 2018 RTP/SCS described above, current and future growth patterns have been established by Madera County through a set of Specific and Area plans. As a result, there is a large pipeline of projects in Madera County, which are largely focused to the southern and easterly portions of the County. The location of Project is consistent with the growth pattern, in that it supports the planned growth area of the County.

As shown in Figure 3.11-3 below, there are numerous major development projects that are either approved or in the approval process, with a majority of these located in the southeastern region of Madera County. Given this development pattern, a large percentage of the new growth in the County will be in closer proximity to the Relocated Station than the Existing Station.

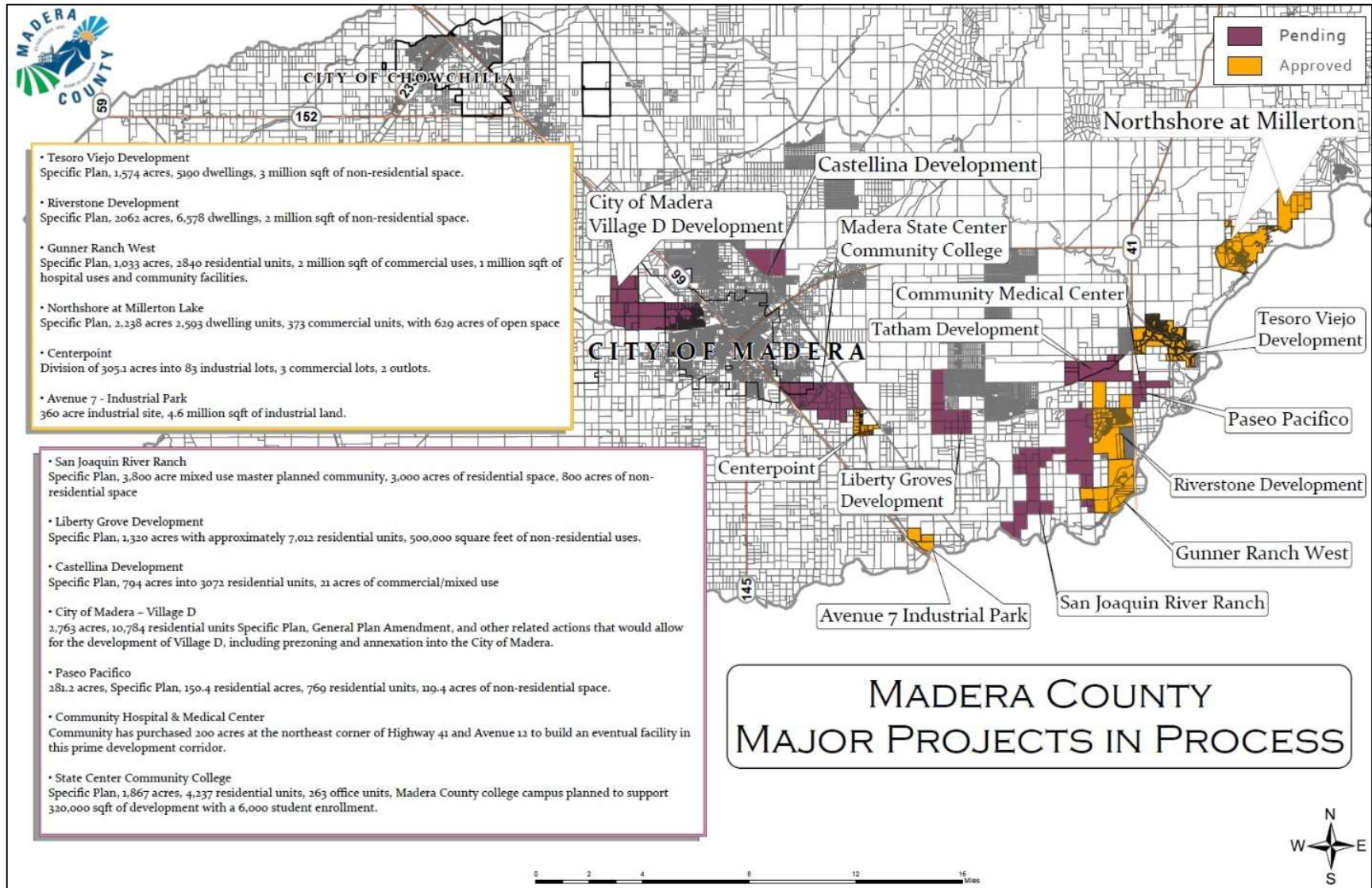
Major development projects that are located in the southeastern region of the County include the Tesoro Viejo (5190 residential units), Riverstone (6,578 residential units), Gunner Ranch West (2840 residential units), Northshore at Millerton Lake (2,598 residential units), Liberty Grove (7,012 residential units), and Paseo Pacifico (769 residential units). Several of these developments also have significant commercial components. In addition, the aforementioned Madera State Center New Growth Area envisions 4,237 residential units, (Madera County 1995, 2015b).

Although it is located south of central Madera, the proposed Relocated Station is more accessible than the current station location to a large majority of the planned growth in Madera County, while still very competitive in travel times from central area of the City

Madera to the Existing Station due to better roadway access. SJJPA concluded in their May 2020 Madera Station Relocation Report⁸, that the new station site generally provides similar access (in terms of travel times) to central Madera to the existing station, while greatly enhancing access to the more highly populated and faster growing areas of Madera County (as compared to the current station). Given this, the Relocated Station near Avenue 12 has greater potential for ridership growth than the Existing Station. In addition to best serving Madera County's growth, the location near Avenue 12 would attract additional riders from portions of northern Fresno based on catchment area analysis previously done.

⁸ "Madera Station Relocation" report. May 2020. https://sijpa.com/wp-content/uploads/Madera-Station-Relocation_May-2020_FINAL.pdf

Figure 3.11-3 Development Projects in Process in Madera County



Source: Madera County

3.12. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.12.1. Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

In 1988, the State Mining and Geology Board designated sand and gravel resources in areas of regional significance in the Fresno P-C Region, which encompass Madera County. All designated sand and gravel resources are within the floodplains of the San Joaquin and Kings rivers, and instream areas of the two rivers contain very small amounts of aggregate resources with far less than 1% of the reserves. In addition, no resources underlying designated lands within the Fresno P-C Region have been lost due to urbanization and other irreversible land uses since designation in 1988. The Project Footprint is not on or in the vicinity of valuable regional or state mineral resources. Therefore, no construction or operational impacts would occur related loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

3.12.2. Would the Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Since the Project Footprint is not on or within the vicinity of valuable mineral resources, the Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Therefore, no construction or operational impacts would occur related to the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

3.13. NOISE

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.13.1. Would the Project cause generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquin Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Project construction for both Phase 1 and Phase 2 elements would include basic activities associated with Cottonwood Creek Bridge, site work\track work, and platform work. Trackwork on the CHSRA Project would also extend further north and south, beyond Cottonwood Creek in the north and to just north of Avenue 11 in the south.

A new rail bridge for the CAHSR Project alignment has been completed over Cottonwood Creek (the Cottonwood Creek Viaduct), and the Project's proposed trackwork would include construction of a parallel rail bridge just to the east carrying the station siding track for HSR trains, which would tie back into the HSR mainline northbound track approximately 2,000 feet north of Cottonwood Creek. Pile-driving equipment would be used for the construction of the new rail bridge over Cottonwood Creek.

Local noise ordinances along the Project corridor, including the City of Madera and Madera County, generally limit construction noise to particular times during weekday, weekend, and holiday daytime hours. Sunday and nighttime construction work are prohibited.

Table 3.13-1 summarizes the estimated construction noise levels and residential noise impact screening distances for each of the planned construction activities. The screening distances identify the distance within which the specified land use could be exposed to noise levels above the local or Federal Transit Administration (FTA) criteria. As shown in Table 3.12-1, local noise ordinances generally exempt construction noise. As a result, impact distances based on local thresholds are not applicable for this assessment. The impact distances relevant to the FTA criteria from Table 7-2 (of the technical noise study for the Project) reflect the types of equipment anticipated to be used. The potential for noise impact would be greatest during platform work. To be conservative, the impact distance estimates do not assume any topography or ground effects. The results of the analysis indicate that daytime noise could affect residences within approximately 74 feet of construction activity and commercial uses within approximately 30 feet of construction activity. However, there are no noise-sensitive uses within the impact distances shown in Table 3.13-1. Construction noise at the nearest residence to the Project Footprint would result in a noise level of 44 dB Leq. This level of construction noise would be below both the existing noise level in the vicinity of the Project Footprint (Table 5-1 of the technical noise study for the Project) and the County's thresholds (Table 7-6 of the technical noise study for the Project). Therefore, the construction impacts related to the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project Footprint in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies would be less than significant.

Operational Impacts

The operation of the proposed Relocated Station in both Phase 1 and Phase 2 would not increase San Joaquins or HSR Service. The Project would result in San Joaquins stopping at the new station instead of the existing Madera Station which would mean idling and acceleration noise at the new station instead of the existing Madera Station. The Project would result in HSR trains stopping at the new station instead of just transiting through Madera resulting in idling and acceleration noise instead of through train noise at this location.

As discussed earlier, separate from this Project, the SJJPA is planning to increase service to eight (8) San Joaquins roundtrips by the time Phase 1 is constructed. CAHSR is planning for eighteen (18) HSR service roundtrips a day (anticipated to commence in 2029). Once HSR service commences to the Relocated Station, the San Joaquins would no longer serve the Relocated Station and would instead terminate at a new downtown multi-modal hub station in Merced, where they would connect to HSR trains, leaving only 18 HSR service daily roundtrips serving Relocated Station. Once the San Joaquins terminate in Merced, it is

possible that there could be local/regional passenger rail service in the future that utilizes the slots that the San Joaquins would no longer utilize. However, this would have to be separate project and is not in the scope of this Project.

The proposed Project noise impact evaluation was performed in accordance with FTA general assessment methodology. The assessment of railroad operation noise, considered noise from the type of train, track, and stationary noise sources at intersection with Avenue 12. Operational noise sources that were calculated included rail transit vehicles (both HSR trainsets and diesel trains used by the San Joaquins), crossing signals, and transit warning devices. Please see Appendix D for operational rail noise calculations. The existing noise level and the Project calculated noise level were combined to compute the noise exposure at the receiving locations. Table 3.13-2 summarizes the results. As shown, no noise impacts would occur due to the Project in both Phase 1 and Phase 2. Existing noise-sensitive use would be approximately one mile from the Project site, and future noise-sensitive uses closest to the Project site would be the Madera State Center Community College condition as described and mapped in the Project Description.

Therefore, operational impacts related to the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies would be less than significant.

**Table 3.13-1. Noise Impact Assessment for Construction Activities
(Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station)**

Construction Activity and Equipment	Noise Level at 50 feet (Leq, dBA)	Threshold (dBA)		Approximate Noise Impact Distance (feet)	
		Local	FTA	Based on Local Threshold	Based on FTA Threshold
Cotton Bridge Work	94	Daytime construction - Exempt	Residential: Daytime - 90 Nighttime - 80	Not applicable	Residential: Daytime - 74 Nighttime - 187 Commercial: Daytime - 30
Concrete Batch Plant	75				
Concrete Pump Truck	74				
Crane	73				
Compressor (air)	74				
Flat Bed Truck	70				
Generator	78				
Site Work	85	Daytime construction - Exempt	Residential: Daytime - 90 Nighttime - 80	Not applicable	Residential: Daytime - 31 Nighttime - 77 Commercial: Daytime - 12
Grader	81				
Excavator	77				
Compactor	76				
Auger/Bore Drill Rig	77				
Backhoe	74				
Platform Work	89	Nighttime construction - Not permitted.	Commercial: Daytime - 100 Nighttime - 100	Not applicable	Residential: Daytime - 45 Nighttime - 113 Commercial: Daytime - 18
Dozer	88				
Grader	85				
Tamper	85				
Aligner	84				
Swinger	83				
Welders	85				
Crane	85				
Wheel Loader	74				
Paver	84				
Concrete Pump	75				
Ballast Regulator	75				
Rail grinder	83				

Notes:

dBA = A-weighted decibel

L_{eq} = equivalent sound level

Source: FHWA 2006; FTA 2018

**Table 3.13-2 Summary of Operational Noise Levels
(Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station)**

Site	Land Use	Noise Level (Ldn/Leq1dBA)			FTA Noise Level Criteria			CEQA	
		Existing	Project	Existing + Project	Moderate Impact ²	Severe Impact ²	Impact ²	Increase over Existing	Significant Impact?
Existing	Residential @ 1 mile	50.0	39.3	50.4	53.4	59.6	None	0.4	Less than significant
Future	Institutional @ 200 feet	60.0	41.3	60.1	62.8	68.4	None	0.1	Less than significant

Notes:

CEQA = California Environmental Quality Act; dBA = A-weighted decibels; FTA = Federal Transit Administration; L_{eq} = equivalent sound level; LTS = less than significant

¹ L_{dn} is used for Category 2 (residential) land use and L_{eq} is used for Category 3 (institutional) land use.

² Based on Figure 7-1 of the technical noise study for the Project.

Source: Data compiled by AECOM in 2020

3.13.2. Would the Project cause the generation of excessive groundborne vibration or groundborne noise levels?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction activities under the Project could generate vibration levels at 25 feet, as high as 0.2 PPV (94 VdB) from compactors during site work and 0.09 PPV (87 VdB) from bulldozers during rail and platform work. Construction activities would be considered to have a significant impact if they would generate vibration in excess of FTA thresholds. The nearest vibration-sensitive structure (a typical rural masonry building) is approximately one mile from Project construction activities. The Project construction activities would generate groundborne vibration of approximately 0.0001 PPV (24 VdB) at a distance of one mile. This level of vibration would be below the threshold of impact criteria of 0.3 PPV inches/second (Table 7-4 of the technical noise study for the Project) for structural damage resulting from vibration. Therefore, construction impacts related to the generation of excessive groundborne noise levels would be less than significant.

In terms of vibration annoyance effects at vibration-sensitive uses, the closest vibration-sensitive uses (residential uses) to Project construction sites are approximately one mile away. The resulting construction vibration level at these locations would be approximate 24 VdB. These levels are below the FTA's impact threshold of 72 VdB. Therefore, construction

impacts related to the generation of excessive vibration annoyance would be less than significant.

Operational Impacts

Vibration caused by trains is caused by the wheels rolling on the rails. This energy is then transmitted through the track support system into the ballast, through the ground to the foundations of nearby buildings, and finally throughout the remainder of the building structure. The level of vibration received at the building is a function of the type of trains, their speeds, track system, structure, support and condition, distance from the tracks, geological condition, and the receiving structure. Groundborne vibration typically does not annoy people who are outdoors. Impacts were assessed based on a comparison of the predicted Project vibration level with the FTA impact criterion of 75 VdB for Category 2 and 78 VdB for Category 3 land uses. The vibration-sensitive uses adjacent to the proposed station facilities, along with the likely vibration level during train passage, are shown in Table 3.13-3.

**Table 3.13-3. Summary of Operational Vibration Impact Assessment
(Phase 1 – San Joaquin Relocated Station / Phase 2 – HSR Interim Operating Segment Station)**

Land Use Category	Distance to Near Track (feet)	Vibration Levels (VdB)		Impacts
		Project Operation	FTA Criteria	
Category 2: Residences and buildings where people normally sleep	5,280	5.0*	72 VdB	None
Category 3: Institutional land uses with primarily daytime use	200	61.0	75 VdB	None

Notes:

* Calculated using FTA's Equation 6-2 and Figure 6-4 (Figure 6-1 of the technical noise study for the Project).

Source: FTA 2018; data compiled by AECOM in 2020

Based on the vibration significance criterion, vibration-sensitive receptors along the Project track would not be exposed to perceptible vibration, and buildings would not be exposed to vibration levels causing possible structural effects. These results indicate that the vibration criterion would not be exceeded (i.e.; vibration impacts would not occur) at vibration-sensitive uses more than 65 feet from the centerline of the nearest track. No vibration-sensitive uses are known or expected to be within 65 feet of the Project tracks. Therefore, no construction and operational impacts would occur related to the generation of excessive vibration.

- 3.13.3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the project area to excessive noise levels?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Madera Municipal Airport, the closest airport to the Project Footprint, is more than seven miles from the Project Footprint. The Project would not locate new or additional sensitive receptors in the area of influence of any airports. Therefore, no construction or operational impacts would occur related to a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the vicinity of the Project to excessive noise levels.

3.14. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.14.1. Would the Project induce substantial unplanned population growth in an area either directly or indirectly?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project could have the potential to temporarily induce local population growth through the employment of workers during the construction period. Construction of the Project is anticipated to last approximately two to five years, depending on the phase of the Project years. The source of the construction labor force is unknown at this time; however, due to the Project's proximity to urban centers, such as the cities of Madera and Fresno, the Project would be expected to draw from the existing local workforce. Therefore, it is not anticipated that construction of Project would cause substantial population growth or a substantial increase in housing demand in the region. Furthermore, if construction workers from outside the region were employed during the construction period, the temporary nature of the work suggests that it would be unlikely that non-local workers would permanently relocate; this is typical for employees in the various construction trades. Therefore, construction impacts related to inducing substantial unplanned population growth directly or indirectly would be less than significant.

Operational Impacts

The Project site is southeast of the City of Madera in unincorporated Madera County, approximately one mile east of the Madera Community College. A portion of the Project Footprint (where the station facilities and access road are located) is within the adopted Madera SCCC Specific Plan boundary (see Figure 1-4). The land-uses designations contained

SCCC Specific Plan area, which are also incorporated into the Madera County General Plan, allow for residential development in certain areas. The Project Footprint is primarily bordered by land designated for agricultural uses to the east of the SCCC Specific Plan area (Madera County 2015a). The Relocated Station could increase the attractiveness of developing the surrounding area, but current County land use policies have already identified where growth will occur in the immediate vicinity of the Relocated Station. While construction of a new transit station could potentially make surrounding land more attractive to development, expansion of transit service alone would not induce growth. Madera County regulates the levels of building intensity and population density according to the land use designations identified in the County General Plan and Zoning Ordinance (Title 18 of the Madera County Municipal Code).

The Project elements in both Phase 1 and Phase 2 include trackwork, platforms, parking, an access road, and a bus depot. The parcels immediately east of the Project Footprint site (excluding areas south of Avenue 12) are designated by the Madera County General Plan as Agriculture Exclusive (AE) and zoned by Madera County as ARE-40 (Agriculture Rural Exclusive, 40-acre minimum). The AE land use designation and the ARE-40 zoning district are intended to preserve agricultural lands. South of Avenue 12, the Project Footprint is generally surrounding land within the Heavy Industrial Land Use Designation, while in the vicinity of Avenue 11, it is surrounded by the Agriculture Land Use Designation (A) and zoned ARE-20 (Agriculture Rural Exclusive, 20-acre minimum). North of Avenue 13 the Project Footprint and the surrounding area to the west are located within the Agriculture Residential Land Use Designation, which specifies a mix of farming and residential on a minimum 10 acre lots (Madera County 2015a, 2020). Given these established land use policies in the vicinity of the Project Footprint, the Project would not induce land use changes that result in new or unplanned growth.

Madera County data indicates that a significant number of large developments already underway or approved development as part of specific and area plans, are focused in the southeastern portion Madera County. Given this, much of the envisioned growth associated with these development projects are in vicinity of the Project, which is also located in the southeastern portion of the County. Therefore, the Project is positioned more to support existing development patterns rather than inducing unplanned growth. See Section 3.11 (Land Use and Planning) for a more detailed analysis of the pending and approved development project. Also see Figure 3.11-3, which indicate geographically where the pending and approved projects are located within Madera County.

In summary, the Project would serve both the expected and future planned growth of Madera County, including the higher-levels of growth approved in the southeastern portion of Madera County (as compared to other areas of the County). Thus, the Project would not result in changes to existing land use policy or cause the redistribution of planned land uses

that could induce unplanned population growth. Therefore, no operational impacts would occur related to inducing substantial unplanned population growth directly or indirectly.

3.14.2. Would the Project displace substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project would be located on vacant, disturbed, and agricultural land where no housing exists. Therefore, the Relocated Station in Phase 1 and Phase 2 would not displace housing or people. Therefore, no construction or operational impacts would occur related to displacing substantial numbers of housing or people necessitating the construction of replacement housing elsewhere.

3.15. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The entire Project Footprint is within an unincorporated area of the County of Madera. Therefore, this section is primarily evaluating the impacts of Project elements within the public service setting of the County of Madera. Additionally, inter-agency coordination with the City of Madera and other adjacent cities is also be discussed.

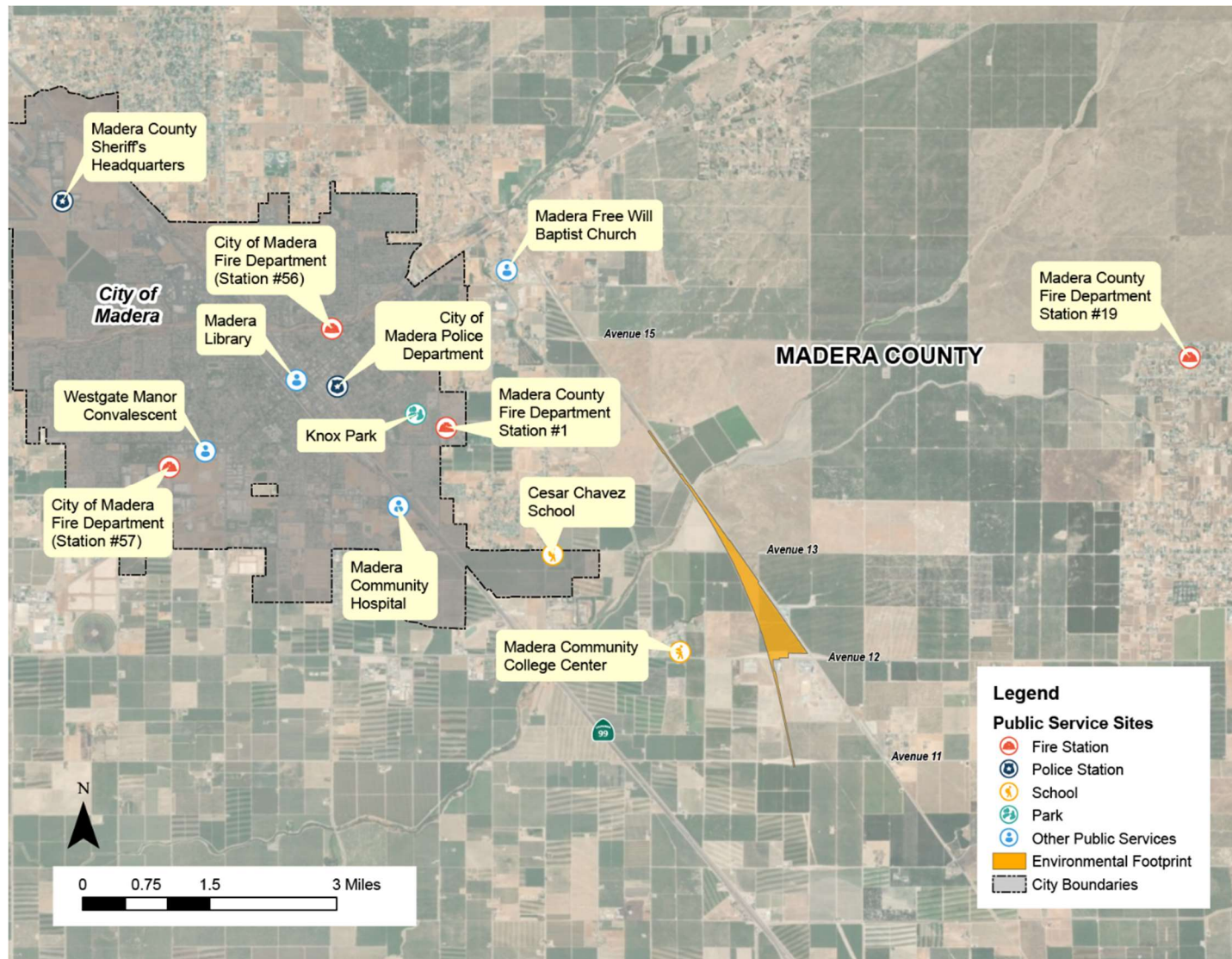
Table 3.15-1 below lists the nearest public service facilities within the Project proximity. Figure 3.15-1 shows their geographical relation to the Project Footprint.

Table 3.15-1. Public Service Facility Summary

Public Service Category	Name	Distance	Direction to The Project Footprint
Fire and Emergency	Madera County Fire Station #1	3 miles	Northwest
	Madera County Fire Department #19	4.7 miles	Northeast
	City of Madera Fire Department (Station #56)	4.4 miles	Northwest
	City of Madera Fire Department (Station #57)	5.4 miles	West
Police Protection	Madera City Police Department	4.1 miles	Northwest
	Madera County Sheriff's Department	7.2 miles	Northwest
Schools	Madera Community College Center	1 mile	West
	Cesar Chavez School	1.8 miles	West
Parks	Knox Park	3.4 miles	Northwest
Other Services	Madera Library	4.5 miles	Northwest
	Madera Free Will Baptist Church	3.5 miles	Northwest
	Madera Community Hospital	3.3 miles	West
	Westgate Manor Convalescent	5.1 miles	Northwest

Source: AECOM, 2020

Figure 3.15-1 Public Service Facility Location Map



Source: AECOM, Esri 2020ESRI

3.15.1. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

Determination: LESS THAN SIGNIFICANT IMPACT

The Madera County Fire Department provides service to the Project Footprint. The nearest County's fire station (Station 1) is approximately three miles northwest from the Project site.

In rural areas of Madera County, response times could take longer than 20 minutes depending on the firefighters' availabilities. The City of Madera, however, responds to calls within five minutes approximately 75% of the time. The primary service provider to the Project would be Madera County Fire Station #1. If the primary service provider is not available, coordination is facilitated across up to four fire stations affiliated to the City of Madera and Madera County within 5.5 miles (five to six minutes driving distance in rural areas). Resources from these four fire stations are enough to provide timely response to the Project area.

In terms of other emergencies, ambulance response time is 20 minutes 95% of the time for Madera County. The closest hospital, Madera Community Hospital, is 3.3 miles west of the Project site, within the driving range of County-wide response time. If the primary service provider (Madera Community Hospital) is at capacity, coordination with other clinical centers such as the Westgate Manor Convalescent and adjacent city's hospitals occurs to dispatch emergency vehicles.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would require use of temporary construction workers. However, as discussed in Section XIV, Population and Housing, these construction workers would not result in a permanent increase in the residential population. Therefore, no substantial increase in demand for fire services would result and no new facilities would be required. As such, no construction impacts would occur related to the provision of new facilities as a result of an increase in demand for fire services.

Operational Impacts

Operation of the Project would bring passengers in the Project area. As discussed in Section XIV, Population and Housing, this increase in passengers would not result in a generation of a permanent residential population but could nevertheless increase demand for fire services. However, coordination across the four existing fire stations would sufficiently meet any potential increase in fire service demand due to operations of the Project. Therefore,

operational impacts related to the provision of new facilities as a result of increased demand for fire services would be less than significant.

3.15.2. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

Determination: LESS THAN SIGNIFICANT IMPACT

The Madera County Sheriff's Office and City of Madera's Police Department would provide police services to the Project area.

The Madera County Sheriff's Office responds to the most urgent calls in about 18 minutes on average. The City of Madera's Police Department responds to the most urgent calls within their ideal response time of one to three minutes in most cases, but the city does not track average response times. According to Amtrak, there was one reported incident for every 4,768 Amtrak passengers nationwide in FY 19 (Pers.Comm. 2020). Therefore, the potential need for additional police services generated from the Project would be small enough to be handled by the nearest Madera City Police Department about 4.1 miles northwest from the Project Footprint. If the City's police department is unable to respond, coordination would be facilitated between the County's sheriff, and adjacent cities' police department to ensure a timely response.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would generate temporary construction workers. However, the construction workers are not anticipated to generate a permanent residential population and, therefore, no substantial demand increase for police services. Therefore, no construction impacts would occur related to the provision of new facilities as a result of an increase in demand for police services.

Operational Impacts

Operation of the Project would generate operational passengers in the Project area. Increased passenger activities would not result in generation of a permanent residential population but would still increase demand for police services. However, police service needs induced by the Project are small enough to be covered by the existing police and sheriff resources in the vicinity of the Project. Therefore, operational impacts related to the provision of new facilities as a result of increased demand for police services would be less than significant.

- 3.15.3. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would generate temporary construction workers. However, the construction workers are not anticipated to generate a permanent residential population which would generate school age children that would in turn increase demand for school services. Therefore, no construction impacts would occur related to the provision of new facilities as a result of an increase in demand for school services.

Operational Impacts

Operations of the relocated Project would generate new passengers in the Project area. Increased passenger activities would not result in generation of a permanent residential population which would generate school age children that would in turn increase demand for school services. In addition, as discussed in the “Population and Housing” section, the Project would not result in new land uses or cause the redistribution of planned land uses that could induce unplanned population growth. Therefore, no operational impacts would occur related to the provision of new facilities as a result of an increase in demand for school services.

- 3.15.4. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would generate temporary construction workers. However, the construction workers are not anticipated to generate a permanent residential population which would increase demand for park services. Therefore, no construction impacts would occur related to the provision of new facilities as a result of an increase in demand for parks.

Operational Impacts

Operations of the Project would generate passengers in the Project area. Increased passengers would not result in the generation of a permanent residential population which would increase demand for park services. In addition, as discussed in the “Population and Housing” section, the Project would not result in new land uses or cause the redistribution of planned land uses that could induce unplanned population growth. Therefore, no operational impacts would occur related to the provision of new facilities as a result of an increase in demand for parks.

- 3.15.5. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public service facilities?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would generate temporary construction workers. However, the construction workers are not anticipated to generate a permanent residential population which would increase demand for services by other public facilities such as libraries, hospitals, and churches. Therefore, no construction impacts would occur related to the provision of new facilities as a result of an increase in demand for other public service facilities.

Operational Impacts

Operations of the Project would generate passengers in the Project area. Increased passengers would not result in the generation of a permanent residential population which would increase demand of services by other public facilities such as libraries, hospitals, or churches. Additionally, as discussed in the “Population and Housing” section, the Project would not result in new land uses or cause the redistribution of planned land uses that could induce unplanned population growth. Therefore, no operational impacts would occur related to the provision of new facilities as a result of an increase in demand for other public service facilities.

3.16. RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The County of Madera does not have a Parks and Recreation Department. The County's General Plan establishes a standard of three acres of Public Park or every 1,000 population for cities within the county and unincorporated areas. The general plan also encourages private recreation facilities to offset the heavy demand of other public recreation facilities. County's recreational facilities include parks, ranches, and recreation centers.

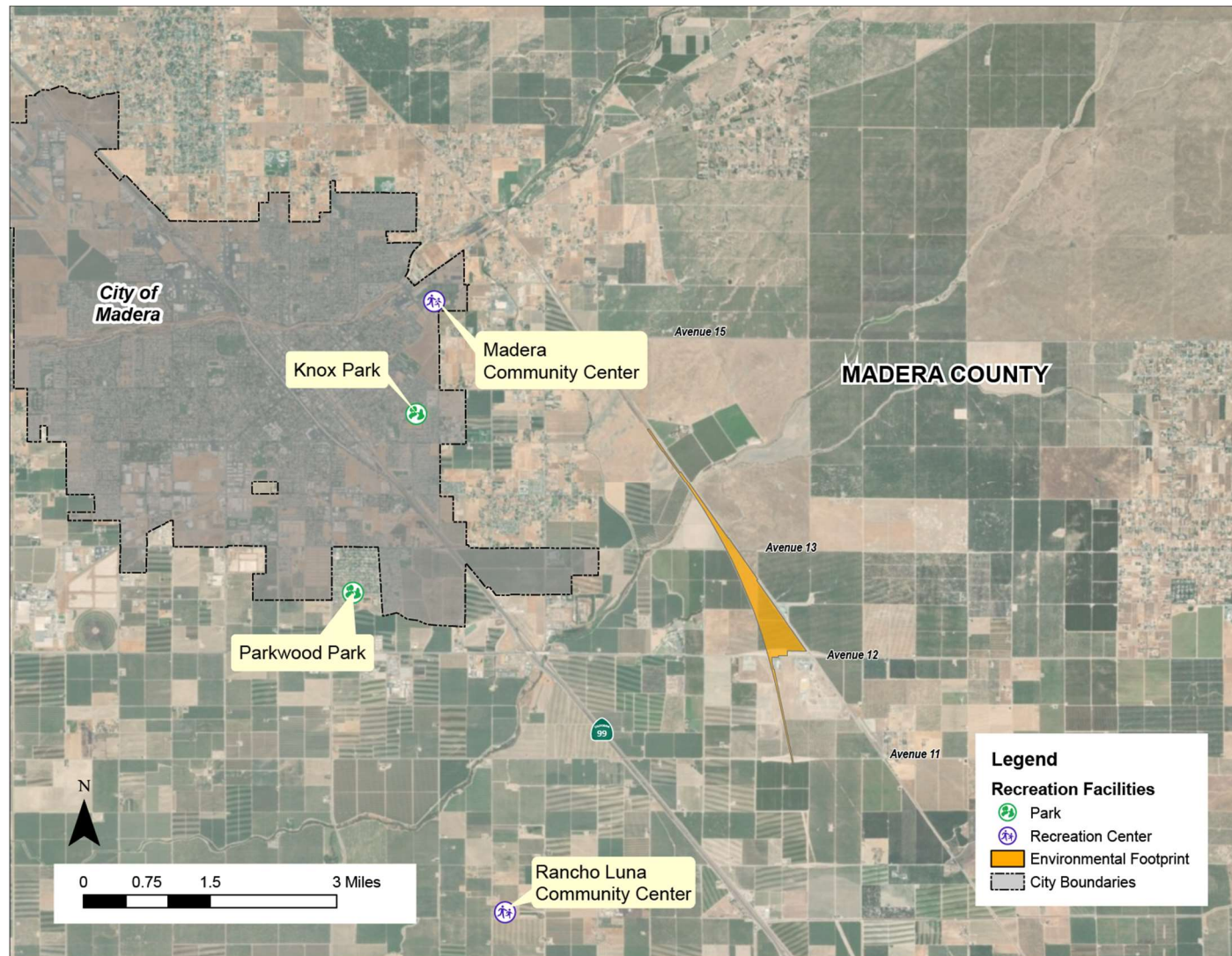
Table 3.16-1 below lists the nearest recreational facilities within proximity to the Project Footprint. Figure 3.16-1 shows their geographical relation to the Project Footprint.

Table 3.16-1. Recreational Facility Summary

Recreational Facility Name	Distance to Project Footprint	Direction to The Project Footprint
Knox Park	3.4 miles	Northwest
Parkwood Park	3.7 miles	West
Rancho Luna Recreation Center	4 miles	Northwest
Madera Community Center	3.8 miles	Southwest

Source: AECOM 2020

Figure 3.16-1 Recreational Facility Location Map



Source: AECOM; ESRI 2020

3.16.1. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Determination: NO IMPACT

The Project does not include any residential or commercial development that could result in an increase use of existing parks or recreational facilities.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction Impacts

Construction of the Project would generate temporary construction workers. However, the construction workers are not anticipated to generate a permanent residential population which would increase demand for existing parks or recreational facilities. Therefore, no construction impacts would occur related to increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Operational Impacts

Operation of the Project would generate passengers in the Project area. Increased passengers would not result in generation of permanent residential population which would increase demand for existing parks and recreational facilities. Therefore, no operational impacts would occur related to increase use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

3.16.2. Would the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project does not include new recreational facilities or the expansion of existing recreational facilities. Therefore, no construction or operational impacts would occur related to the 3.16.2 threshold.

3.17. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Would the project conflict with or inconsistent with CEQA Guidelines Section 15064.3 subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

The Project is southeast of the City of Madera, outside the city limits. The Project is northwest of Trigo along the west edge of the BNSF Corridor, in an area that is primarily agricultural in nature. However, there are some industrial uses along the south side of Avenue 12, including two chemical plants and an electrical substation.

The majority of the Project components—including the passenger platforms, station buildings, surface parking lot and internal circulation areas, bus bays, and a station access roadway—would be constructed between Avenue 13 in the north and Avenue 12 in the south. However, during Phase 1, trackwork adjacent to the BNSF Corridor would extend slightly approximately 600 to 700 feet to the north of Avenue 13. The Project's proposed trackwork for Phase 2 would include construction of a rail bridge immediately east of the existing HSR mainline rail bridge, carrying the HSR station siding track associated with the Project, which would tie back into the HSR mainline northbound track approximately 2,000 feet north of Cottonwood Creek. Trackwork on the station siding track for Phase 2 would also extend just south of Avenue 11. Single crossovers at the north and south ends of the Project extents would allow southbound HSR trains to cross over to the northbound mainline track and access the turnouts for the station siding track.

Although both of the proposed platforms in Phases 1 and 2 would be constructed just south of what is currently identified as an unpaved portion of Avenue 13 (between the CAHSR Project mainline corridor and the existing BNSF Corridor). This section of Avenue 13 is now closed permanently. Therefore, public roadway access to the Relocated Station would be provided via Avenue 12, which is aligned in an east–west orientation immediately to the south of the station and connects with SR-99 approximately 2.5 miles to the west. In the vicinity of the Project Footprint, Avenue 12 largely functions as a two-lane undivided rural roadway. However, a series of improvements are being implanted or are in the planning

stages for Avenue 12 Corridor, which will expand the roadway profile from 2 lanes to 4 lanes from Highway 99 to Highway 41 (except for short 2-lane section which will be augmented by a bypass road).

Unlike the current Madera Station, which has no existing transit service, the area around the proposed Relocated Station was served by two bus transit systems prior to the COVID-19 crisis. Madera Area Express's Bus Route 3 provided service along the Avenue 12 corridor throughout the day. Though this service is currently suspended, it is anticipated that service will be restored after the COVID-19 crisis passes. Additionally, Madera County Connection's "College" Bus Route continues to run five weekday roundtrips trips to Madera Community College (approximately a mile away from the Project station area) from the central area of the City of Madera. These bus services are anticipated to connect to the Relocated Station when service commences, providing good public transportation connectivity, which would further increase access to the Relocated Station, whereas public transportation has not been viable to the Existing Station (due to its location in Madera Acres area).

On-demand service is also provided through Madera Dial-A-Ride, which covers the City of Madera and surrounding urbanized areas, stretching to the intersection of Avenue 12 with Road 30½ at its southeasternmost corner. There are no existing dedicated bicycle or pedestrian facilities in the vicinity of the station, and bicyclists and pedestrians generally share right-of-way with automobiles or use adjacent shoulders or unpaved areas.

In the vicinity of the Project, the San Joaquins service operates on the BNSF Corridor, which is currently a single-track mainline through this area, intersecting Avenue 12 at an existing grade crossing. As part of the CAHSR Project, a grade-separation along Avenue 12 is under construction that would elevate over the CAHSR Project track and the existing BNSF Corridor track and expand Avenue 12 from 2 to 4 lanes in this section. The grade-separation consists of two bridges (one over each rail line), as well as connecting segments of embankment at both ends and in the middle.

In accordance with Senate Bill (SB) 743, the California Natural Resources Agency has adopted changes to the CEQA Guidelines that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses," as described under Section 21099(b)(1) of the Public Resources Code. With these changes, VMT has been identified as the most appropriate metric for evaluating a Project's transportation impact, and automobile delay—as measured by "level of service" (LOS) or similar metrics—generally no longer constitutes a significant environmental effect under CEQA (Governor's Office of Planning and Research, 2018). Therefore, components of the regulatory setting referring to automobile delay (e.g., level of service) are not applicable to the analysis of the Project's transportation impacts and are not discussed further in this section.

3.17.1. Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Determination: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Transportation-related programs, plans, ordinances, and policies relevant to the Project include the following:

- Madera County General Plan (1995)
- Madera State Center Community College Specific Plan (1995)
- City of Madera General Plan (2009)
- City of Madera Climate Action Plan (2015)
- 2020 Regional Transportation Improvement Program (Madera County Transportation Commission)
- 2018 Regional Transportation Plan/Sustainable Communities Strategy (Madera County Transportation Commission)
- Madera County Short-Range Transit Development Plan (FY 2017/18–2021/22)
- Madera County Coordinated Public Transit Human Services Transportation Plan (2015)
- Madera Active Transportation Plan (2015)
- San Joaquin Valley Blueprint (San Joaquin Valley Regional Policy Council)
- California State Rail Plan (2018)
- California High-Speed Rail Authority 2018 Business Plan
- San Joaquin Joint Powers Authority 2020 Business Plan Update

The Project would generally enhance the overall circulation system by expanding the station's catchment area to cover the northern areas of the City of Fresno and Fresno County, where the Relocated Station would have travel times shorter than (or at least similar to) the existing Fresno Station. The existing Madera Station is located adjacent to an area where existing development consists primarily of low-density, residential uses and a golf and country club. The existing station has no direct highway access and has limited parking, with only 19 parking spaces available. There are also no existing local or intercity bus connections at the existing station, nor dedicated facilities for bus boarding, alighting, and layover. Curbside kiss-and-ride (passenger loading) areas are only sufficient to accommodate approximately 2 to 3 vehicles at a time.

In contrast, the Relocated Station would be better situated to serve Madera County's future growth potential along the Avenue 12 corridor and would have a dedicated bus depot with 4 bays, a parking area with approximately 98 parking spaces, and a substantially larger area for curbside passenger pick-up and drop-off. With the subsequent completion of the HSR

Improvements at the Relocated Station, these facilities would be further expanded to 8 bus bays and approximately 277 parking spaces, with a larger pick-up / drop-off zone. In Phase 2, the dedicated station access road would also be improved with sidewalks and bike lanes to facilitate multi-modal access to and from Avenue 12.

During Phase 1, the Relocated Station is expected to capture substantially more ridership for the San Joaquins than the Existing Station in Madera Acres. Much of this ridership would be regional and intercity trips by passengers shifted out of private (household) automobiles and onto passenger rail, which would produce substantive benefits in reducing VMT, congestion on SR-99, and associated greenhouse gas (GHG) emissions. These benefits, in particular, would align with the goals and objectives in many of the aforementioned programs, plans, ordinances, and policies. During Phase 2, HSR station facilities would be provided at the Relocated Station, which is estimated to significantly boost ridership from Phase 1 as the service will then be in the form of high-speed rail rather than the San Joaquins. Implementing HSR service at the Relocated Station is consistent with the goals and objectives of the CHSRA's 2016 and 2018 Business Plans in terms of integrating local, regional, and intercity transit services.

Ridership analysis was conducted for Phases 1 and 2 for the years 2025 and 2029 respectively, which reflect estimated ridership for the operational plans at the Relocated Station described above, as well as for a No-Build condition, in which the Existing Station would remain in use (refer to Table 3.17-1 below). Ridership was assessed by estimating passenger "ons and offs" (or "boardings and alightings"). In this approach, each person is counted twice (once for getting on at a station and once for getting off at a station). Therefore, the number of actual passengers would be 50% of the numbers shown above. Estimating ons/offs is useful to assess usage of the station facilities, etc.

Table 3.17-1. Estimated Project Ridership

No Build¹ 2025 (San Joaquins)	Project Phase 1² 2025 (San Joaquins)	Project Phase 2³ 2029 (High-Speed Rail Service)
40,200¹ (passenger ons/offs)	103,100² (passenger ons/offs)	210,600³ (passenger ons/offs)
Notes: ¹ Assumes eight (8) San Joaquins roundtrips serving the Existing Station. ² Assumes eight (8) San Joaquins roundtrips serving the Relocated Station. ³ Assumes eighteen (18) high-speed rail roundtrips serving the Relocated Station.		

For more information on the ridership estimates, refer to Appendix G (Ridership, Vehicle Miles Traveled, and Parking Estimates).

As discussed under Impact (3.18.3), the design, construction, and operation of the Project elements would also comply with applicable standards from Caltrans and local agencies (for changes to the roadway network) and from the FRA and/or CPUC (for the Project's rail

elements). Design approval for specific Project components would be sought from the appropriate agencies as part of detailed design and subsequent stages of the Project.

Additional detailed discussion for selected components of the circulation system is provided below.

Impacts to Transit. Analysis of a Project's transportation impacts should consider effects on transit access or operations, but the addition of new transit users is generally not considered an adverse impact, as significance criteria for evaluating a project's transportation impacts must promote GHG emissions reductions and the "development of multimodal transportation networks", as mentioned above and referenced from Section 21099(b)(1) of the Public Resources Code. To the extent that the increased ridership demand requires new or additional transit infrastructure, however, this could result in indirect significant impacts (Governor's Office of Planning and Research, 2018).

However, in Phase 1, the Project proposes no increase in train service on the San Joaquins over what is already being implemented by the SJJPA, which will increase the number of daily roundtrips that service Madera County from seven to eight prior to the commencement of rail service to the Relocated Station. In Phase 2, operating plan for HSR service have already established by the CHSRA at 18 roundtrips a day. Therefore, train traffic along both the BNSF Corridor (utilized by the San Joaquins) and the new mainline CAHSR alignment through Madera County would remain the same, with or without the Project. Given expected ridership levels, it is unlikely that new or additional transit infrastructure would be required, beyond what is already proposed as part of the Project. The SJJPA has been coordinating with CHSRA throughout the early planning and design process and would continue to do so during subsequent stages of the Project to ensure that the construction and operation of relevant Project elements within or adjacent to the CHSRA Project alignment satisfy appropriate design guidelines and specifications. The SJJPA would also coordinate with Madera County and Madera CTC to ensure that adequate connecting transit service is provided for the new station.

Impacts to Roadways. The Project would likely result in increased traffic levels in the vicinity of the station site, but this would be balanced by reduced traffic levels along SR-99 and other regional and intercity roadway corridors through the Central Valley. As mentioned above, the Project would reduce VMT by inducing a mode shift from automobiles to passenger rail, which would decrease traffic congestion along parallel roadways, benefitting traffic operations and goods movement along these corridors. Furthermore, a series of improvements are being implanted or are in the planning stages for Avenue 12 Corridor, which will expand the roadway profile from 2 lanes to 4 lanes from Highway 99 to Highway 41 (except for short 2-lane section which will be augmented by a bypass road). Given this expansion, it is anticipated any additional traffic related to the Relocated Station will be accommodated.

No major road closures or detours are anticipated during construction. Any minor changes, such as lane closures or temporary (e.g., overnight or weekend) roadway closures would be coordinated with local agencies to minimize disruptions to the circulation system. In recognition of potential disruptions to the circulation system, however, the impacts to roadways due to Project construction have been conservatively deemed potentially significant.

Impacts to Freight Rail. The Project could result in significant indirect impacts related to air quality, noise, or GHG emissions if Project construction or operation disrupts existing freight rail operations such that freight traffic is diverted to other modes (e.g., trucks). However, construction and operation of the Project within right-of-way (ROW) owned by BNSF would comply with relevant BNSF guidelines and requirements. Substantial disruptions to freight rail operations are unlikely, given that the Project would construct a dedicated station siding and would not increase the number of San Joaquins or HSR trains. Furthermore, the CHSRA's grade separation project of Avenue 12 will separate all automobile traffic from the BNSF Corridor, which should improve operating conditions for freight trains after construction is completed on this Project. Nevertheless, some temporary and minor disruptions could still occur during Project construction, such as nighttime track closures/shutdowns, slow zones, and other effects.

Regular coordination meetings between the SJJPA and BNSF would take place throughout the entire design and construction stages of the Project and would address construction-related effects on existing freight operations, such as scheduling of construction activities within the ROW. Servicing of local freight customers by BNSF would be given priority, and a memorandum of understanding (MOU) would be in place between the SJJPA and BNSF to address Project construction activity. The MOU would also include operating protocols, track-sharing arrangements, and other provisions, as needed.

In recognition of potential disruptions to the circulation system, however, the impacts to freight rail due to Project construction have been conservatively deemed potentially significant.

Mitigation Measures

Given the above considerations, the Project would generally conform to and support—and not conflict with—programs, plans, ordinances, and policies addressing the circulation system, and the associated impacts of Project operation related to the regulatory setting would be less-than-significant. In recognition of potential disruptions to the circulation system during Project construction, however, the associated impacts of Project construction have been conservatively deemed potentially significant.

The following mitigation measures would require development of a transportation management plan and a freight rail disruption control plan for Project construction to minimize construction impacts to transit, roadway, bicycle, and pedestrian facilities and to

freight rail operations. Implementation of MM-TR-1 and MM-TR-2 would reduce these Project impacts. Therefore, construction and operational impacts related to conflict with a program, plan, ordinance the regulatory setting would be less than significant with mitigation incorporated.

- **MM-TR-1 Transportation Management Plan for Project Construction.** The San Joaquin Joint Powers Authority (SJJPA) shall coordinate with public works and transportation departments of local jurisdictions to develop a transportation management plan that shall mitigate construction impacts to transit, roadway, bicycle, and pedestrian facilities, while allowing for expeditious completion of construction. Measures that shall be implemented throughout the course of Project construction shall include, but shall not be limited to, the following:
 - Limit number of simultaneous street closures and consequent detours of transit and automobile traffic within each immediate vicinity, with closure timeframe limited as much as feasible for each closure, unless alternative routes are available.
 - Implement traffic control measures to minimize traffic conflicts for all roadway users (regardless of mode) where lane closures and restricted travel speeds shall be required for longer periods.
 - Provide advance notice of all construction-related street closures, durations, and detours to local jurisdictions, emergency service providers, and motorists.
 - Provide safety measures for motorists, transit vehicles, bicyclists, and pedestrians to ensure safe travel through construction zones.
- **MM-TR-2 Freight Rail Disruption Control Plan for Project Construction.** The SJJPA shall make efforts to contain and minimize disruption to freight services during Project construction, while allowing for expeditious completion of construction. Measures that shall be implemented throughout the course of Project construction shall include, but shall not be limited to, the following:
 - Limit number of simultaneous track closures within each immediate vicinity, with closure timeframe limited as much as feasible for each closure, unless bypass tracks or alternative routes are available.
 - Provide safety measures for freight rail operations through construction zones.
 - Require contractors to coordinate with rail dispatch to minimize disruption of rail service in the corridor.
 - Where feasible, maintain acceptable service access for freight operations.
 - Where track closures result in temporary suspension of freight rail service, work with BNSF and freight users to schedule alternative freight service timing to minimize disruption to freight customers. Where such closures shall result in substantial diversion to trucks, SJJPA or their construction contractor(s) shall

coordinate with local jurisdictions and freight carriers to determine preferred truck routes to minimize the effect on the circulation system.

- Provide advance notice of construction-related track closures to all affected parties.
- Coordinate with BNSF in advance and during any potential disruption to freight operations and/or BNSF facilities, and maintain emergency access for BNSF for the duration of construction.

3.17.2. Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

CEQA Guidelines section 15064.3, subdivision (b) specifies applicable criteria for analyzing transportation impacts. Specifically, it states the following:

Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements.

The Project is a transportation project (and, specifically, a transit project), and would reduce VMT by inducing a mode shift from personal (household) automobiles to public transit, including for long-distance commute and intercity trips. In particular, the Relocated Station would expand the catchment of the San Joaquins service and is expected to result in increased ridership overall compared to the existing station in Madera Acres. The new platform as part of Phase 2 would bring intercity HSR service directly to Madera County, generating further increases in passenger rail ridership.

While there is expected to be some increase in localized VMT due to vehicle activity to and from the proposed station—including some all-new VMT associated with induced demand captured by the Project—these effects would be far outweighed by the reduction in regional and intercity VMT due to mode shifts from automobiles to passenger rail.

Given these considerations, construction and operational impacts related to conflicts or inconsistencies with CEQA Guidelines section 15064.3, subdivision (b) would be less than significant.

3.17.3. Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project would involve construction and operation of a new passenger train station and ancillary facilities, along with associated trackwork and site access improvements.

The existing at-grade crossing along the BNSF Corridor at Avenue 12 is currently being eliminated separately from the Project as part of the CAHSR Project's Avenue 12 grade-separation, which will improve safety.

As part of Phase 2 of the Project, at-grade trackwork related to the station siding for the HSR platform will be constructed across what is currently identified as Avenue 13. However, this section of Avenue 13, between the CAHSR Project mainline corridor (under construction) and the BNSF Corridor, is now permanently closed. Therefore, no new at-grade crossing will be created as part of the Project.

The design, construction, and operation of the Project's rail components would comply with applicable standards from the FRA and/or CPUC. Similarly, design, construction, and operation of site access improvements, including new roadways or modifications to existing roadways, would adhere to applicable standards such as the California Manual on Uniform Traffic Control Devices (MUTCD) and local design guidelines and specifications. Design approval for specific Project components would be sought from the appropriate agencies as part of detailed design and subsequent stages of the Project.

Given these considerations, construction and operational impacts related to hazards from geometric design features or incompatible uses would be less than significant.

3.17.4. Would the Project result in inadequate emergency access?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Emergency vehicle access for the area is currently provided primarily by Avenue 12, which is a major east–west arterial roadway providing direct access to and from SR-99. For the interim configuration as part of Phase 1, a temporary two-lane access road would be constructed, connecting into the elevated portion of Avenue 12 via the north-side ramp structure currently being constructed as part of the CAHSR Project (i.e., Avenue 12 grade-

separation). The two-lane access road would also connect to an underpass beneath Avenue 12, which would lead to a local frontage road (a segment of the previous two-lane, at-grade Avenue 12) immediately south of the elevated portion of Avenue 12. The underpass and local frontage road are currently under construction as part of the CAHSR Project and, would provide access to properties along the south side of the Avenue 12 grade-separation.

For the ultimate configuration in Phase 2, the station access road would be expanded to a four-lane roadway and would be realigned to connect directly with Avenue 12, replacing the north-side ramp structure used in Phase 1. As the new station siding track in Phase 2 would occupy space used for the underpass beneath Avenue 12 in Phase 1, the Project would construct a new underpass beneath Avenue 12, slightly to the east of Phase 1 underpass, to maintain general and emergency vehicle access for properties along the south side of Avenue 12.

As discussed under Impact (3.18.3), design, construction, and operation of Project elements would comply with applicable standards from Caltrans and local agencies (for site access improvements) and from the FRA and/or CPUC (for the Project's rail elements), including provisions for emergency access. As discussed under Impact (3.18.1), any temporary roadway closures would be coordinated with local agencies to minimize any disruptions to the circulation system, including to emergency vehicle response.

Given these considerations, the construction and operational impacts related to emergency access would be less than significant.

3.18. TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Listed or eligible for listing in the California Register of Historic Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1(k) or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision(c) of Public Resources Code Section 5024.1 in applying the criteria set forth in subdivision(c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

This section briefly describes the regulatory and environmental setting for tribal cultural resources in the vicinity of the Project Footprint. It also describes the impacts on tribal cultural resources that would result from implementation of the Project and mitigation measures that would reduce significant impacts, where feasible and appropriate. This analysis is based on the results of a cultural resources technical document prepared by AECOM (Beck 2020).

Under CEQA (California Public Resources [Cal. Public Res.] Code Section 21074)), tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

Regulatory Setting

Assembly Bill 52

On September 25, 2014, Governor Jerry Brown signed AB 52, which requires the lead agency on a proposed project to consult with any California Native American tribes affiliated with the geographic area. The legislation creates a broad new category of environmental resources, “tribal cultural resources,” which must be considered under CEQA; AB 52 creates a distinct category for tribal cultural resources, requiring a lead agency to not only consider the resource’s scientific and historical value, but also whether it is culturally important to a California Native American tribe. AB 52 defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe” that are included in or determined to be eligible for inclusion in the CRHR or the local register of historical resources.

AB 52 also sets up an expanded consultation process. Beginning July 1, 2015, lead agencies are required to provide notice of proposed projects to any tribe traditionally and culturally affiliated with the geographic area. If, within 30 days, a tribe requests consultation, the consultation process must begin before the lead agency can release a draft environmental document. Consultation with the tribe may include discussion of the type of review necessary, the significance of tribal cultural resources, the significance of the project’s impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The consultation process would be deemed concluded when either (a) the parties agree to mitigation measures or (b) any party concludes, after a good faith effort, that an agreement cannot be reached. Any mitigation measures agreed to by the tribe and lead agency must be recommended for inclusion in the environmental document. If a tribe does not request consultation, or otherwise assist in identifying mitigation measures during the consultation process, a lead agency may still consider mitigation measures if the agency determines that a project would cause a substantial adverse change to a tribal cultural resource. Tribal cultural resources are discussed in Appendix B Cultural Resources Technical Memorandum.

California Health and Safety Code—Treatment of Human Remains

Any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Code of Regulations (Cal. Code Regs.) Section 15064.5(e), Cal. Public Res. Code Section 5097.98, Health and Safety Code (Health & Safety Code) Section 7050.5. California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Disturbance of Native American cemeteries is a felony (Health & Safety Code 7052). Under Section 8100 of the California Health and Safety Code (Health & Safety Code), six or more human burials at one location constitute a cemetery.

Section 7050.5 of the Health & Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must then contact the NAHC, which has jurisdiction pursuant to Cal. Public Res. Code Section 5097.

Environmental Setting

This section describes the environmental setting related to tribal cultural resources for the Project. This Project Footprint for tribal cultural resources is referred to as the Project Footprint for archaeological resources, tribal cultural resources, and historic-age built environment resources. The Project Footprint for tribal cultural resources is defined as follows:

The study area for tribal cultural resources is the environmental footprint of the Project improvements for Phases 1 & 2 and consists of those areas affected by physical changes, including both horizontal surface disturbance and vertical subsurface disturbance.

This Project Footprint includes areas where construction, demolition, destruction, or physical change may occur as part of the Project. Cultural Resources: Figure 3.5-1 depicts the Project Footprint for tribal cultural resources for the Project for Phases 1 and 2.

Native American Outreach

On March 18, 2020, AECOM cultural resources staff contacted the NAHC requesting a review of the Sacred Lands File (SLF) and a list of individuals who may have information regarding or interest in the SJPA Madera Relocated Station Project Footprint. The request contained location details, Project maps, and a general description of the Project. This request is considered formal notification of a proposed Project as required under CEQA, specifically Cal. Public Res. Code Section 21080.3.1 and Chapter 532 Statutes of 2014 (AB 52). The NAHC responded on March 24, 2020, with a list of three Native American contacts. The NAHC also noted that a search of the SLF was negative. SJPA sent letters to three Native American tribal contacts on the NAHC list on April 21, 2020, along with Project maps, requesting information or concerns about resources within the Project Footprint. After no responses to the letters were received, AECOM on behalf of SJPA made follow-up calls on May 5, 2020. Messages were left for Chairpersons Fink and Perez, while the message box was full for Chairperson Leonard.

3.18.1. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historic Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Outreach with the NAHC-listed Native American tribes has resulted in no resources identified as tribal cultural resources as described under AB 52. Because no resources meet the criteria for a tribal cultural resource under Pub. Resources Code Section 21074, there would be no impact to tribal cultural resources. Operation of Project once constructed would not require disturbance of additional areas outside the Project Footprint. As such, no

construction and operational impacts would occur related to changes in the significance of a tribal cultural resource.

- 3.18.2. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision(c) of Public Resources Code Section 5024.1 in applying the criteria set forth in subdivision(c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Similar to Impact (3.18.1), the outreach to NAHC-listed Native American tribes has resulted in no resources identified as tribal cultural resources as described under AB 52. As a result, no construction or operational impacts would occur related to a tribal cultural resources.

3.19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.19.1. Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Determination: LESS THAN SIGNIFICANT IMPACT

The Project is consistent with the 2020 SJJPA Business Plan Update, which includes short-term programs for the relocation of the existing Madera Station to a site in the vicinity of Avenue 12 site. The Plan states that a proposed station north of Avenue 12 would be consistent with the growth patterns of Madera County west of the BNSF Corridor, which provides the opportunity for TOD in the station vicinity and would be closer to Madera Community College. The City of Madera also supports development of the CAHSR system as long as it is established within a rail corridor and located to minimize impacts to agricultural

lands outside the growth boundary. As such, the Project would be consistent with local and specific plans for the designated site and would be consistent with the development scenario for which water supply is planned.

There are no wastewater drainage facilities within the Project Footprint. However, there are existing utilities east of the Project Footprint located on Avenue 13 and Road 30 within the eastern edge of the City of Madera Growth Boundary. The city owns, operates, and maintains the sanitary sewer collection system, which consists of over 175 miles of gravity trunks and force mains, with up to 48-inch pipe sizes, which convey the flow to the Madera Wastewater Treatment Plant (WWTP), on Road 21 ½ and Avenue 13. The WWTP has an average daily capacity rating of 10.1 million gallons per day (MGD).

Due to topography, the City's sanitary sewer system is divided into five separate dendritic sewer collection basins, each defining the boundaries of a sewer collection trunk system. The five major wastewater collection basins include Westberry, Schnoor, Fourth Street, Stadium, and Pecan basin. Improvements to expand wastewater treatment facilities would occur within the Project Footprint in the intermediate to long-term (FY2016-2050) as new developments arise. Improvements include the construction of a new 21-inch gravity sewer in Avenue 12 from 3,990 feet east of Road 30 ½ to Road 30 ½; a new 15-inch gravity sewer in Road 30 ½ from Pecan Avenue (Avenue 13) to Avenue 12; and a new 15-inch gravity sewer in Avenue 12 ½ extension from 2,630 feet east of Road 30 ½ to Road 30 ½. Similar improvements are identified in the northern section of the Project Footprint along the BNSF trackway and along Avenue 14 (as shown in Figure 3.19-1. Additionally, there is no stormwater drainage, electric or telecommunication facilities located within the Project Footprint.

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Sanitary waste would be generated during construction activities and for building facilities during operation. As such, the construction of new or expanded wastewater facilities would occur as part of this Project. An onsite Wastewater Treatment System (OWTS) would be constructed to treat wastewater from the planned station restroom. It is assumed that the Project would not be hooked up to the City's sewer system.

Madera County Guidelines for implementing OWTS state, "any structure, regardless of use, that produces wastewater, shall have adequate wastewater treatment and dispersal. When public sewer connection is not available, adequate treatment and dispersal shall be accomplished by means of an approved OWTS." As such, wastewater would be stored in an OWTS, such as a septic tank within the Project boundary. All conventional OWTS require the use of a septic tank to allow for the removal of solids in the wastewater prior to being discharged to the dispersal field. Waste would be removed by using private companies that

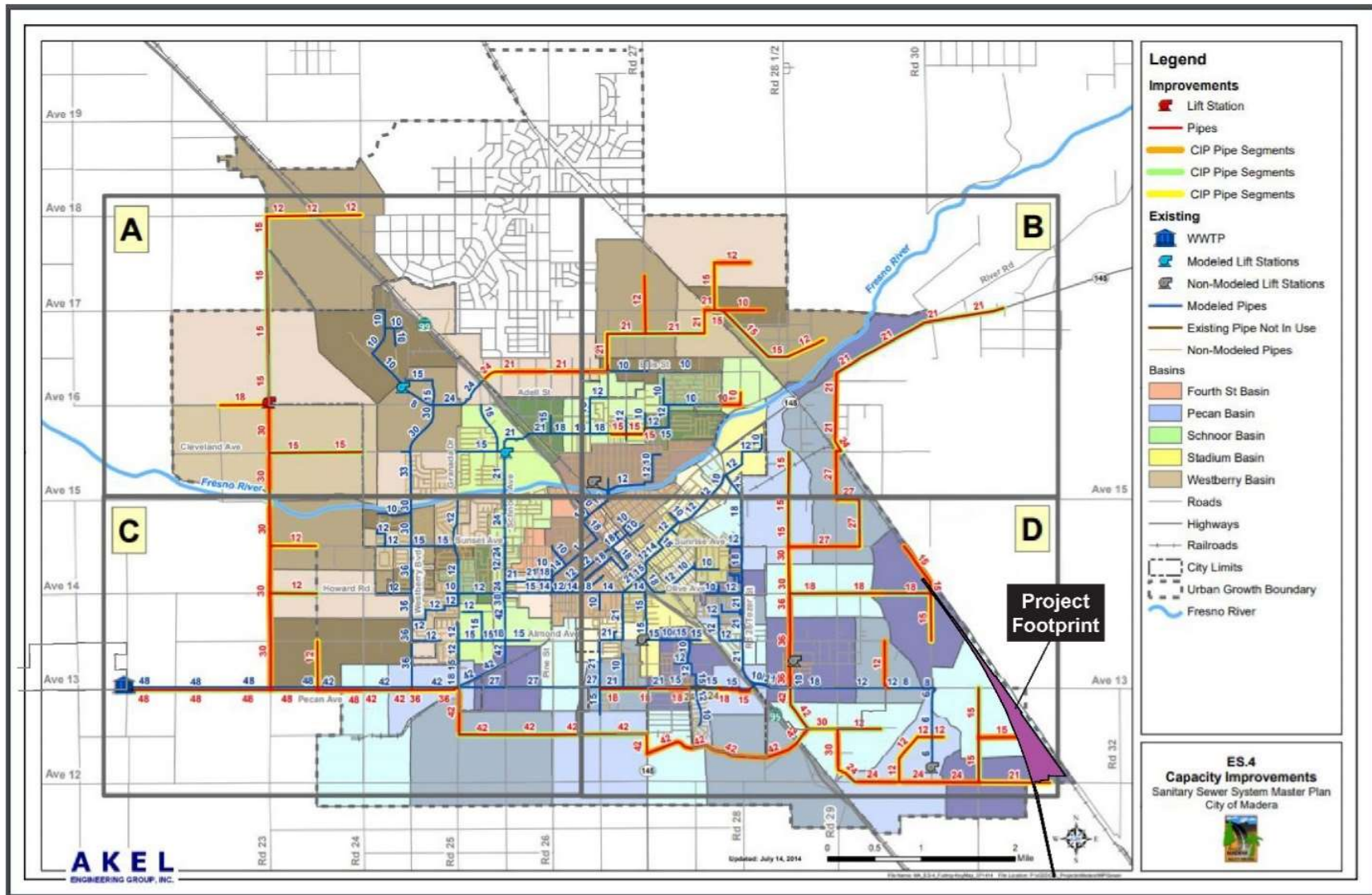
have permits to operate within Madera County who provide waste removal services, including septic pumper trucks. The Project is also required to have regulatory permits for discharging water into district facilities as is outlined in Section 16 of the District's Rules and Regulations for the Distribution of Water. Since no OWTS exist within the Project Footprint, this would result in a potentially-less than significant effect related to the expansion of wastewater treatment facilities.

As mentioned above, the Project would also require the construction of new stormwater drainage facilities within the Project Footprint with the development of the access road, parking lot and buildings. Madera County Public Works Department states, "New and future developments are not permitted to divert any storm runoff into existing facilities. Therefore, future developments must contain, retain and mitigate for storm water through catch basins. The County, unlike the cities, does not have a master plan and therefore every new development must retain their runoff and all designs must meet and withstand the 100-year storms. A storm water drainage system would be constructed to provide drainage for storm water from the access road, parking lot, and other station facilities. The drainage system would lead to a stormwater retention pond located immediately south of Phase 1 parking structure. The stormwater retention pond would be designed to accommodate additional stormwater anticipated from the expanded station facilities and access road associated with Phase 2. It is therefore in the public interest to ensure that drainage systems are properly maintained to facilitate the proper functioning of storm and surface water drainage system, and to prevent pollutants from entering surrounding bodies of water. Madera County Ordinance 680 outlines control measures related to storm water and storm sewer systems, illicit discharge and connections, construction site storm water runoff and landscaping, which would help reduce impacts related to storm water runoff within the Project Footprint. Implementing standard construction practices such as Best Available Technology Economically Feasible (BATs), Best Conventional Pollutant Control Technology (BCTs), and Best Management Practices (BMPs) would help reduce potential impacts related to storm water drainage systems. Therefore, construction or operational impacts related to new storm water drainage systems would result in less than significant impacts.

The Project would require the construction of new electric power facilities, including lighting posts and signage throughout the station area. In addition, a new signalized intersection where Avenue 12 and the new access road would intersect would be built. Additionally, the HSR trackwork would include approximately twenty-foot tall electrical poles at specified intervals to be part of the overhead contact system for the electrification of HSR train vehicles. A TPSS may also be within the area between the two platforms in order to provide power for the electrification of trains (if it is necessary). Existing land uses within the Project Footprint do not have existing infrastructure in place to support these electrical needs. However, the Project would tie into existing electrical facilities located outside the Project Footprint. As such, construction and operational impacts related to the expansion of electrical power would be minimal and result in less than significant impacts.

The construction of natural gas facilities are not required as part of this Project. Therefore, no construction or operational impacts would occur related to the expansion of natural gas facilities. The Project would require the construction of telecommunication facilities such as wireless security cameras and information panels at stations. However, construction or operational impacts related to the expansion of telecommunication facilities would be minimal and result in less than significant impacts.

Figure 3.19-1 City of Madera Sewer Capital Improvement Plan Map 2014



Source: City of Madera Sanitary Sewer System Master Plan, 2014

3.19.2. Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Madera Irrigation Water District provides water supply for areas within the Project Footprint. Approximately 97% of all groundwater use in Madera County is for agricultural purposes, and all urban uses (including cities and unincorporated towns and homes on individual wells) account for only 3% of total use. The Project would be served by the Madera Irrigation Water District, which provides water supply to all lands within the 128,000-acre District except for the City of Madera and Madera Water District. (see Figure 3.19-2). Since future land use within the Project Footprint is designated for agricultural and low-residential land use, it is assumed sufficient water supplies would be available to serve the Project and future developments during normal, dry and multiple dry years. Projected demands for water supply for the construction and operations of the Project would be minimal compared to water used for agricultural and low-residential uses. As such, construction and operational impacts related to sufficient water supplies available to serve the Project and future developments would be less than significant.

3.19.3. Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

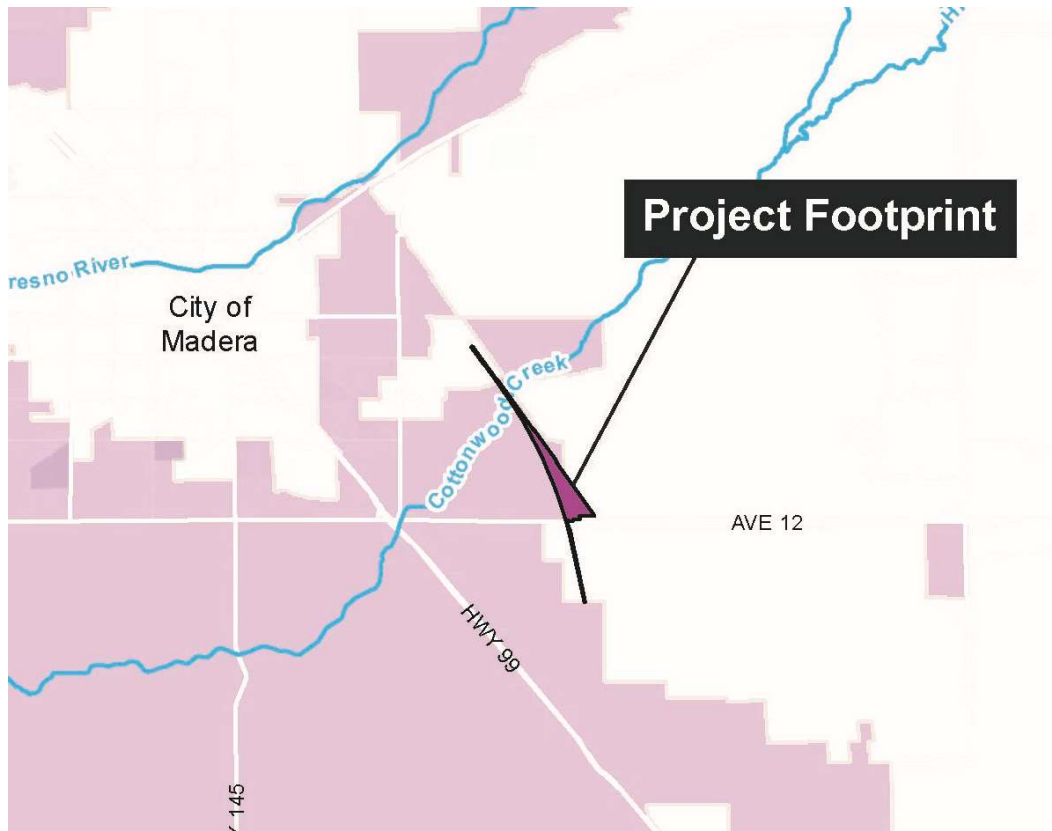
Determination: LESS THAN SIGNIFICANT IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

As described under Impact (1), the Project would generate wastewater from building facilities with restrooms. In addition, construction and operations of the access road, sidewalks and parking lots could change existing runoff characteristics and increase the flow and volume of storm water. As described under Impact (1), the Project is in an area identified for the expansion of wastewater utilities and would include an OWTS to be serviced by the City of Madera, County of Madera and the Madera Irrigation District wastewater collection and treatment services. Therefore, construction and operational impacts of the Project would not exceed the capacity of the wastewater service provider and impacts would be less than significant.

Figure 3.19-1 Madera Irrigation District Service Area



Source: Madera Irrigation Water District (shown in light purple), ArcGIS Map, 2020

- 3.19.4. Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

During Project construction and operations, waste would be disposed of by using bins for both recycling and waste material in compliance with District, local, state, and federal criteria, standards, regulations or laws, and would be disposed of through a commercial collector. Solid waste collected within the Project Footprint would be sent to Fairmead Landfill which is approximately 17 miles northwest in the City of Chowchilla within Madera County. The landfill is owned by Madera County and operated by the Redrock Environmental Group. As of March 2017, the total acreages permitted increased from 121.7 total (disposal 97) to 146.9 total (disposal 122.3), which increased the volumetric capacity

from 13,186,000 to 23,007,696, and extended the estimated closure date from 2028 to 2048. As such, there is adequate capacity at the landfill site within Madera County to dispose of solid waste from Project construction. The Project would also be required to divert (recycle) 50 percent of the solid waste generated by both construction and operation to comply with the 50 percent solid waste diversion rate mandated by the California Integrated Waste Management Act of 1989 (AB 939). As such, no construction and operational impacts would occur that exceed State or local standards, including excess capacity of local infrastructure that would impair the attainment of solid waste reduction goals.

3.19.5. Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

As described in Impact 3.19.1 through Impact 3.19.4 above, construction and operation of the Project would meet the requirements of applicable federal, state, and local statutes for regulating solid waste. This is accomplished by implementing BATs, BCTs, and BMPs, as well as apply for all the required water and disposal permits from the City and County for construction and operation permits. Therefore, no construction or operational impacts would occur as it relates to compliance with federal, state, and local statutes and regulations related to solid waste.

3.20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

3.20.1. Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The Project Footprint is in an agricultural area of Madera County that is not adjacent to wildlands, and as such, would not be subject to wildland fire risks. In addition, the Project would not include design features that would impede the provision of emergency access to or from the site. Fire and other emergency access for the structures would be provided by the proposed access road. The new interior roadway that would be used to access the Project Footprint would be built to City and County standards, thereby ensuring that emergency vehicles can readily and easily access the Project Footprint. Therefore, no construction or operational impacts would occur that substantially impair an adopted emergency response plan or emergency evacuation plan.

- 3.20.2. Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Agricultural lands surround the Project boundary, which may include hazards like noxious weeds which are more drought tolerant and could increase fire risk. Weather components such as temperature, relative humidity, wind, and lightning affect wildfire potential in the Sierra Nevada in the eastern parts of Madera County. Winds can be significant at times in the County, such as the Santa Ana winds that are especially conducive to hot, dry conditions, which can lead to “red flag” days indicating extreme fire danger. In addition to wind speed, wind shifts can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. Although landscapes within the County are exposed to substantial wildfire risk, the Project is located in a relatively flat area and is not exposed to exacerbated wildfire risk. Therefore, construction and operational impacts would not occur related to slope, prevailing winds, and other factors that would exacerbate wildfire risks, and thereby would not expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

- 3.20.3. Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Areas of Madera County are not normally susceptible to wildland fires, however, there is still potential for smaller fires in and around the less developed areas where patches of vegetation are present. Most wildfires within the County originate in populated areas along roads and around homes, that are often the result of arson or careless acts such as the disposal of cigarettes, use of equipment or debris burning. Other factors contributing to wildfire risk include; excessive vegetation along roadsides and hanging over roads, fire engine access, and evacuation routes; narrow and often one-lane and/or dead-end roads complicating evacuation and emergency response as well as the many subdivisions that have only one means of ingress/egress; and increasing population density.

The County is increasing the number of defensible space inspections which has been effective in reducing the amount of ground fuels that contribute to large, uncontrolled wildfires. The Madera County Community Wildfire Protection Plan (CWPP) encompasses the areas of Madera County, north and east of the Madera Canal. The planning area is multi-jurisdictional in that it addresses wildfire risk and mitigation measures that include privately owned property, tribal lands, and Federal lands administered by the United States Forest Service, Bureau of Land Management, and Army Corps of Engineers. The Project would meet the building standards and operation requirements outlined in California Building Code (Title 24 of the California Code of Regulations) and be in accordance with Countywide ordinances outlined in the CWPP, which would reduce the potential for smaller fires in and around less developed areas. Therefore, no construction or operational impacts would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water resources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

3.20.4. Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

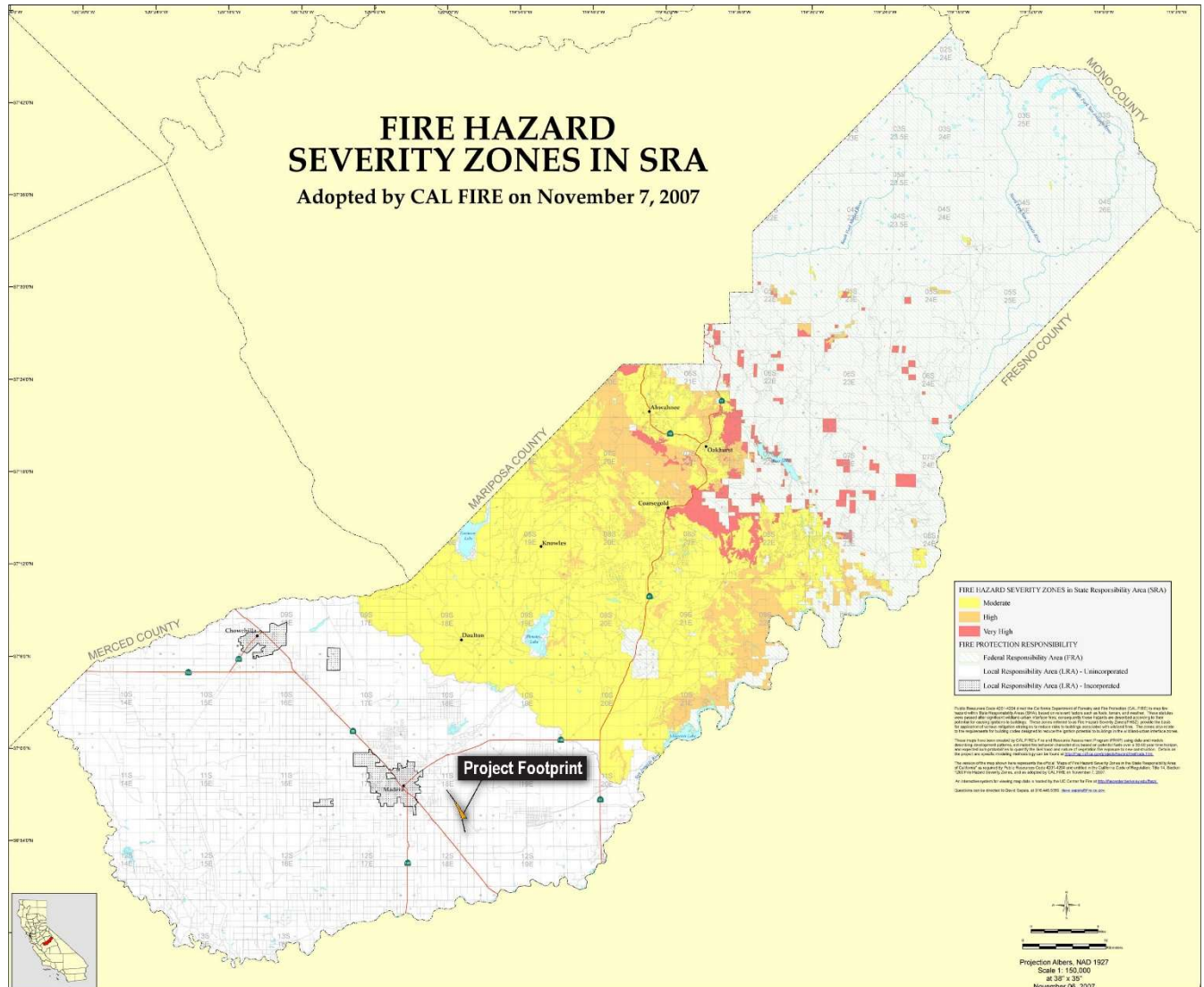
Determination: NO IMPACT

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Over the last couple of years, the severe drought has caused much of the vegetation along sloped areas fail to thrive, thus there is a lack of vegetation to hold soil contributing to the landslide/mudslide potential. However, landslide hazards within Madera County are confined to the foothills and mountainous terrain, and the steep banks of the rivers which pass through the valley floor. The Project is not in an area with potential to expose people or structures to significant risks, including downslope or downstream flooding of landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, no construction or operational impacts would occur that would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Figure 3.20-1 Madera County Fire Hazard Severity Zones



Source: CalFire, Madera County Fire

3.21. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion:

3.21.1. Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Determination: LESS THAN SIGNIFICANT IMPACTS WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

Refer to Sections 3.4 Biological Resources, 3.5 Cultural Resources, and 3.7.6 Geology and Soils.

Mitigation measures MM-BIO-1 through and including MM-BIO-27 would reduce any potential impacts related to degrading the quality of the environment, substantially reducing the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, substantially reducing the number or restrict the range of a rare or endangered plant or animal to less than significant.

Mitigation measures MM-CUL-1, MM-CUL-2, MM-CUL-3, MM-CUL-4, MM-GEO-1, MM-GEO-2, and MM-GEO-3 would reduce any potential impacts related to eliminating important examples of the major periods of California history or prehistory to less than significant.

Therefore, impacts would be less than significant with mitigation incorporated.

3.21.2. Does the Project have impacts that are individually limited, but cumulatively considerable?

Determination: LESS THAN SIGNIFICANT IMPACT

The known projects that would be in construction or be developed during the construction and operations of the Project include:

1. Merced to Bakersfield IOS (Part of the approved CAHSR Project) – The CHSRA is currently constructing the Merced to Bakersfield IOS track and associated infrastructure in the vicinity and directly adjacent to the Project. Construction of the CAHSR Project is expected to continue during the construction and operational period of the Project. Construction activities in the vicinity of the Project Site from the CAHSR Project would include track construction, OCS infrastructure construction, fencing, and completion of bridge over Cottonwood Creek. The HSR Project would likely be in construction for the entirety of the construction of this Project and finalized by the operational portion of Phase 2 of this Project.
2. Avenue 12 Grade Separation (part of the approved CAHSR Project) – Currently under construction by the CHSRA as part of the CAHSR Project. HSR is constructing a grade separation for Avenue 12 over the existing BNSF rail corridor and over the HSR corridor under construction that also will expand the number of lanes on Avenue 12. This project would likely be completed by the time Phase 1 of the Project starts construction.
3. CAHSR Expanded Service (part of the approved CAHSR Project) – Following the Merced to Bakersfield IOS operations, CHSRA plans to first implement Valley to Valley service (San Joaquin Valley to Silicon Valley) which will increase HSR operations along the proposed HSR alignments, including those passing the Relocated Madera Station. Following Valley to Valley service, CHSRA plans to then implement Phase 1 Service (Los Angeles to San Francisco), which would further increase HSR operations.
4. Future Expansion of the Madera HSR Station (future planned part of the CAHSR Project) – As part of implementation of the Valley to Valley Phase for the CAHSR Project, the

proposed HSR station at Madera would likely need to expand beyond the interim station included in this Project as the operational requirements would be substantially greater than the initial operating segment. While details of this expansion have not been developed yet, it can be anticipated that improvements would include two platforms, one on each side of the high-speed main line tracks. Each platform would be designed to accommodate a double high-speed trainset (1,400 feet long) and be located adjacent to a platform loop track separate from the high-speed main line tracks. Turnouts would be provided on to and off of the platform loop tracks. A possible access bridge connecting it to the proposed station area under this Project on the east side. It is also reasonable to expect that there would be expanded infrastructure of the station proposed in this Project as well as expanded parking. This project would be developed after operations of Phase 2 of this Project begins.

5. Avenue 12 Widening –Madera County proposed to widen Avenue 12 from two to four lanes from SR-41 to SR-99, although some of this is already occurring as part of the CAHSR Avenue 12 grade separation over the BNSF and CAHSR Project tracks. The Avenue 12 Widening would likely start construction while Phase I of this Project is in operations and continue in phases.
6. Various private residential and mixed used development in southeast Madera County – As discussed in Section 3.11 Land Use and Planning, there are several private developments that are either under construction or planned along Avenue 12 and to the southeast of the Project Site. These projects are shown in Figure 3.11-1. Some of these private developments may be built by the time Phase 1 of this Project starts construction and the full development of these projects may extend into the operational portion of Phase 2 of this Project.
7. Implementation of the Madera State Center Community College Specific Plan – The Madera SCCC Specific Plan covers an area of 1,867 acres and is designated for future development, including TOD. The Madera SCCC Specific Plan identifies a transit station that could include rail service within its planning boundaries adjacent to the BNSF Corridor. The development of the Specific Plan would start with the construction of Phase 1 of this Project and other elements may be developed during operations of Phase 1, and construction and operations of Phase 2.

All of these reasonably foreseeable projects in the vicinity of the Project Site have or will be required to prepare their own environmental documentation which would disclose any potential environmental impacts and mitigation needed.

Phase 1 – San Joaquins Relocated Station/ Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

The primary environmental topics that may be significantly affected by some of the cumulative projects in combination with the Project impacts would be changes to

agricultural lands and biological resources. As with the Project, extensive mitigation is or would need to be implemented by each related project to reduce impacts, regardless of the type of environmental assessment being prepared. For example, the HSR project has extensive mitigation requirements from its prior environmental compliance for the CAHSR Merced to Fresno Project Section addressing biological resource impacts, agricultural impacts, and other impacts identified in the completed EIR/EIS for the section. Future environmental compliance for an expanded Madera HSR Station would have similar mitigation applied to any additional biological or agricultural impacts due to station expansion effects. This Project includes numerous mitigation measures for both construction and permanent biological resource effects and includes one-to-one preservation of agricultural lands for any farmland converted. Cumulatively, development of potential habitat and agricultural land due to cumulative projects would be significant before consideration of mitigation. Cumulative impacts will be reduced through the implementation of previously adopted mitigation and future mitigation in environmental review of projects yet to complete environmental compliance. For this Project, given the extent and comprehensive character of mitigation that has been provided in this document to reduce impacts to less than significant, the Project would not have substantive residual or significant impacts to biological resources or agricultural lands and thus it is not anticipated that this Project would contribute considerably to any significant cumulative impacts to biological resources and agricultural lands.

For environmental topics evaluated in this IS/MND that this Project would have significant impacts before mitigation (including air quality, cultural resources, paleontological resources, hazardous materials, hydrology, and transportation impacts during construction), those impacts can be readily reduced to a less than significant level with mitigation that consists of industry-standard mitigations, regulatory compliance, and best management practices that all related projects would be required to utilize and comply with as well. The environmental clearance for the HSR Fresno to Merced section includes similar mitigation as identified in this document for this Project and any future environmental clearance for an expanded HSR Madera Station would certainly include similar mitigation as well. As all these industry-standard mitigations, regulatory compliance and best management practices are meant to minimize impacts, this Project would not contribute considerably to significant cumulative impacts for any of these specific environmental topics evaluated in this IS/MND.

For all other environmental topics evaluated in this IS/MND (energy, geology/soils, greenhouse gas emissions, water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation during operation, tribal cultural resources, utilities/service systems, and wildfire), as described in this document, this Project would have limited impacts that would be less than significant. Although some of the cumulative projects may result in significant impacts related to some of these topics (due to their specific location or scale or other unique factors of those projects) and there may be a potential for certain cumulatively significant impacts, the Project's contribution to

any such cumulative impact would be limited in scale and duration and thus this Project would not contribute considerably to significant cumulative impacts for any of these specific environmental topics evaluated in this IS/MND.

3.21.3. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Determination: LESS THAN SIGNIFICANT IMPACTS WITH MITIGATION INCORPORATED

Phase 1 – San Joaquins Relocated Station / Phase 2 – HSR Interim Operating Segment Station

Construction and Operational Impacts

This Initial Study includes a comprehensive evaluation of the potential impacts to human beings, directly or indirectly, during construction and operations. Based on this evaluation, impacts related to causing a substantial adverse effect on human beings, either directly or indirectly, would be less than significant with mitigation incorporated.

The Project would have overall benefits to the connectivity and transit options in Madera County and the San Joaquin Valley. Although the relocation of the Madera Station would move this transit option further away from the population that is currently adjacent to the existing station, the decision is based on what is known about the currently planned and anticipated growth in Madera County and north Fresno County. In addition, by being closer to a college and Avenue 12 (and its connectivity with SR-99), this relocated station provides greater access to a larger part of the transit-dependent populations, that are not currently being served.

4. LIST OF PREPARERS

SAN JOAQUIN JOINT POWERS AUTHORITY (Lead Agency)

Name	Title	Role
Dan Leavitt	Manager of Regional Initiatives	Project Manager
Paul Herman	Senior Planner	Document Reviewer

AECOM (Environmental Consultant)

Name	Title	Role
Diane Cowin	Business Development Director	Project Director
Daniel Krause	Senior Transportation Planner	Project Manager
Daniel Hartman	Transportation Engineer	Project Engineer
Jaime Guzmán	Senior Project Manager	Environmental Manager
Michael Kay	Senior Environmental Planner	Technical Quality Review
Rob Hertz	Associate Vice President	Technical Quality Review
Katherine Lee	Transportation Planner	Deputy Environmental Manager/ Environmental Task Lead
Anthony Mangonon	Transportation Planner	Environmental Task Lead
Charles Battaglia	Biologist	Environmental Task Lead
Chandra Miller	Architectural Historian	Environmental Task Lead
Emma Rawnsley	Senior Environmental Planner	Environmental Task Lead
Issa Mahmodi	Traffic and Noise Analyst	Environmental Task Lead
Jenifer King	Senior Environmental Scientist	Environmental Task Lead
Jessica Koon	Transportation Planner	Environmental Task Lead
Karin Beck	Senior Archaeologist	Environmental Task Lead
Paola Pena	Air Quality Scientist	Environmental Task Lead
Victor Xie	Transportation Planner	Environmental Task Lead/ Graphics/GIS
Melissa Gjerde	Transportation Planner	Outreach

5. REFERENCES

Aesthetics & Visual Quality

1. Caltrans (2019), List of Eligible and Officially Designated State Scenic Highways, <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>
2. National Register of Historic Places (NRHP), <https://npgallery.nps.gov/NRHP/AssetDetail?assetID=ac52da44-fdce-4fe3-af84-d77c1f1d1e02>
3. Google Street view, captured May 2020

Agricultural & Forestry Resources

4. California Department of Conservation. 2016. California Important Farmland Finder. Available: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed April 28, 2020.
5. California Department of Conservation. 2020. Important Farmland Categories. Available: <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx>. Accessed April 28, 2020.
6. Madera County. 1995 (July). Madera State Center Community College Specific Plan. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-120>. Accessed May 4, 2020.
7. Madera County. 2015. Madera County General Plan Policy Document. Adopted 1995, as amended 2015. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-269>. Accessed May 6, 2020.
8. Madera County. 2020. Madera County Municipal Code. Available: https://library.municode.com/ca/madera_county/codes/code_of_ordinances?nodeId=TIT18ZO. Accessed May 6, 2020.
9. Madera County Assessor. 2020. PacerQuest Lite. Available: <https://www.maderacounty.com/government/assessor/parcel-search-information>. Accessed May 7, 2020.

Air Quality

10. California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available at: <https://ww3.arb.ca.gov/ch/handbook.pdf>. Accessed May 2020.
11. San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. Available at: http://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf. Accessed May 2020.
12. 2018a. Project Ambient Air Quality Analysis Applicability Determination under CEQA. Available at: http://www.valleyair.org/policies_per/Policies/APR-2030.pdf. Accessed May 2020.

13. 2018b. 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards. Available at: <http://valleyair.org/pmplans/documents/2018/pm-plan-adopted/2018-Plan-for-the-1997-2006-and-2012-PM2.5-Standards.pdf>. Accessed May 2020.
14. South Coast Air Quality Management District (SCAQMD). 2014. Off-Road Engines Table II. Available at: <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/off-road-engines>. Accessed May 2020.
15. 2015. Brief of Amicus Curiae in Sierra Club, Revive the San Joaquin and League of Women Voters of Fresno v. County of Fresno and Friant Ranch. Available: <https://www.courts.ca.gov/documents/9-s219783-ac-south-coast-air-quality-mgt-dist-041315.pdf>. Accessed May 2020.
16. Office of Environmental Health Hazard Assessment (OEHHA). 2015. Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments. Available at: <https://oehha.ca.gov/media/downloads/crnrr/2015guidancemanual.pdf>. Accessed May 2020.
17. Zhu, Y., W. C. Hinds, S. Kim, and S. Shen. 2002. Study of Ultrafine Particles Near a Major Highway with Heavy-duty Diesel Traffic. *Atmospheric Environment* 36:4323–4335.

Biological Resources

18. California High-Speed Rail Authority and Federal Railroad Administration (CHSRA)
19. California Department of Fish and Game (CDFG; now California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency.
20. California High-Speed Rail Authority and Federal Railroad Administration. 2012. California High-Speed Train: Merced to Fresno Section Draft Project Environmental Impact Report/Environmental Impact Statement and Draft Section 4(f) Statement. Sacramento, California.
21. California Invasive Plant Council. 2020. The Cal-IPC Inventory. Available: <https://www.cal-ipc.org/plants/inventory/>. Accessed April-May 2020.
22. USFWS 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. <https://www.fws.gov/sacramento/es/Recovery-Planning/Vernal-Pool/>
23. _____. 2019. California Sensitive Natural Community List. (last updated: November 8, 2019). Biogeographic Data Branch. Available online at: (<https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities>). Accessed in April 2020.
24. California Invasive Plant Council. 2020. The Cal-IPC Inventory. Available online at: (<https://www.calipc.org/plants/inventory/>). Accessed in May 2020.
25. California High-Speed Rail Authority and Federal Railroad Administration (CHSRA).
26. California High-Speed Rail Authority and Federal Railroad Administration. 2012. California High-Speed Train: Merced to Fresno Section Draft Project Environmental Impact Report/Environmental Impact Statement and Draft Section 4(f) Statement. Sacramento, California.
27. California Native Plant Society. 2020a. Inventory of Rare and Endangered Plants of California. Available online at: (<http://rareplants.cnps.org/>). Accessed in April 2020. California Native Plant Society, Sacramento, CA

28. _____. 2020b. A Manual of California Vegetation, Online Edition. Available online at: (<http://www.cnps.org/cnps/vegetation/>). Accessed in May 2020. California Native Plant Society, Sacramento, CA
29. CDFW. See California Department of Fish and Wildlife.
30. CNPS. See California Native Plant Society.
31. Environmental Laboratory. 1987. U.S. Army Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Corps of Engineers, Waterways Experiment Station.
32. _____. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Technical Report ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Corps of Engineers, Engineer Research and Development Center.
33. Sawyer, J.O. and T.K. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, CA
34. SHTAC. See Swainson's Hawk Technical Advisory Committee
35. Swainson's Hawk Technical Advisory Committee (SHTAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys for the California Central Valley.
36. U.S. Fish and Wildlife Service. 2003. Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander. Region 8, U.S. Fish and Wildlife Service, Sacramento, California.
37. _____. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Region 1, U.S. Fish and Wildlife Service, Portland, Oregon.
38. _____. 2020. Information for Planning and Conservation. Available online at: (<http://ecos.fws.gov/ipac/>). Accessed April 2020.
39. USFWS. See U.S. Fish and Wildlife Service.
40. U.S. Geological Survey. 2018. The National Map. (Last Modified: 22-Oct-18). An online mapping tool created by the USGS with collaboration from other Federal, State, and local partners to improve and deliver topographic information for the Nation. Available online at: (<https://www.usgs.gov/core-science-systems/national-geospatial-program/national-map>). Accessed April-May 2020.
41. USGS. See U.S. Geological Survey.

Cultural Resources

42. AECOM. 2012a. *Merced to Fresno Section Historic Property Survey Report, California High-Speed Train Project EIR/EIS*. Prepared for California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). Sacramento, CA, and Washington, DC. August 2012.
43. AECOM. 2012b. *Merced to Fresno Section Historic Architectural Survey Report, California High-Speed Train Project EIR/EIS*. Prepared for California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). Sacramento, CA, and Washington, DC. August 2012.

44. AECOM. 2012c. *Merced to Fresno Section Archaeological Survey Report, California High-Speed Train Project EIR/EIS*. Prepared for California High-Speed Rail Authority and Federal Railroad Administration (Authority and FRA). Sacramento, CA, and Washington, DC. August 2012.
45. CRM Tech. 2009. DPR 523 forms for P-20-002662, Burlington Northern Santa Fe (BNSF, formerly Atchison, Topeka, and Santa Fe) Railway. Prepared for *Archaeological Survey Report/Historical Resource Evaluation Report: Gregg Double Track Project, Burlington Northern Santa Fe Railway, Stockton Subdivision, Northern California Division, Gregg-Trigio, Madera County, California, MP 1008.9 to 1013.9*. On file at SSJVIC.
46. City of Madera. 2009. *General Plan Update Draft EIR*. State Clearing House Number 2007121153. Available: <https://www.madera.gov/wp-content/uploads/2018/01/Draft-EIR.pdf>. Accessed April 1, 2020.
47. Dillon, Brian D.
48. 2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga*, edited by William J. Wallace and Francis A. Riddell. Contributions of the University of California Archaeological Research Facility, No. 60. Berkeley, California.
49. Fenenga, Franklin F.
50. 1973 *Archaeological Work in the Hidden Valley Reservoir Area, Madera County, California*. San Francisco: Report to the National Park Service.
51. Fredrickson, David A.
52. 1974 Cultural Diversity in Early California: A View from the North Coast Ranges. *Journal of California Anthropology*. HDR Inc. 2016. DPR 523 forms for P-20-002662, Burlington Northern Santa Fe (BNSF) Railroad, formerly Atchison, Topeka, and Santa Fe (AT &SF), and the San Francisco & San Joaquin Valley (SF & SJV). Prepared for *Cultural Resources Report: Avenue 26 and Road 29 Rehabilitation Project, CA FLAO MAD 26(1), Madera County, California*. Prepared for the Federal Highway Administration, Central Federal Lands Highway Division. On file at SSJVIC.
53. Heizer, Robert F.
54. 1938 A Folsom-type Point from the Sacramento Valley. *Southwest Museum Masterkey*.
55. Historicaerials.com. 2020. "Madera, California." Available: <https://www.historicaerials.com/viewer>. Accessed April 1, 2020.
56. Kroeber, Alfred J.
57. 1925 *Handbook of the Indians of California*. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution. Government Printing Office, Washington, D.C. Reprinted 1976 by Dover Publications, Inc., New York.
58. Latta, Frank F.
59. 1977 *Handbook of the Yokuts Indians*. 2nd edition. Revised. Bear State Books, Santa Cruz, California.
60. Matthews, Robert A., and John L. Burnett
61. 1975 Geologic Map of California, Fresno Sheet. Second Edition. Army Map Service, Corps of Engineers, U.S. Army, Washington D.C.

62. Meyer, Jack, Jeffrey S. Rosenthal, and D. Craig Young
63. 2010 *A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways EA 06-0A7408 TEA Grant*. Prepared by Far Western Anthropological Research Group, Inc., Davis, for California Department of Transportation, District 6, Fresno.
64. Moratto, Michael J.
65. 1984 *California Archaeology*. Academic Press, San Diego, California.
66. Natural Resources Conservation Service (NRCS)
67. 2020 United States Department of Agriculture. Web Soil Survey.
Available: <https://websoilsurvey.sc.egov.usda.gov/>. Accessed: March 26, 2020.
68. Olsen, William H.
69. 1970 Synthesis of the Archaeology of the Western San Joaquin Valley. Paper presented at the 1970 Annual Meeting of the Society for California Archaeology, Los Angeles.
70. Olsen William H., and Louis A. Payen
71. 1968 *Archaeology of the Little Panoche Reservoir, Fresno County, California*. Archaeological Reports 11. California Department of Parks and Recreation, Sacramento.
72. 1969 *Archaeology of the Grayson Site, Merced County, California*. Archaeological Reports 12. California Department of Parks and Recreation, Sacramento.
73. Peak Ann S., and Tony F. Weber
74. 1978 Archaeological Investigations at the Wolfsen Mount, CA-MER-215, EIR for the City of Newman, CA. Merced California.
75. Riddell Francis A., and William H. Olsen
76. 1969 An Early Man Site in the San Joaquin Valley. *American Antiquity*.
77. Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton
78. 2007 The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Lanham, Maryland.
79. Treganza, Adan E.
80. 1960 Archaeological Investigations in the San Luis Reservoir Area, Merced County, California. Report to the California Department of Parks and Recreation, Sacramento.
81. U.S. Geological Survey (USGS)
82. 1965 Gregg, California. 7.5-minute topographic quadrangle. Available:
<http://historicalmaps.arcgis.com/usgs/>. Accessed: May 1, 2020.
83. 1978 Northern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 462-472. Handbook of the North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Energy

84. California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. Available at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 2020.

85. California Department of Transportation (Caltrans). 2018. California State Rail Plan. Available at: <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>. Accessed May 2020.
86. Department of Energy (DOE). 2019. LED Lighting. Available at <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>. Accessed May 2020.
87. San Joaquin Council of Governments. 2014. Adopted 2014 Regional transportation Plan/Sustainable Communities Strategy. Available at: <https://www.sjcog.org/376/Adopted-2014-RTPSCS>. Accessed May 2020.
88. U.S. Department of Energy. 2018. Alternative Fuels Data Center: Mass Transit. Available: https://afdc.energy.gov/conserve/mass_transit.html. Accessed May 2020.
89. U.S. Energy Information Administration (EIA). 2016. Carbon Dioxide Emissions Coefficients. Available: https://www.eia.gov/environment/emissions/co2_vol_mass.php. Accessed May 2020.

Geology, Soils, Seismicity & Paleontological Resources

90. California Department of Conservation, California Geological Survey, The California Earthquake Hazards Zone Application ("EQ Zapp"), <https://maps.conservation.ca.gov/cgs/EQZApp/app/>, accessed April 7, 2020
91. Madera County Local Hazard Mitigation Plan Update, October 2017
92. California High-Speed Train Project EIR/EIS Geology, Soils, and Seismicity Technical Report Merced to Fresno Section
93. U.S. Department of Agriculture, Natural Resources, Conservation Service, Custom Soil Resource Report for Madera Area, California
94. California High-Speed Train Project EIR/EIS Geology, Soils, and Seismicity Technical Report Merced to Fresno Section
95. U.S. Department of Agriculture, Natural Resources, Conservation Service, Web Soil Survey 2.0, National Cooperative Soil Survey, Soil Map-Madera County, California, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed April 8, 2020
96. Official Series Description for Soils in Madera County, https://soilseries.sc.egov.usda.gov/OSD_Docs/M/MADERA.html, Accessed May 13, 2020.

Greenhouse Gases

97. California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. Available at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 2020.
98. Department of Energy (DOE). 2019. LED Lighting. Available at <https://www.energy.gov/energysaver/save-electricity-and-fuel/lighting-choices-save-you-money/led-lighting>. Accessed May 2020.

99. Pacific Gas & Electric Company. 2019. Corporate Responsibility and Sustainability Report. Available at:
http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf. Accessed May 2020.
100. Placer County Air Pollution Control District (PCAPCD). 2017. CEQA Handbook. Available at:
<https://www.placer.ca.gov/1801/CEQA-Handbook>. Accessed May 2020.
101. San Joaquin Council of Governments. 2014. Adopted 2014 Regional transportation Plan/Sustainable Communities Strategy. Available at: <https://www.sjcog.org/376/Adopted-2014-RTPSCS>. Accessed May 2020.
102. San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009. Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. Available at:
<http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf>. Accessed May 2020.
103. Sacramento Metropolitan Air Quality Management District (SMAQMD). 2020. Guide to Air Quality Assessment in Sacramento County: Greenhouse Gas Emissions. Available at:
<http://www.airquality.org/LandUseTransportation/Documents/Ch6GHG4-25-2020.pdf>. Accessed May 2020.
104. United States Department of Transportation (USDOT) 2010. Transit's Role in Environmental Sustainability. Available at: <https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/transit-environmental-sustainability/transit-role>. Accessed May 2020.

Hazards & Hazardous Materials

105. AECOM Technical Services (AECOM). April 2020. Technical Memorandum: Hazards and Hazardous Materials – Relocated Station Relocation Site.
106. California Department of Forestry and Fire Protection (CALFIRE). 2017. Draft Fire Hazard Severity Zones in Local Responsibility Area Map, Madera County. September.
107. California Public Utilities Commission (CPUC). 2015. General Order No. 176. Rules for Overhead 25kV Railroad Electrification Systems for a High-Speed Rail System. Adopted March 26, 2015.
108. California Department of Water Resources (DWR). 2020. Groundwater Information Center: Interactive Map Application. Depth Below Ground Surface, Spring 2011 through Fall 2018. Available: <https://gis.water.ca.gov/app/gicima/>. Accessed: April 14, 2020.
109. Federal Aviation Administration (FAA). 2020. Airport Facilities Data download for Madera County. Available online at:
https://www.faa.gov/airports/airport_safety/airportdata_5010/menu/. Accessed April 14, 2020.
110. Madera County. 2010. Madera County Operational Area Emergency Operations Plan. Revised January 2010.
111. TRC Solutions (TRC). 2015. Second Quarter 2015 Monitoring Report. Former MacGillis and Gibbs Pole Treating Facility (Trigo Site), Madera, California. July 21.

Hydrology & Water Resources

112. TRC Solutions (TRC). 2015. Second Quarter 2015 Monitoring Report. Former MacGillis and Gibbs Pole Treating Facility (Trigo Site), Madera, California. July 21.
113. Minnesota Dept of Transportation. Minnesota Field Guide for Winter Bridge Construction. <https://www.dot.state.mn.us/environment/erosion/pdf/field-guide-bridge-construction.pdf>
114. U.S. Fish and Wildlife Service. Recommended best Management practices for Bridges. <https://www.fws.gov/daphne/section7/BMPs-bridges.pdf>
115. Madera County. 2015. Madera County General Plan Policy Document. Adopted 1995, as amended 2015. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-269>. Accessed May 6, 2020.
116. Madera GSP. 2020 Madera Subbasin_Sustainability Management Plan Final Report. Available:
117. Madera County 2017 County of Madera Storm Water Resource Plan. Available (https://www.maderacountywater.com/wp-content/uploads/2018/06/FINAL_MaderaSWRP_171228.pdf)
118. California Department of Water Resources (DWR). 2020. Groundwater Information Center: Interactive Map Application. Depth Below Ground Surface, Spring 2011 through Fall 2018. Available: <https://gis.water.ca.gov/app/gicima/>. Accessed: April 14, 2020.

Land Use & Development

119. Madera County. 1995 (July). Madera State Center Community College Specific Plan. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-120>. Accessed May 4, 2020.
120. Madera County. 2015. Madera County General Plan Policy Document. Adopted 1995, as amended 2015. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-269>. Accessed May 6, 2020.
121. Madera County. 2020. Madera County Municipal Code. Available: https://library.municode.com/ca/madera_county/codes/code_of_ordinances?nodeId=TIT18ZO. Accessed May 6, 2020.
122. Madera County Transportation Commission. 2018 (September). 2018 Regional Transportation Plan/Sustainable Communities Strategy. Available: <https://www.maderactc.org/transportation/page/your-madera-2042-rtpscs>. Accessed May 12, 2020.

Mineral Resources

123. California Department of Conservation, Division of Mines and Geology Update of Mineral Land Classification of Aggregate Materials in the Fresno Production-Consumption Region, 1999

124. California Department of Conservation, Division of Mines and Geology Update of Mineral Land Classification of Aggregate Materials in the Fresno Production-Consumption Region, 1999

Noise & Vibration

125. Madera County. 1995. General Plan Noise Element.
126. Federal Highway Administration (FHWA) and U.S. Department of Transportation (DOT). 2006 (January). Roadway Construction Noise Model User's Guide. FHWA-HEP-05-054. Washington, DC.
127. Federal Transit Administration (FTA). 2018 (September). *Transit Noise and Vibration Impact Assessment*. FTA Report No. 0123.

Population & Housing

128. Madera County. 1995 (July). Madera State Center Community College Specific Plan. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-120>. Accessed May 4, 2020.
129. Madera County. 2015a. Madera County General Plan Policy Document. Adopted 1995, as amended 2015. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-269>. Accessed May 6, 2020.
130. Madera County. 2015b. Madera County 2014-2016 Housing Element Update. Available: <https://www.maderacounty.com/government/community-economic-development-department/divisions/planning-division/planning-forms-and-documents/-folder-269>. Accessed May 6, 2020.
131. Madera County 2015c. Riverstone Development Tentative Subdivision Map. Available: <https://www.maderacounty.com/Home/ShowDocument?id=3342>. Accessed May 6, 2020.
132. Madera County. 2020. Madera County Municipal Code. Available: https://library.municode.com/ca/madera_county/codes/code_of_ordinances?nodeId=TIT18ZO. Accessed May 6, 2020.

Public Services & Recreation

133. The California High-Speed Rail Authority, (August 2012). California High-Speed Train Project EIR/EIS, Merced to Fresno Section.
134. Ibid
135. Central California Emergency Medical Services Agency, (August 2012). Regional Emergency Medical Services Update. Retrieved from: <https://emsa.ca.gov/wp-content/uploads/sites/71/2017/09/2011-12-CentralCA-EMSPlan.pdf>
136. The California High-Speed Rail Authority, (August 2012). California High-Speed Train Project EIR/EIS, Merced to Fresno Section.

137. Personal Communication with Captain Douglas Calcagno, Amtrak Police, October 12, 2020.

Transportation

138. California Department of Transportation (Caltrans). California State Rail Plan; Connecting California. 2018. Available online: <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>. Accessed April 1, 2020.
139. California High-Speed Rail Authority. 2018 Business Plan. June 1, 2018. Available online: https://www.hsr.ca.gov/docs/about/business_plans/2018_BusinessPlan.pdf. Accessed April 1, 2020.
140. City of Madera. City of Madera Transit System. May 1, 2019. Available online: <https://www.madera.gov/wp-content/uploads/2019/06/2019-05-06-MAX-Brochure-Color.pdf>. Accessed March 25, 2020.
141. ——. City of Madera Climate Action Plan. Adopted September 2, 2015. Available online: https://www.madera.gov/wp-content/uploads/2017/08/Final-Madera-CAP_September-2015.pdf. Accessed March 25, 2020.
142. ——. City of Madera General Plan. October 7, 2009. Available online: <https://www.madera.gov/wp-content/uploads/2016/05/COM-General-Plan.pdf>. Accessed March 25, 2020.
143. County of Madera. Madera County General Plan Policy Document. Adopted October 24, 1995. Available online: <https://www.maderacounty.com/Home/ShowDocument?id=2850>. Accessed March 26, 2020.
144. Governor's Office of Planning and Research. Technical Advisory on Evaluating Transportation Impacts in CEQA. December 2018. Available online: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed April 1, 2020.
145. Madera County Planning Department. Madera State Center Community College Specific Plan. July 19, 1995. Available online: <https://www.maderacounty.com/Home/ShowDocument?id=658>. Accessed March 26, 2020.
146. Madera County Transportation Commission. 2020 Regional Transportation Improvement Program; Fiscal Years 2020/21 through 2024/25. Approved November 20, 2019. Available online: https://www.maderactc.org/sites/default/files/fileattachments/programming/page/2501/2020_rtip_r.pdf. Accessed March 27, 2020.
147. ——. 2018 Regional Transportation Plan/Sustainable Communities Strategy; Amendment No.1. Adopted March 20, 2019. Available online: https://www.maderactc.org/sites/default/files/fileattachments/transportation/page/2351/mctc_2018_rtp-scs_final_amendment_1_r.pdf. Accessed March 27, 2020.
148. ——. Madera Active Transportation Plan. Adopted May 23, 2018.
149. ——. Madera County Short-Range Transit Development Plan; FY 2017/18 – 2021/22. March 2017. Available online: https://www.maderactc.org/sites/default/files/fileattachments/social_services_transportation_advisory_council_sstac/page/2151/short_range_transit_plan_r.pdf. Accessed March 27, 2020.

150. ——. 2015 Madera County Coordinated Public Transit Human Services Transportation Plan. July 22, 2015. Available online: https://www.maderactc.org/sites/default/files/fileattachments/social_services_transportation_advisory_council_sstac/page/2111/human_services_plan_r.pdf. Accessed March 27, 2020.
151. San Joaquin Joint Powers Authority. San Joaquin Joint Powers Authority 2019 Business Plan Update. 2019. Available online: <https://sjjpa.com/wp-content/uploads/Final-2019-SJJPA-Bus-Plan-Update-1.pdf>. Accessed April 1, 2020.
152. San Joaquin Valley Regional Policy Council. San Joaquin Valley Blueprint Roadmap; Guidance Framework. August 31, 2011. Available online: <https://www.calcog.org/clientuploads/Resources/Reg%20Govern/SJV-GuidanceFramework.pdf>. Accessed March 27, 2020.

Tribal Cultural Resources

153. Beck, Karin G. 2020. Cultural Resources Technical Memorandum to Inform an Initial Study for the Madera Relocated Station Project, Madera, Madera County, CA. AECOM, Oakland, California.
154. Dick-Bissonette, Linda. 1994. City of Fresno Grantland Avenue Sewer Trunk and Herndon Expressway Cultural Resources Assessment. Prepared for City of Fresno, Development Department, Fresno, California.
155. Matthews, Robert A., and John L. Burnett
156. 1975 Geologic Map of California, Fresno Sheet. Second Edition. Army Map Service, Corps of Engineers, U.S. Army, Washington D.C.
157. Meyer, Jack, Jeffrey S. Rosenthal, and D. Craig Young
158. 2010 A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways EA 06-0A7408 TEA Grant. Prepared by Far Western Anthropological Research Group, Inc., Davis, for California Department of Transportation, District 6, Fresno.
159. Natural Resources Conservation Service (NRCS)
160. 2020 United States Department of Agriculture. Web Soil Survey. Available: <https://websoilsurvey.sc.egov.usda.gov/>. Accessed: March 26, 2020.
161. Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton
162. 2007 The Central Valley: A View from the Catbird's Seat. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Lanham, Maryland.
163. U.S. Geological Survey (USGS)
164. 1965 Gregg, California. 7.5-minute topographic quadrangle. Available: <http://historicalmaps.arcgis.com/usgs/>. Accessed: May 1, 2020.
165. Wallace, 1978 Northern Valley Yokuts. In California, edited by Robert F. Heizer, pp. 462-472. Handbook of the North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Utilities & Service Systems

- 166. 2019 SJJPA Business Plan Update
- 167. Madera Irrigation District, <https://www.madera-id.org/public-information/mid-groundwater-sustainability-agency/> (Accessed April 17, 2020)
- 168. County of Madera Local Agency Management Plan for Onsite Wastewater Treatment Systems
- 169. City of Madera General Plan, October 2017

Wildland Fire

- 170. Madera County Local Hazard Mitigation Plan 2018
- 171. Madera County Emergency Operations Plan 2010