California Aqueduct Bridge Rehabilitation and Seismic Retrofit

In Kern County on State Route 166 (Maricopa Highway)
2.6 miles east of Old River Road
06-KER-166-PM 16.6/18.2
EA 06-0S050, Project ID 0615000047
State Clearinghouse Number 2018071022

Initial Study with Mitigated Negative Declaration/ Environmental Assessment and Final Section 4(f) Evaluation with Finding of No Significant Impact

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code 327 and the Memorandum of Understanding dated May 27, 2022, and executed by the Federal Highway Administration and Caltrans.

August 2022

General Information About This Document

The following text has been added since the draft environmental document was circulated. The Initial Study/Environmental Assessment with Section 4(f) Evaluation circulated to the public for 45 days between July 26, 2021, and September 9, 2021. Comments received during this period are included in Section 4.2. Elsewhere, language has been added throughout the document to indicate where a change has been made since the circulation of the draft environmental document. Minor editorial changes and clarifications have not been so indicated.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Jennifer H. Taylor, District 6 Environmental, 2015 East Shields Avenue, Suite 100, Fresno, California 93726; 559-287-9844 (Voice), or use the California Relay Service 1-800-735-2929 (Teletype to Voice), 1-800-735-2922 (Voice to Teletype), 1-800-855-3000 (Spanish Teletype to Voice and Voice to Teletype), 1-800-854-7784 (Spanish and English Speech-to-Speech), or 711.

State Clearinghouse Number 2018071022
06-KER-166-PM 16.6/18.2
06-0S050 and Project ID 0615000047

Rehabilitation and Seismic Retrofit of the California Aqueduct Bridge Number 50-0323 on State Route 166 from post miles 16.6 to 18.2 in Kern County

INITIAL STUDY with Mitigated Negative Declaration/ ENVIRONMENTAL ASSESSMENT and Final Section 4(f) Evaluation with Finding of No Significant Impact

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S. Code 4332(2)(C), and 49 U.S. Code 303

THE STATE OF CALIFORNIA
Department of Transportation
and
Responsible Agencies: California Transportation Commission

Jennifer H Taylor

Jennifer H. Taylor
Environmental Office Chief, District 6
California Department of Transportation
CEQA and NEPA Lead Agency

08/22/2022

Date

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CALIFORNIA DEPARTMENT OF TRANSPORTATION FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

California Aqueduct Bridge Rehabilitation and Seismic Retrofit

The California Department of Transportation (Caltrans) has determined that the Rehabilitation and Seismic Retrofit of the California Aqueduct Bridge Number 50-0323 will have no significant impact on the human environment. This Finding of No Significant Impact is based on the attached Environmental Assessment and Section 4(f) Evaluation, which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached Environmental Assessment and Section 4(f) Evaluation.

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code 327 and the Memorandum of Understanding dated May 27, 2022 and executed by the Federal Highway Administration and Caltrans.

Jennifer H Taylor

Jennifer H. Taylor
Environmental Office Chief, District 6
California Department of Transportation
CEQA and NEPA Lead Agency

08/22/2022

Date

State Clearinghouse Number: 2018071022

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323 on State Route 166. The project is in Kern County east of Maricopa, 2.6 miles east of Old River Road and 5 miles west of Interstate 5. State Route 166 at the bridge location is a conventional two-lane highway with two 12-foot lanes and 8-foot shoulders. The bridge was built in 1968 and is about 400 feet long.

Determination

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons.

The project would have no effect on aesthetics, farmlands, forest resources, air quality, hydrology and floodplain, land use and planning, mineral resources, noise, population and housing, public services, recreation, wildfires, tribal cultural resources, paleontological resources, energy, and geology and soils.

The project would have less than significant effects on biological resources, hazards and hazardous waste, water quality, greenhouse gas emissions, transportation and traffic, and utilities and service systems.

The project would have no significant adverse effects on cultural resources because the following mitigation measure would reduce potential effects to less than significant:

- Caltrans will complete a Historic American Buildings Survey and a Historic American Engineering Record that will describe and convey the importance of the bridge as well as the role that it plays in the larger aqueduct system.

Jennifer H Taylor

Jennifer H. Taylor
Environmental Office Chief, District 6
California Department of Transportation

08/22/2022

Date

Table of Contents

California Aqueduct Bridge Rehabilitation and Seismic Retrofit ..... a
Chapter 1 Proposed Project 1
1.1 Introduction 1
1.2 Purpose and Need 2
1.2.1 Purpose 2
1.2.2 Need 2
1.2.3 Independent Utility and Logical Termini 3
1.3 Project Description 3
1.4 Project Background and Consultative Determinations 6
1.4.1 Consultation with the Department of Water Resources 6
1.4.2 Evaluation of Remaining Alternatives 7
1.4.3 Consultation with the State Historic Preservation Officer 8
1.4.4 The Value Analysis 8
1.4.5 Further Consultation with the Department of Water Resources and the State Historic Preservation Officer After the Public Circulation of the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation 9
1.4.6 Reevaluation of Alternatives 1, 1A, 6, and 7 10
1.5 Project Alternatives 11
1.5.1 Build Alternatives 11
1.5.2 No-Build (No-Action) Alternative 12
1.6 Identification of a Preferred Alternative 12
1.7 Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation 13
1.7.1 Alternatives 1, 1A, 6, and 7 13
1.7.2 Alternatives 2, 3, 4, and 5 14
1.7.3 Value Analysis Alternatives 16
1.8 Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation 18
1.8.1 Eliminated Alternatives 19
1.9 Permits and Approvals Needed 24
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures 27
2.1 Human Environment 30
2.1.1 Farmland 30
2.1.2 Utilities and Emergency Services 31
2.1.3 Cultural Resources 33
2.2 Physical Environment 38
2.2.1 Water Quality and Storm Water Runoff 38
2.2.2 Hazardous Waste and Materials 45
2.3 Biological Environment 49
2.3.1 Wetlands and Other Waters 49
2.3.2 Animal Species 52
2.3.3 Threatened and Endangered Species 56

2.4 Construction Impacts....65
Chapter 3 EQA Evaluation....69
3.1 Determining Significance Under CEQA....69
3.2 CEQA Environmental Checklist....70
3.2.1 Aesthetics....70
3.2.2 Agriculture and Forest Resources....71
3.2.3 Air Quality....73
3.2.4 Biological Resources....73
3.2.5 Cultural Resources....75
3.2.6 Energy....78
3.2.7 Geology and Soils....78
3.2.8 Greenhouse Gas Emissions....80
3.2.9 Hazards and Hazardous Materials....81
3.2.10 Hydrology and Water Quality....82
3.2.11 Land Use and Planning....83
3.2.12 Mineral Resources....84
3.2.13 Noise....84
3.2.14 Population and Housing....85
3.2.15 Public Services....85
3.2.16 Recreation....86
3.2.17 Transportation....86
3.2.18 Tribal Cultural Resources....87
3.2.19 Utilities and Service Systems....88
3.2.20 Wildfire....89
3.2.21 Mandatory Findings of Significance....90
3.3 Climate Change....91
3.3.1 Regulatory Setting....91
3.3.2 Environmental Setting....95
3.3.3 Project Analysis....99
3.3.4 Greenhouse Gas Reduction Strategies....101
3.3.5 Adaptation....105
Chapter 4 Comments and Coordination....111
4.1 Agency Coordination....111
4.1.1 Office of Historic Preservation....111
4.1.2 U.S. Fish and Wildlife Service....112
4.1.3 Department of Water Resources....113
4.1.4 Wheeler Ridge-Maricopa Water Storage District....114
4.1.5 Emergency Services....114
4.1.6 Maricopa School District....115
4.1.7 Coordination with Native American Groups....115
4.1.8 U.S. Department of the Interior....117
4.2 Comments....117
4.2.1 Public Outreach and Notification....117
4.2.2 Comments Received....117
Chapter 5 List of Preparers....137
Chapter 6 Distribution List....141
Appendix A Section 4(f) Evaluation....143

Introduction 143
Description of Proposed Project 144
Section 4(f) Properties 163
Use of the Section 4(f) Properties 163
Avoidance Alternatives Analysis 164
Measures to Minimize Harm to Section 4(f) Resources 166
Coordination 168
Appendix B Title VI Policy Statement 172
Appendix C Proposed Right-of-Way Acquisition 174
Appendix D Natural Resources Conservation Service Farmland Impact Rating 178
Appendix E State Office of Historic Preservation Letter of Concurrence 180
Appendix F Finding of Adverse Effect 184
Appendix G Avoidance, Minimization and/or Mitigation Summary 192
Appendix H Images of Bridge 50-0323 200
Appendix I Memorandum of Agreement 204
List of Technical Studies 218

List of Figures

Figure 1-1 Project Vicinity Map 5
Figure 1-2 Project Location Map 6
Figure 1-3 Visual Simulation of Alternative 8 22
Figure 1-4 Visual Simulation of South Alignment Alternative 24
Figure 3-1 U.S. 2019 Greenhouse Gas Emissions (Source: U.S. EPA 2021c)...97
Figure 3-2 California 2018 Greenhouse Gas Emissions (Source: ARB 2020b) ..98
Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000 (Source: ARB 2020b).....98
Figure 3-4 California Climate Strategy 102
Figure C-1 Alternative 8 Proposed Right-of-Way Acquisition.....174
Figure C-2 South Alignment Alternative Proposed Right-of-Way Acquisition....175
Figure C-3 South Alignment Alternative Proposed Right-of-Way Acquisition, Updated for the Final Environmental Document.....176

List of Tables

Table 2.2 Traffic Delay in Minutes Caused by Alternative 8 Detour 66
Table 2.3 Construction Equipment Noise.....68
Table A.1 Comparison of Rejected Alternatives Against Rejection Criteria 161

Chapter 1 Proposed Project

1.1 Introduction

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 U.S. Code 327 for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, Caltrans entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (NEPA Assignment Memorandum of Understanding) with the Federal Highway Administration. The NEPA Assignment Memorandum of Understanding became effective October 1, 2012, and was renewed on May 27, 2022, for a term of 10 years. In summary, Caltrans continues to assume Federal Highway Administration responsibilities under the National Environmental Policy Act (known as NEPA) and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, the Federal Highway Administration assigned, and Caltrans assumed all of the U.S. Department of Transportation Secretary’s responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance projects off the State Highway System within the State of California, except for certain categorical exclusions that the Federal Highway Administration assigned to Caltrans under the 23 U.S. Code 326 CE Assignment Memorandum of Understanding, projects excluded by definition, and specific project exclusions.

Caltrans, as assigned by the Federal Highway Administration, is the lead agency under NEPA, and Caltrans is the lead agency under the California Environmental Quality Act (known as CEQA).

The following two paragraphs have been added since the draft environmental document was circulated to the public.

The proposed project, as described in the draft environmental document, would have removed California Aqueduct Bridge Number 50-0323 and replaced the structure with a new bridge. Following the public circulation of the draft environmental document, a series of coordination efforts regarding the project design occurred between Caltrans and the Department of Water Resources. It was ultimately determined that the option to work within the California Aqueduct channel is feasible, and the Department of Water Resources is willing to coordinate dewatering efforts during construction. Prior to the circulation of the draft environmental document, the Department of Water Resources communicated that they would not allow any work to be done within the aqueduct channel, and the aqueduct liner was to remain

untouched. However, this new consultative determination by the Department of Water Resources has allowed Caltrans to reconsider the original project strategy of seismically retrofitting and rehabilitating the existing bridge instead of replacing it.

Throughout this document, the title, purpose, and description of the project have been revised to fit the new strategy. Further information regarding coordination between Caltrans and the Department of Water Resources can be found in Section 1.4, Project Background and Consultative Determinations. Information regarding the project alternatives that were proposed in the draft environmental document can be found in Section 1.8, Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

Caltrans proposes to seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323 from post miles 16.6 to 18.2 on State Route 166 in Kern County. The existing bridge is 2.6 miles east of Old River Road and 5 miles west of Interstate 5. The bridge was built in 1968 and is about 400 feet long. State Route 166 at the bridge location is a conventional two-lane highway with two 12-foot lanes and 8-foot shoulders. Figures 1-1 and 1-2 show maps of the project location and project vicinity.

The project is included in the 2018 Regional Transportation Plan/Sustainable Communities Strategy for Kern Council of Governments and in the 2018 Regional Adoption of the 2019 Federal Transportation Improvement Program. The project is also programmed in the 2018 State Highway Operation and Protection Program Bridge Rehabilitation and Replacement (20.XX.201.110) program with funding in the 2021/2022 fiscal year. The project is scheduled to begin construction in 2023.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of this project is to seismically retrofit and rehabilitate the existing 50-year-old bridge to meet current Caltrans standards and be structurally sound.

1.2.2 Need

The existing bridge is deficient for the following reasons:

- The bridge piers are settling into the ground, resulting in cracks on the bottom surface of the existing bridge structure.
- The bridge deck is sagging and rotating, indicating that the foundation is unstable, resulting in insufficient structural integrity.

- Because of the bridge's insufficient structural integrity, the bridge may continue to deteriorate and become structurally unsound.

Images of the bridge in its existing condition are shown in Appendix I.

1.2.3 Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations 771.111 [f]) require that (1) projects have logical limits (this is known as logical termini) and be long enough to address environmental matters on a broad scope; (2) projects are usable and a reasonable use of funds even if no additional transportation improvements in the area are made (this is known as independent utility); and (3) approval of a project does not restrict consideration of alternatives for other reasonable foreseeable transportation improvements. As discussed below, the project complies with these requirements.

The project would seismically retrofit and rehabilitate a specific bridge, Bridge Number 50-0323, which crosses the California Aqueduct on State Route 166. The project would begin and end at the points required for the bridge replacement. Therefore, the project has logical limits.

Another important consideration is whether the project is of sufficient length to address matters on a broad scope. The study corridor extends beyond the proposed construction limits to ensure comprehensive environmental analysis for the project.

The retrofitted and rehabilitated bridge would provide an effective means for crossing the California Aqueduct along State Route 166 even if no additional transportation improvements are made. There are no other projects that are needed or are dependent upon the completion of this project.

The approval of the project does not restrict the consideration of alternatives for reasonably foreseeable transportation improvements. The 2018 Regional Transportation Plan/Sustainable Communities Strategy for Kern Council of Governments identifies several other transportation improvements that are being developed independently of this project. The project would not conflict with or constrain the design of any of these projects.

1.3 Project Description

The following text has been revised since the draft environmental document was circulated.

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project, while avoiding or

minimizing environmental impacts. There is one build alternative—Alternative 1A—and a no-build alternative.

The project is on State Route 166 in Kern County east of Maricopa, 2.6 miles east of Old River Road and 5 miles west of Interstate 5 (see Figures 1-1 and 1-2). Within the project limits, State Route 166 at the bridge location is a conventional two-lane highway with two 12-foot lanes and 8-foot shoulders. The bridge was built in 1968 and is about 400 feet long.

The California Aqueduct (official name “Governor Edmund G. Brown California Aqueduct”) is a system of concrete-lined canals, tunnels, and pipelines conveying water collected from the Sierra Nevada Mountains and valleys of Northern and Central California to Southern California. Over 400 miles long, the aqueduct is the main feature of the California State Water Project. The Department of Water Resources operates and maintains the California Aqueduct.

The purpose of the project is to seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323.

The existing structure would be left in place, and extra support would be added to the bridge where the structure is currently sagging and cracking. The project would also update the bridge rail to current standards, replace existing bridge dikes, and rehabilitate the existing pavement.

Figure 1-1 Project Vicinity Map

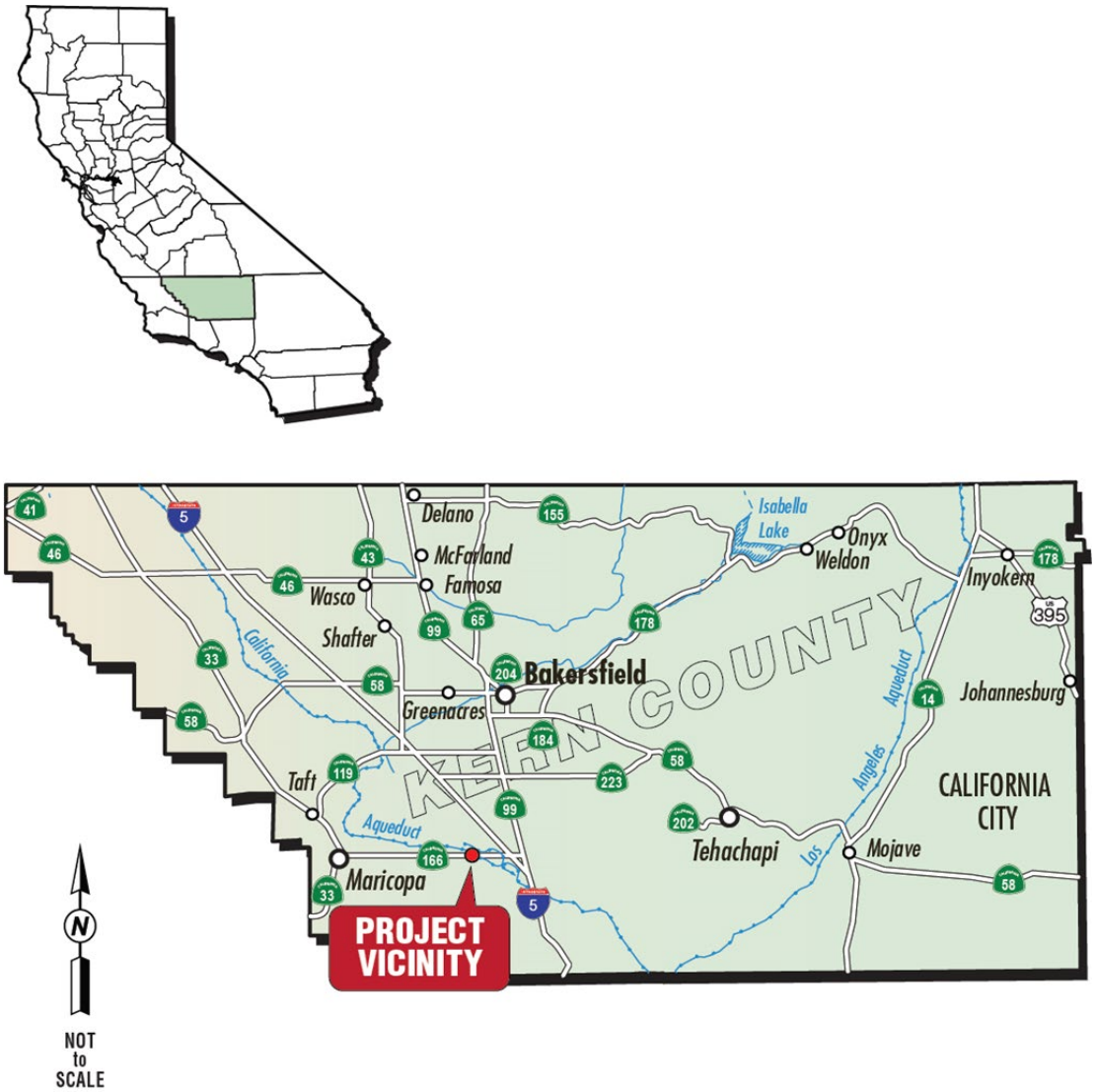
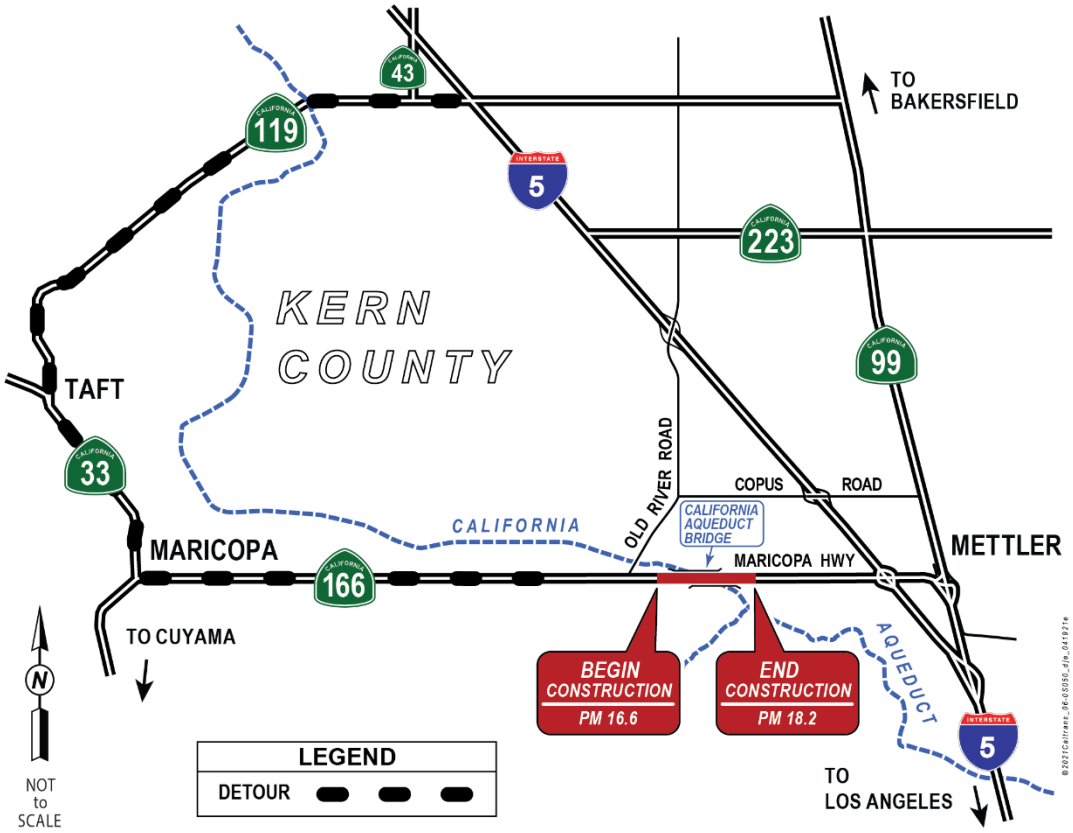


Figure 1-2 Project Location Map



1.4 Project Background and Consultative Determinations

1.4.1 Consultation with the Department of Water Resources

Caltrans initiated construction on a project in early 2013 to address deficiencies at several bridges in Fresno County, Madera County, and Tulare County, including California Aqueduct Bridge Number 50-0323. Caltrans initially proposed to retrofit and rehabilitate the existing bridge by installing cast-in-drilled-hole piles (pouring concrete into deep, newly drilled holes) to stabilize the pile caps from movement.

Upon further review, Caltrans determined that it would not be able to address deficiencies on the existing bridge without a complete seismic retrofit of the bridge. As a result, Caltrans decided to suspend construction on the bridge, remove it from the initial project, and instead design a long-term State Highway Operation and Protection Program project that would address all the bridge's deficiencies.

The project was reinitiated on June 9, 2016, and alternatives were designed to address the deficiencies of the existing bridge. Caltrans then began the environmental analysis process to assess the potential environmental impacts associated with the project's proposed alternatives. Due to potential impacts to the aqueduct, Caltrans consulted with the California Department of Water Resources, which owns and operates the aqueduct.

In October 2017, a meeting was held with Caltrans and the California Department of Water Resources in Sacramento. During this meeting, Caltrans presented the proposed alternatives: Alternatives 1, 1A, 6, and 7. However, because the California Department of Water Resources determined that placing piers in the California Aqueduct would not be feasible without disrupting water flow and aqueduct operations, all alternatives that proposed placing piers in the water were eliminated from further discussion and consideration.

The following text has been revised since the draft environmental document was circulated.

These alternatives are discussed further in Section 1.4.6, Reevaluation of Alternatives 1, 1A, 6, and 7.

Consultation with the Department of Water Resources that occurred after the public circulation of the draft environmental document is discussed in Section 1.4.5, Further Consultation with the Department of Water Resources After the Public Circulation of the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

1.4.2 Evaluation of Remaining Alternatives

Upon the initial elimination of Alternatives 1, 1A, 6, and 7, the project development team evaluated Alternatives 2, 3, 4, 5, and 8 based on the criteria listed below:

1) Does this alternative involve the complete shutdown of flow, significant reduction in hydraulic capacity, or penetrating the aqueduct lining?
2) Does this alternative fail to meet the project's purpose and need?
3) Does this alternative have excessive construction costs?
4) Are there severe operational or safety problems associated with this alternative?
5) Are there unacceptable adverse social, economic, or environmental impacts?
6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

If any alternative triggered a “yes” in response to the criteria, the alternative was rejected. See Table A.1 in Appendix A for a comparison between the rejected alternatives and the criteria that triggered the rejection.

After triggering a “yes” in response to the criteria, Alternatives 2, 3, 4, and 5 were eliminated from further consideration and are discussed further in Section 1.6, Alternatives Considered but Eliminated from Further Discussion.

Alternative 8 did not trigger a “yes” in response to the criteria and was further developed as a build alternative.

1.4.3 Consultation with the State Historic Preservation Officer

In 2018, Caltrans completed an Initial Study with Proposed Negative Declaration under CEQA, an Environmental Assessment under NEPA, and a De Minimis Section 4(f) Evaluation for the project. The draft environmental document was circulated for public and agency review and comment in June 2018. During the circulation period, Caltrans received a comment from the State Historic Preservation Officer disputing Caltrans’ No Adverse Effect determination under Section 106 for impacts to the California Aqueduct, a historic property eligible for the National Register of Historic Properties, and Bridge Number 50-0323, an eligible contributing feature of the California Aqueduct.

The State Historic Preservation Officer determined that the proposed project was visually obtrusive to the existing environment and that the proposed design took away from the look and feel of the California Aqueduct. The State Historic Preservation Officer argued that the proposed bridge would affect the integrity of materials, design, setting, workmanship, and feeling of the aqueduct.

Caltrans accepted the State Historic Preservation Officer’s comments and the Finding of Effect on January 29, 2019. The acceptance of the Finding of Effect required the document level of the previously completed Section 4(f) Evaluation to be elevated from a De Minimis determination to an Individual Section 4(f) Evaluation.

Since the original submittal of the Finding of Effect, Alternative 8 was modified to include additional construction work to lessen impacts to utility lines; a new alternative—the South Alignment Alternative—was also being considered. On March 24, 2021, a revised Finding of Adverse Effect under Section 106 was completed for the project and sent to the State Historic Preservation Officer. The State Historic Preservation Officer formally responded on June 9, 2021, stating no objections to the Supplemental Finding of Adverse Effect.

1.4.4 The Value Analysis

Due to the anticipated cost of the project, a value analysis was conducted for the project in October 2019. The value analysis considered additional

alternatives that were evaluated based on impacts on performance, cost, time, and risk when compared to Alternative 8. The value analysis team was composed of Caltrans specialists unassociated and unfamiliar with the project at the time. If any new alternatives were recommended by the value analysis team, the project development team further evaluated those alternatives using the criteria listed in Section 1.4.2, Evaluation of Remaining Alternatives.

The value analysis team recommended that Value Analysis Alternatives 2.1, 2.2, 2.3, Alternative 2.4 (also referred to as the North Alignment), and 2.5 should be included in the project scope and evaluated as alternatives for this project. These alternatives were paired with companion alternatives, Value Analysis Alternatives 1.1 and 1.2, as detour options based on the need for a roadway realignment. However, after receiving feedback from the project development team, it was determined that Value Analysis Alternatives 2.1, 2.2, 2.3, and 2.5 would trigger a “yes” when compared to the alternative elimination criteria described in Section 1.4.2, Evaluation of Remaining Alternatives.

The value analysis team concluded that Value Analysis Alternative 2.4 (North Alignment) should be accepted as part of the project scope and further evaluated by the project development team. Value Analysis Alternatives 1.1 and 1.2 were also recommended for further evaluation as detour options for Alternative 8 and Value Analysis Alternative 2.4 (North Alignment), respectively. It was later determined that Value Analysis Alternative 2.4 (North Alignment) would result in severe utility impacts. This alternative was then revised, moved to the south, and renamed the South Alignment Alternative.

The value analysis team rejected the rest of the value analysis alternatives, as more fully described in Section 1.7, Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation. Section 1.7 also further describes Value Analysis Alternative 2.4 (North Alignment) before it was revised into the South Alignment Alternative.

1.4.5 Further Consultation with the Department of Water Resources and the State Historic Preservation Officer After the Public Circulation of the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

This section has been added since the draft environmental document was circulated to the public:

After completion of the public review and comment period, new access roads connecting State Route 166 to the California Aqueduct were added to the project description. These access roads were being designed in consultation with the Department of Water Resources. During the consultative meetings that took place on October 12, 2021, and October 26, 2022, the Department

of Water Resources stated that in-channel work may be feasible, provided Caltrans works in close coordination with the Department of Water Resources throughout the design and construction of the project and that the aqueduct would only be dewatered for 48 hours.

On May 2, 2022, Caltrans met with the Department of Water Resources to further discuss the feasibility of reverting the project back to a rehabilitation and seismic retrofit project. A follow-up letter dated May 5, 2022, was sent to the Department of Water Resources, requesting approval to move forward with the seismic retrofit and rehabilitation strategy.

Caltrans received a response letter on May 12, 2022, stating the Department of Water Resources' acceptance of the seismic retrofit and rehabilitation strategy, provided Caltrans remains committed to working closely with the Department of Water Resources in the design and construction phase of the project. A 48-hour dewatering limit is included in this agreement between the Department of Water Resources and Caltrans.

After this consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration. This led to the completion of the Second Supplemental Finding of Adverse Effect, which was submitted to the Office of Historic Preservation on August 11, 2022.

In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed on August 11, 2022, and identifies avoidance, minimization, and mitigation measures for the project. The Memorandum of Agreement is included in Appendix I. The Memorandum of Agreement was mentioned in the draft environmental document but was not included in the appendix because it was executed after the draft environmental document was circulated.

1.4.6 Reevaluation of Alternatives 1, 1A, 6, and 7

This section has been added since the draft environmental document was circulated:

After the Department of Water Resources agreed to allow in-channel work during the construction of the project, Alternatives 1, 1A, 6, 7, and Value Analysis Alternative 2.3 were reevaluated based on criteria 2 through 6 listed in Section 1.4.2, Evaluation of Remaining Alternatives. Following recent consultative determinations with the Department of Water Resources, criteria 1 was updated to reflect current dewatering time restrictions.

If any alternative triggered a “yes” in response to the criteria, the alternative was rejected. See Table A.1 in Appendix A for a comparison between the rejected alternatives and the criteria that triggered the rejection.

After triggering a “yes” in response to the criteria, Alternatives 1, 6, 7 were eliminated from further consideration and are discussed further in Section 1.8, Alternatives Reconsidered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

Alternative 1A has become the project preferred alternative and is discussed in detail under Section 1.5.1, Build Alternatives.

1.5 Project Alternatives

This section has been revised since the draft environmental document was circulated. Two alternatives—one build alternative and one no-build alternative—are proposed for this project. The alternatives were developed by an interdisciplinary project development team consisting of Caltrans staff from the divisions of Design, Traffic Operations, Environmental Analysis, Maintenance, and Right-of-Way. Caltrans consulted the California Department of Water Resources during the alternative development process. A value analysis was also conducted for the project in October 2019 in which new alternatives were presented and evaluated based on impacts on performance, cost, time, and risk. The proposed alternatives are described in Sections 1.5.1 and 1.5.2 below. See Section 1.7 and Section 1.8 for alternatives considered and eliminated from further discussion.

This project includes several standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2.

1.5.1 Build Alternatives

Alternative 1A

This alternative would add extra support to the bridge at pier 2 (the westerly bent row column) where the structure is currently sagging and cracking. Two new 8-foot-diameter columns would be placed in-line with the existing pier at the north and south edges of the bridge. The columns would be placed inside the aqueduct at a depth of 50 feet below the aqueduct liner. A 12-foot prestressed concrete cap beam would be installed across the columns and around the existing support wall to support the bridge and prevent further sagging. The new support structure would extend just outside of the existing structure footprint. This alternative would also update the bridge rail to current standards by replacing all existing metal beam guardrail with mid-west

guardrail, replace existing bridge dikes with hot mix asphalt dikes, and cold-plane the existing pavement and replace it with hot mix asphalt and rubberized hot mix asphalt up to 200 feet from both sides of the bridge. Fiber optic utilities would likely need to be relocated.

This alternative would cost $8,000,000 and would not require additional right-of-way or temporary construction easements. The project would take 4 to 6 months to construct. A detour would be required while the California Aqueduct is dewatered at the beginning of construction for 3 to 4 weeks. This alternative would adopt Value Analysis Alternative 1.1, which is a detour alternative. This detour alternative was presented to the project delivery team during the value analysis process as a companion alternative to all alternatives that maintained the existing bridge and roadway alignment. Under this detour alternative, traffic on State Route 166 would be rerouted onto State Route 119 and State Route 33, flowing to Interstate 5 and State Route 99. Reversing traffic control would be used for the remainder of construction.

1.5.2 No-Build (No-Action) Alternative

Under the No-Build (No-Action) Alternative, California Aqueduct Bridge Number 50-0323 would not meet the purpose and need of the project. The bridge would continue to be out of compliance with current Caltrans standards and continue to worsen. This would lead to decreased structural integrity and could lead to the collapse of the bridge. The potential collapse of the bridge could create a cost to life and property, involve additional construction, and threaten the delivery of water supply to Santa Barbara, Los Angeles, and San Bernardino counties, which would add up to possible impacts of extraordinary magnitude.

1.6 Identification of a Preferred Alternative

This heading and the following text on the preferred alternative have been added since the draft environmental document was circulated.

After the completion of the public review and comment period, Alternative 1A was reevaluated as a viable alternative and was established as a project build alternative.

The Project Development Team also reevaluated the two build alternatives discussed in the draft environmental document, Alternative 8 and the South Alignment Alternative, and compared them with Alternative 1A. After the reevaluation of the South Alignment Alternative and Alternative 8, both alternatives were eliminated from further consideration. Details regarding this decision can be found in Section 1.8, Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

As the only remaining build alternative, the Caltrans Project Development Team identified Alternative 1A as the preferred alternative.

The No-Build Alternative would not satisfy the purpose or need of the project because it will not retrofit, rehabilitate, or replace the bridge, which would continue to be out of compliance with current Caltrans standards and would continue to deteriorate. This would lead to decreased structural integrity and could lead to the collapse of the bridge.

1.7 Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

The following was added after the public circulation of the draft environmental document: This section discusses alternatives that were eliminated before the draft environmental document was circulated to the public. Due to recent consultative decisions between Caltrans and the Department of Water Resources, the elimination criteria based on the need to shut down the flow, reduce hydraulic capacity, or penetrate the aqueduct lining are no longer valid. Consequently, several alternatives discussed in this section were reevaluated after the circulation of the draft environmental document. The alternatives that were eliminated after reevaluation are discussed again in Section 1.8, Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation. Alternative 1A is discussed again in Section 1.5.1, Build Alternatives.

1.7.1 Alternatives 1, 1A, 6, and 7

Because the California Department of Water Resources determined that placing piers in the California Aqueduct would disrupt the flow of water and would not be feasible with aqueduct operations, the following alternatives were eliminated from further consideration.

Alternative 1

Alternative 1 proposed to seismically retrofit the bridge, which would have required the existing structure at Pier 2 to be elevated until it reached the required deck elevation. Seismically retrofitting the bridge would also have allowed for construction of the bridge columns at Pier 2. Once completed, a steel plate and threaded rods would have been placed through the cored holes on the structure to build the abutment footing for the bridge. The existing bridge rail would have been removed and replaced with Caltrans' standard concrete barrier.

Alternative 1A

Alternative 1A proposed a rehabilitation strategy for the bridge by strengthening Pier 2. The strengthening work at Pier 2 would have involved drilling holes through the aqueduct channel lining to place large pipe pile extensions to help support the bridge. Although Alternative 1A ultimately became the preferred alternative for this project, it is included here because it was initially eliminated prior to circulation of the draft environmental document (Initial Study/Environmental Assessment with 4(f) Evaluation).

Alternative 6

Alternative 6 proposed a replacement that would have used the existing bridge as a work platform. Alternative 6 proposed that new single-column piers be built near existing Piers 2 and 3 on the aqueduct lining. The new bridge structure would have been built from the existing bridge. The existing bridge would have been removed after the installation of the new bridge.

Alternative 7

Alternative 7 proposed a two-span replacement that would have used the existing bridge as a work platform. A single large-diameter column would have been built along the aqueduct centerline through the existing bridge structure. The new bridge structure would have been built off the existing bridge, and the existing bridge would have been removed after the installation of the new bridge.

1.7.2 Alternatives 2, 3, 4, and 5

As explained in Section 1.4.2, Evaluation of Remaining Alternatives, Alternatives 2, 3, 4, and 5 were evaluated but rejected based on the criteria listed below:

1) Does this alternative involve the complete shutdown of flow, significant reduction in hydraulic capacity, or penetrating the aqueduct lining?
2) Does this alternative fail to meet the project's purpose and need?
3) Does this alternative have excessive construction costs?
4) Are there severe operational or safety problems associated with this alternative?
5) Are there unacceptable adverse social, economic, or environmental impacts?
6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

If any alternative triggered a "yes" in response to the criteria, the alternative was rejected. See Table A.1 in Appendix A for a comparison between the rejected alternatives and the criteria that triggered the rejection.

Alternative 2

Alternative 2 would have replaced the existing bridge with a new one that would have crossed the aqueduct perpendicularly and about 1 mile south of its current location. This alternative would have required adding three horizontal curves and one vertical curve to the roadway. This alternative would have cost $23,315,000 and impacted up to 75 acres of farmland.

While Alternative 2 would have had low costs, it would have impacted the most farmland out of all the alternatives. Alternative 2 would have also introduced sharp horizontal reversing curves in the roadway, which studies have shown would be a potential safety concern for motorists. The introduction of sharp reversing curves warranted concerns from Traffic Operations staff, who requested the crash analysis to compare the new alignment with the existing condition. The September 27, 2018 version of the Crash Prediction Evaluation Report, which compared the existing alignment with the proposed new horizontal reversing curve alignment (Alternative 2), showed that Alternative 2 would have had a potential for a roughly 40 percent higher number of accidents.

Alternative 3

Alternative 3 would have replaced the existing three-span 394-foot-long bridge with a 1,320-foot-long segmentally built bridge on a parallel alignment. The structure would have been 49 feet tall. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 3 proposed to “clear span” the bridge, which would have left an open area within the structure for the California Department of Water Resources to access the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 3 would have cost $58,745,000 and impacted about 20 acres of farmland. Due to the high cost of Alternative 3 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

Alternative 4

Alternative 4 would have replaced the existing three-span 394-foot-long bridge with a 1,370-foot-long bridge that would have been supported and stabilized by long cables. The structure would have been 36 feet tall and built on a parallel alignment. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 4 proposed to “clear span” the bridge, which would have left an open area within the structure to allow the California Department of Water Resources to access the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 4 would have cost $63,135,000 and impacted about 20 acres of farmland. Due to the high cost of Alternative 4 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

Alternative 5

Alternative 5 would have replaced the existing bridge with a 1,320-foot-long segmental box girder bridge along existing State Route 166. The structure would have been 49 feet tall. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 5 proposed to “clear span” the bridge, which would have left an open area within the structure to allow the California Department of Water Resources to access the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 5 would have cost $58,745,000 and impacted about 16 acres of farmland. Due to the high cost of Alternative 5 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

1.7.3 Value Analysis Alternatives

The value analysis introduced new alternatives that were evaluated based on impacts on performance, cost, time, and risk when compared to Alternative 8. Key performance attributes identified for the project include mainline operations, temporary construction impacts, maintainability, and permanent environmental impacts. These attributes, along with an alternative’s cost savings, time savings, and assumed risks, were then quantified by the value analysis team using a Value Metrics algorithm. An increase in performance rating indicates the new alternative improves mainline operations, reduces temporary construction impacts, increases maintainability, or reduces permanent environmental impacts when compared to Alternative 8.

If any new alternatives were recommended by the value analysis team, the project development team further evaluated those alternatives using the criteria listed in Section 1.4.2, Evaluation of Remaining Alternatives. The following alternatives from the value analysis were considered and rejected, as explained below:

Value Analysis Alternative 2.1

This alternative would have improved Old River Road and Copus Road to current standards to serve as the new alignment for State Route 166. The aqueduct crossing on Old River Road would have also likely needed to be upgraded. The existing bridge would have been demolished.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $14,510,000, with a 205-day reduction in the construction schedule and a 1 percent decrease in performance. The performance rating is based on the impact the alternative would have had on the project’s expected mainline operations, temporary construction impacts, maintainability, and permanent environmental impacts.

Accepting this proposed alternative would have failed to meet the project's purpose and need, as the purpose of this project is to replace California Aqueduct Bridge Number 50-0323 with a new bridge, and this alternative would demolish the bridge without replacing it. For these reasons, Value Analysis Alternative 2.1 was eliminated from further consideration.

Value Analysis Alternative 2.2

This alternative would have developed a southern alignment for the new bridge. This bridge would have also used precast concrete girders.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $9,520,000, with a 55-day reduction in the construction schedule and an 8 percent decrease in performance. However, a Wheeler Ridge-Maricopa Water Storage District facility exists just south of State Route 166 and east of the California Aqueduct. This alternative would have reduced the skewed angle (the angle at which the bridge crosses the California Aqueduct) and avoided the Wheeler Ridge-Maricopa Water Storage District facility by creating a significant deviation from the existing roadway alignment. This would have resulted in a large impact on farmlands, like in Alternative 2. For these reasons, Value Analysis Alternative 2.2 was eliminated from further consideration.

Value Analysis Alternative 2.3

This alternative would have built box culverts similar to the crossing on Old River Road. The initial cost savings for this alternative, when compared to Alternative 8, would have been $19,500,000, with a 55-day reduction in the construction schedule and a 7 percent increase in performance.

Based on the meeting with the California Department of Water Resources on October 19, 2017, Caltrans found that the California Department of Water Resources would not approve any alternative involving a complete shutdown of flow, significant reduction in hydraulic capacity, or penetration of the aqueduct lining. For this reason, Value Analysis Alternative 2.3 was eliminated from further consideration.

Value Analysis Alternative 2.4

This alternative would have realigned the bridge to the north and introduced three horizontal reversing curves. This alternative would have reduced the overall size of the bridge, reduced the vertical curve of the bridge, and reduced the span length of the bridge, allowing for more conventional bridge construction methods when compared to Alternative 8. Rather than hauling and assembling oversized steel beams to create a structure onsite, this alternative would allow for the less challenging transportation of preassembled bridge parts. This alternative would also require up to 13 acres of farmland and add 3,578 feet of new roadway due to the route realignment involving reversing curves.

The initial cost savings for this alternative, when compared to Alternative 8, would be $18,900,000, with a 55-day reduction in the construction schedule and a 20 percent increase in performance. The project team accepted this alternative as a result of the value analysis.

After further evaluation, however, it was discovered that this alternative would result in severe utility impacts to an existing oil line. The oil line would need to be relocated farther to the north for this alignment, which would have added $5,000,000 to the project cost and require an additional 2 years to complete the project. For this reason, Value Analysis Alternative 2.4 as described in this section was eliminated from further consideration. However, this alternative was then revised, moved to the south, and renamed the South Alignment Alternative. See Section1.5.1, Build Alternatives, for additional details.

Value Analysis Alternative 2.5

This alternative would have created a platform bridge by installing concrete girders at 90 degrees to the aqueduct centerline. This platform bridge would have been roughly 490 feet long by 160 feet wide, and the travel way would have been delineated on this platform. This platform would likely have created public attention to the unused non-delineated portions of the bridge, which would likely result in the public occupying the excess space for fishing or recreation, which is often seen in similar bridge designs. Installing the piles to support the concrete girders would have also impacted the utilities on the north side and south side of the bridge, including an oil line, which would increase cost and lengthen the project schedule.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $7,410,000, with a 25-day reduction in the construction schedule and a 5 percent increase in performance. The cost and time required for utility relocations were not initially factored into this estimate by the value analysis team due to limited familiarity with the project area. Based on the visual and utility impacts noted by the project development team during the value analysis process, this alternative was removed from consideration.

1.8 Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

This section has been added since the public circulation of the draft environmental document.

After the public circulation of the draft environmental document, the Department of Water Resources agreed to allow in-channel work during project construction. Because Alternatives 1, 1A, 6, 7, and Value Analysis Alternative 2.3 were eliminated based on the need to shut down the flow, reduce hydraulic capacity, or penetrate the aqueduct lining, they were

reevaluated as potential build alternatives. The build alternatives proposed in the draft environmental document were also reevaluated.

The reevaluation of alternatives was based on the criteria listed below:

1) Does this alternative involve over two consecutive days of the complete shutdown of flow or significant reduction in hydraulic capacity of the California Aqueduct?

2) Does this alternative fail to meet the project's purpose and need?

3) Does this alternative have excessive construction costs?

4) Are there severe operational or safety problems associated with this alternative?

5) Are there unacceptable adverse social, economic, or environmental impacts?

6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

Criteria 1, as it is listed in Section 1.4.2, Evaluation of Remaining Alternatives, is no longer valid as a reason for alternative elimination, and was modified in the list above to match updated dewatering limitations. If any alternative triggered a "yes" in response to the remaining criteria, the alternative was rejected.

Alternatives 1, 6, and 7 were eliminated from further consideration and are discussed below. The build alternatives proposed in the draft environmental document were also reevaluated and eliminated after further consultation with the Department of Water Resources. See Table A.1 in Appendix A for a comparison between the rejected alternatives and the criteria that triggered the rejection.

Alternative 1A has become the project preferred alternative and is discussed in detail under Section 1.5.1, Build Alternatives.

1.8.1 Eliminated Alternatives

Alternative 1

Alternative 1 proposed to seismically retrofit the bridge, which would have required the existing structure at Pier 2 to be elevated until it reached the required deck elevation. Seismically retrofitting the bridge would also have allowed for construction of the bridge columns at Pier 2. Once completed, a steel plate and threaded rods would have been placed through the cored holes on the structure to build the abutment footing for the bridge. The existing bridge rail would have been removed and replaced with Caltrans' standard concrete barrier.

This alternative would have the potential to further damage the California Aqueduct and California Aqueduct Bridge Number 50-0323 during construction. The process of raising the existing bridge deck to the required elevation may crack the existing structure and aqueduct liner. This poses a safety risk to construction workers and risks unacceptable economic impacts. For these reasons, Alternative 1 was eliminated from further discussion.

Alternative 6

Alternative 6 proposed a replacement that would have used the existing bridge as a work platform. Alternative 6 proposed that new single-column piers be built near existing Piers 2 and 3 on the aqueduct lining. The new bridge structure would have been built from the existing bridge. The existing bridge would have been removed after the installation of the new bridge.

This alternative would have cost about $50,000,000 and would require elevating the roadway. This alternative would also require oil line relocations where the oil line could not be avoided through the construction of a retaining wall. Due to the high cost of Alternative 6 in combination with the impacts to utilities, Alternative 6 was eliminated from further discussion.

Alternative 7

Alternative 7 proposed a two-span replacement that would have used the existing bridge as a work platform. A single large-diameter column would have been built along the aqueduct centerline through the existing bridge structure. The new bridge structure would have been built off the existing bridge, and the existing bridge would have been removed after the installation of the new bridge.

This alternative would have cost about $50,000,000 and would require elevating the roadway. This alternative would also require oil line relocations where the oil line could not be avoided through the construction of a retaining wall. Due to the high cost of Alternative 7 in combination with the impacts to utilities, this alternative was eliminated from further consideration. For these reasons, Alternative 7 was eliminated from further discussion.

Value Analysis Alternative 2.3

This alternative would have built box culverts similar to the crossing on Old River Road. The initial cost savings for this alternative, when compared to Alternative 8, would have been $19,500,000, with a 55-day reduction in the construction schedule and a 7 percent increase in performance.

This alternative would require more time than the Department of Water Resources has allotted for dewatering. Also, the existing aqueduct liner would not serve as a good foundation for the culverts, and it would be difficult to maintain a cross sectional area for water flow equivalent to the existing

trapezoidal canal. For these reasons, this alternative was eliminated from further consideration.

Alternative 8

Alternative 8 would build a single-span replacement bridge that would not require the placement of piers in the aqueduct. The new bridge would be built on the same alignment as the existing bridge but would additionally impact about 6 acres of farmland. The new bridge would be a 16-foot-deep steel beam bridge about 434 feet long and 43 feet 6 inches wide with 12-foot-wide lanes and 8-foot-wide shoulders. The new bridge would have a vertical height of 21 feet and would require 1,500-foot approaches and fill material. A retaining wall would be located on the northern side of State Route 166, east of the California Aqueduct. The wall type would be a mechanically stabilized embankment, 1,250 feet long, with a maximum height of 24 feet. The top of the wall would include a concrete barrier on a reinforced concrete barrier slab.

This alternative would adopt Value Analysis Alternative 1.1 as the detour alternative. During the value analysis process, the value analysis team presented this alternative as a companion alternative to all recommended alternatives that maintained the existing bridge and roadway alignment. Under this detour alternative, traffic on State Route 166 would be rerouted onto State Route 119 and State Route 33, flowing to Interstate 5 and State Route 99 to maintain the flow of traffic during construction. This detour is included in Figure 1-2 in Section 1.3, Project Description. Details of the detour are provided in Section 2.4 Construction Impacts.

This alternative would acquire land from 4 parcels (agricultural land included) and require utility relocations, both of which are discussed in Section 2.1.1, Farmland and Section 2.1.2, Utilities and Emergency Services. Construction is expected to last up to 18 months, and the construction cost of this alternative is estimated to be $46,000,000. See Figure 1-3 for a visual simulation of this build alternative.

The following text has been added to the description of the Alternative 8 since the draft environmental document was circulated: The costs for Alternative 8 were updated to about $54,000,000. This alternative would require oil line relocations where the oil line cannot be avoided through the construction of a retaining wall and could lead to further right-of-way take when designing the permanent California Aqueduct maintenance access roads that were not accounted for before the circulation of the draft environmental document. This alternative would also take 6.15 acres of farmland. Alternative 8 would take 18 months to construct and require up to a 16-month-long detour. Due to cost, utility impacts, farmland impacts, construction time, and detour time, Alternative 8 was eliminated from further consideration.

Figure 1-3 Visual Simulation of Alternative 8

South Alignment Alternative

This alternative would build a single-span replacement bridge that would not require the placement of piers in the aqueduct. This alternative would realign the bridge to the south and introduce three horizontal reversing curves. This alternative would reduce the vertical curve of the bridge and allow for conventional bridge construction methods. This alternative would impact about 26 acres of farmland, add 4,752 feet of new pavement and include a 280-foot-long steel-girder bridge. The bridge girder would be about 12.5 feet deep and 43.5 feet wide, while the bridge would have a vertical profile 20 feet above ground.

This alternative would adopt Value Analysis Alternative 1.2 as a detour alternative. During the value analysis process, the value analysis team presented this alternative as a companion alternative to all recommended alternatives that would realign the bridge and roadway. This detour alternative would allow the continued use of the existing bridge during construction, minimizing the need for a new detour under the South Alignment Alternative. However, near the end of construction, a detour would be required while the realignment is connected to State Route 166. The same detour proposed for Alternative 8 would be used for the South Alignment Alternative.

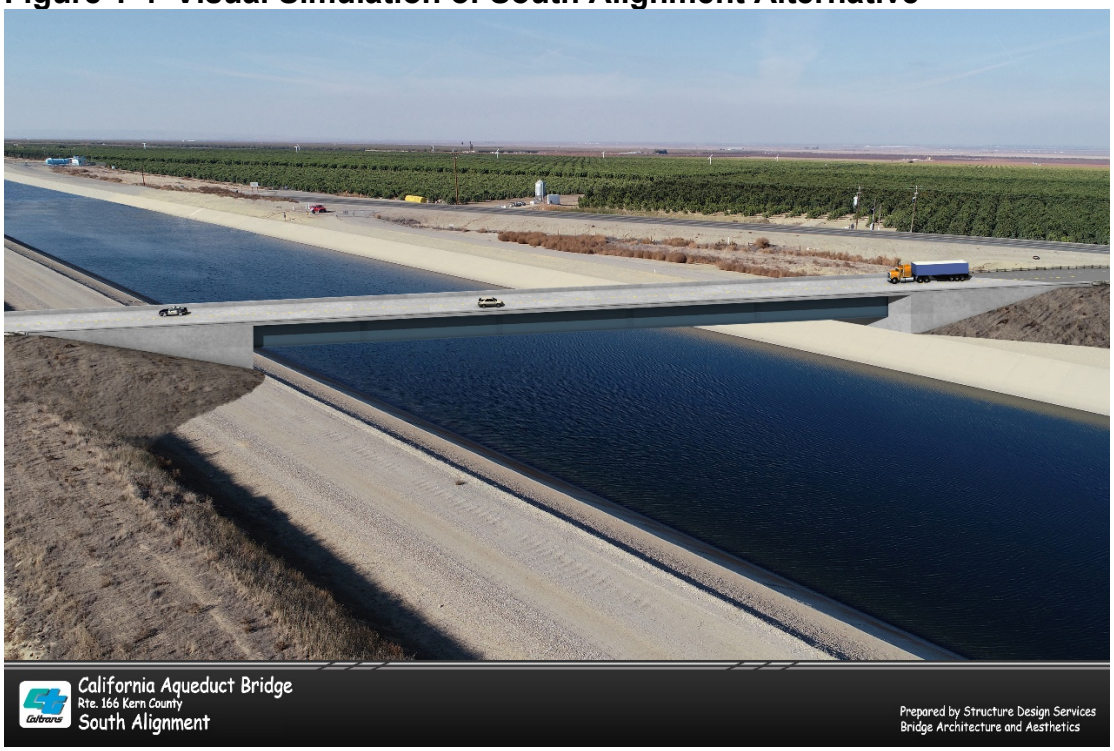
This alternative would acquire land from 8 parcels (agricultural land included) and require utility relocations, both of which are discussed in Section 2.1.1, Farmland and Section 2.1.2, Utilities and Emergency Services. Construction is expected to last up to 16 months, and the construction cost of the project is estimated to be $32,000,000. See Figure 1-4 for a visual simulation of this build alternative.

The following text has been added to the description of the South Alignment Alternative since the draft environmental document was circulated: After completion of the public review and comment period, the design of the South Alignment Alternative was further refined. The South Alignment Alternative would acquire land from 4 parcels, with a total right-of-way acquisition of 19.20 acres. This alternative would impact about 16.41 acres of farmland.

Four California Aqueduct maintenance access roads connecting State Route 166 to the California Aqueduct were added to the project description since the public review of the draft environmental document. The new access roads would connect to State Route 166 at Schallock Road on the western side of the project and at the divergent point from the existing alignment on the eastern side of the project. The two northern roads would be constructed on the existing State Route 166 footprint, and the two southern roads would be constructed parallel to the new alignment. These access roads would not require the acquisition of additional right-of-way outside the project footprint presented in the draft environmental document.

The South Alignment Alternative would cost about $39,000,000. This alternative would avoid conflicts with an oil line that exists north of the existing alignment and would take 26.39 acres of farmland. The South Alignment Alternative would take 16 months to construct and require a 2-month-long detour. Due to cost, utility impacts, farmland impacts, construction time, and detour time, the South Alignment Alternative was eliminated from further consideration.

Figure 1-4 Visual Simulation of South Alignment Alternative



1.9 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction:

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 consultation for Threatened and Endangered Species	A Letter of Concurrence for the San Joaquin kit fox, giant kangaroo rat, Tipton kangaroo rat, and blunt-nosed leopard lizard was received from the U.S. Fish and Wildlife Service on September 17, 2018. A second Letter of Concurrence for the San Joaquin kit fox, giant kangaroo rat, Tipton kangaroo rat, and blunt-nosed leopard lizard was received from the U.S. Fish and Wildlife Service on August 18, 2022.

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit	The 404 permit would be obtained before the start of construction.
Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	The 401 certification (permit) would be obtained before the start of construction.
State Office of Historic Preservation	Concurrence with Findings of Effect	The Finding of Adverse Effect was submitted to the State Historic Preservation Officer on March 24, 2021. The State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were identified. As a result, there is no further discussion of these issues in this document.

- Land Use—The project is consistent with the existing land use identified in the Kern County General Plan (2004). The area surrounding the project location is zoned for agriculture. For additional information regarding the surrounding farmland, see Section 2.1.1 Farmland.
- Coastal Zone—The project is not located in a coastal zone. The project is in western Kern County, which is more than 50 miles away from the nearest coastal zone. Therefore, there would be no impact to coastal zone resources.
- Wild and Scenic Rivers—There are no wild and scenic rivers in or next to the project area. Therefore, no impacts to wild and scenic rivers would occur. (Field visit June 9, 2017)
- Parks and Recreation—Based on field surveys and research into the local, county, and state park recreation systems, no parks or recreation facilities were identified in the project area. (Field visit June 9, 2017)
- Timberland—There are no timberlands within the study area. Therefore, the project would have no effect on timberlands. (Field visit June 9, 2017)
- Fisheries—The project is located outside of the National Marine Fisheries Service jurisdiction; therefore, a species list was not needed.
- Hydrology and Floodplain—This project does not encroach on or impact a 100-year floodplain. There will be no effects to the 100-year floodplain because the project is not located within a 100-year base floodplain. (Preliminary Location Hydraulic/Floodplain Study, April 2018)
- Geology, Soils, Seismicity and Topography—No project impacts related to geology, soils, seismicity or topography are expected. There are no major topographic or geologic features within the project area. Based on the Caltrans 2009 Seismic Design Procedure, the nearest active fault to the site is the White Wolf fault (Caltrans Fault ID Number 103) with a maximum magnitude of 7.3. The fault lies about 15 miles north-northeast of the bridge site. The rupture distance to the fault plane from the bridge site is estimated to be about 1.7 miles. A liquefaction analysis indicated

minimum potential for liquefaction at the site during an earthquake and during construction activities. Furthermore, no surface faults are present at the project site and the potential for surface fault rupture at the site is considered absent for this location. However, because White Wolf fault lies 15 miles away from the project site, the potential for naturally occurring seismic activity exists. The project would be designed to meet current seismic standards for roadway and bridge construction. (Foundation Report, March 2011 and District Preliminary Geotechnical Report for the California Aqueduct Bridge Replacement, 2021)

- Paleontology—The extent and intensity of the proposed ground disturbance is expected to be localized and limited to shallow soils. Soils underlying the existing road and associated structure elements were previously excavated or greatly disturbed during construction. As a result, scientifically significant fossils are unlikely to be encountered. (Updated Paleontological Identification Report, May 2022)
- Growth—The project would not alter existing roadway capacity and is limited to replacing the existing bridge. The project would not change existing accessibility, so the project would not result in direct or indirect impacts to growth in the area.
- Community Impacts—There are no existing communities within the project vicinity. The project would neither increase nor decrease public access. Therefore, the project would not result in any direct or indirect community impacts. The nearest community is the town of Mettler, about 7 miles east of the project location. (Field visit June 9, 2017)
- Relocations and Real Property Acquisition—The project area does not have any housing or businesses within the project post miles and would not displace people, businesses, or housing. The project would require the acquisition of farmland. For additional information regarding farmland acquisition, see Section 2.1.1 Farmland (Field visit June 9, 2017)
- Visual/Aesthetics—The project would retrofit and rehabilitate an existing bridge. The new support structure would not alter the existing visual quality. The visual character of the surrounding setting would not be reduced by the proposed changes. The project location is not classified as an Officially Designated State Scenic Highway. Also, the project would not add any new lighting or new sources of glare, and landscaping would restore areas disturbed by the project. Therefore, no visual impacts are expected for this project. (Scenic Resource Evaluation/Visual Impact Assessment, April 2015)
- Air Quality—According to the Transportation Conformity Rule (40 Code of Federal Regulations Section 93.126, Table 2), the project is exempt from all emissions analysis. The project is exempt under Table 2 – “Widening narrow pavements or reconstructing bridges (no additional travel lanes).” Temporary impacts generated by construction are discussed in Section 2.4 Construction Impacts. (Revised Air and Noise Studies, June 2022)

- Noise—This project does not qualify as a Type 1 because the project will take place in a rural setting. Land use within the project limits consists of farmland and open space. No sensitive receptors for noise impacts are present in or next to the project area. Temporary impacts generated by construction are discussed in Section 2.4 Construction Impacts. (Revised Air and Noise Studies, June 2022)
- Natural Communities—No natural communities are present in the project area because the area has been greatly transformed for agricultural purposes and water conveyance. The project will not impact any natural communities. (Revised Natural Environment Study, July 2022)
- Plant Species—No special-status plant species were identified within or near the project area. The project will not impact any special-status plant species. (Revised Natural Environment Study, July 2022)
- Invasive Species—The Caltrans invasive species policy guidelines, Standard Special Provisions, and best management practices would minimize the potential that this project would introduce, transport, or spread invasive species to and/or from the project site. (Revised Natural Environment Study, July 2022)
- Traffic and Transportation—The seismic retrofit and rehabilitation of the existing bridge would not alter existing traffic or transportation patterns in the region. Therefore, no permanent impacts would occur. However, temporary impacts during the construction period could occur, as discussed in Section 2.4 Construction Impacts.
- Vehicle Miles Traveled—This project is in accordance with the Caltrans Policy Memo (September 2020) regarding analysis of transportation impacts under the California Environmental Quality Act for projects on the State Highway System, as well as the department's Transportation Analysis Framework and Transportation Analysis under CEQA guide to implementation of Senate Bill 743 (Steinberg, 2013) codified at Public Resources Code Section 21099. This project meets criteria set forth in the policy memo that the project is considered a project type that is "unaffected by the use of Vehicle Miles Traveled as a measure of transportation impacts because they are assumed to not lead to a measurable and substantial increase in vehicle travel." There will be no impact to vehicle miles traveled. (Caltrans Policy Memo, September 2020)
- Energy—The actions associated with the project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. There would be no impact. (Energy Memorandum, 2021)
- Pedestrian and Bicycle Facilities—There are no pedestrian or bicycle facilities on the existing bridge. In addition, there are no existing pedestrian or bicycle facilities within the project area. Therefore, the project is not expected to impact pedestrian and bicycle facilities. (Field visit June 9, 2017)

- Environmental Justice—There are no residential populations adjacent to the project. No minority or low-income populations that would be adversely affected by the project have been identified as determined above. Therefore, the project is not subject to the provisions of Executive Order 12898.

2.1 Human Environment

2.1.1 Farmland

Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (7 U.S. Code 4201-4209; and its regulations, 7 Code of Federal Regulations Part 658) require federal agencies, such as the Federal Highway Administration, to coordinate with the Natural Resources Conservation Service if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

Affected Environment

A Custom Soil Resource Report was completed on February 13, 2018 by the Natural Resources Conservation Service for Kern County, California, Southwest Part: California Aqueduct Bridge Replacement. The land within the project area is designated by the Natural Resources Conservation Service as prime farmland if it is irrigated. This land is currently used to grow mostly fruit and nut crops, such as pistachios, almonds, and citrus. A Natural Resources Conservation Service farmland impact rating was calculated for the proposed project (see Appendix D).

Environmental Consequences

On March 2, 2021, Caltrans initiated consultation with the Natural Resources Conservation Service by completing a Natural Resources Conservation Service-CPA-106 Farmland Conversion Impact Rating form for the proposed project. The form was sent to the Bakersfield Service Center office of the Natural Resources Conservation Service for Kern County. The Farmland Conversion Impact Rating was completed by the field office and returned to Caltrans on March 9, 2021.

The Farmland Conversion Impact Rating determines the relative value of the farmland to be converted by using a formula that weighs farmland classification, soil characteristics, irrigation, acreage, creation of non-farmable land, availability of farm services, and other factors. The Natural Resources Conservation Service uses only prime/unique- and statewide/local importance-classified land on the Farmland Conversion Impact Rating form. According to the U.S. Department of Agriculture, for farmland and other agricultural lands protected or potentially protected under the Farmland Protection Policy Act, if the rating exceeds 160 points, additional alternatives should be considered that would lessen the adverse effects to farmlands.

The following has been revised since the public circulation of the draft environmental document:

Since the circulation of the draft environmental document, Alternative 8 and the South Alignment Alternative were eliminated from further consideration, and Alternative 1A became the project build alternative. Alternative 1A would not acquire any additional right-of-way, including farmland or Williamson Act properties. Alternative 1A would not result in any impacts to farmlands.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are required.

2.1.2 Utilities and Emergency Services

Affected Environment

Utilities

Within the project area, the California Department of Water Resources conveys water through the California Aqueduct, Pacific Gas and Electric Company provides electricity service through aerial electrical lines, Qwest Communications and Pacific Telephone operate fiber optic lines, the Wheeler Ridge-Maricopa Water Storage District manages agriculture irrigation water deliveries, and Shell Pipeline Company operates a high-pressure petroleum line (April 11, 2018, Right of Way Data Sheet).

Currently, utility poles carry cables along and across State Route 166. There is a buried petroleum pipeline in the area. Also, Qwest telecommunication cables are attached to the south side of the State Route 166 California Aqueduct bridge.

Emergency Services

The Kern County Fire Department provides fire protection and emergency medical and rescue service to the area from Station 22 in the City of Maricopa. The Kern County Sheriff's Department provides law enforcement to the area and uses State Route 166 to access its rural areas of jurisdiction in southern Kern County. The California Highway Patrol is responsible for traffic

enforcement on State Route 166. Hall Ambulance Service provides ambulance services in the project area.

Environmental Consequences

Utilities

The following has been revised since the public circulation of the draft environmental document:

Since the circulation of the draft environmental document, Alternative 8 and the South Alignment Alternative were eliminated from further consideration, and Alternative 1A became the project build alternative. The utilities that may be affected or relocated by the project convey electricity, communications, and water. The existing utility poles and power lines are located on the north side of State Route 166 throughout the length of the project, and on the south side of State Route 166 east of the California Aqueduct. The lines that cross the California Aqueduct along the existing bridge may require minor relocations to accommodate the new retrofit structure. The California Aqueduct would require a 48-hour dewatering at the beginning of construction to install the new support columns in the aqueduct liner. Caltrans would work with the Department of Water Resources and other utility providers during the design and construction phases of the project.

Emergency Services

The following has been revised since the public circulation of the draft environmental document:

The project would seismically retrofit and rehabilitate a bridge and would not have permanent impacts to emergency services.

The construction of Alternative 1A would reroute traffic on State Route 166 onto State Route 119 and State Route 33 to Interstate 5 and State Route 99. However, the detour would cause only minor delays for emergency services because local county roads would still be available for use throughout the area. The detour would be required for only about one month. Table 2.2 in Section 2.4 Construction Impacts lists the expected distance and duration of different detour route(s).

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would minimize temporary impacts to utilities and emergency services:

- All utility relocation work would be handled by the affected utility companies and in a manner to limit service disruptions to customers.
- A traffic management plan would be developed to inform emergency services and the local population about detour routes and road closures. The traffic management plan may include an advance commuter alert sent

out to media, California Highway Patrol, and other local partners, as well as the placement of notices for the closure on social media.

- Surrounding county roads would remain available for emergency services.

2.1.3 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to the "built environment" (structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including "historic properties," "historic sites," "historical resources," and "tribal cultural resources." Laws and regulations dealing with cultural resources include the following:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 U.S. Code 327).

The California Environmental Quality Act requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code Section 5024.1 established the California Register of Historical Resources and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register of Historical Resources and, therefore, a historical resource. Historical resources are defined in California Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to the California Environmental Quality Act, and Assembly Bill 52 is commonly referenced instead of the California

Environmental Quality Act when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in California Public Resources Code Section 21074(a), a tribal cultural resource is a California Register of Historical Resources or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in California Public Resources Code Section 21083.2.

California Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the National Register of Historic Places listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register of Historic Places or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with California Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between Caltrans and the State Historic Preservation Officer, effective January 1, 2015. For most federal-aid projects on the State Highway System, compliance with the Section 106 Programmatic Agreement will satisfy the requirements of California Public Resources Code Section 5024.

Affected Environment

A Historic Property Survey Report was completed in March 2018, summarizing the cultural resource identification efforts carried out for the project. An Area of Potential Effects was established to account for both direct and indirect effects from construction activities that may potentially impact cultural resources should any be present. Both archaeological and built environment resources were considered within the Area of Potential Effects for this undertaking. A supplemental compliance memorandum was completed in April 2020 summarizing additional cultural resource identification efforts carried out for the project detour. A supplemental Historic Property Survey Report was completed in March 2021 to capture changes to Alternative 8 and address the addition of the South Alignment Alternative. Since the public circulation of the draft environmental document, a second supplemental Historic Property Survey Report was completed in May 2022 after further consultation with the Department of Water Resources permitted the reconsideration of Alternative 1A and consequential elimination of the South Alignment Alternative and Alternative 8.

An Archaeological Survey Report investigation was completed to identify any archaeological sites within the project Area of Potential Effects. The scope of investigation for this project included a literature and records search,

pedestrian (walking the area) field surveys and consultation with Native American groups. An Extended Phase 1 Geoarchaeological exploration was also performed.

A records search at the Southern San Joaquin Valley Information Center, a background literature search, a topographic and historical map review, and a California Cultural Resource Database search identified no previously recorded prehistoric Native American or historic archaeological resources within the archaeological study area or within 1 mile of the project area. Consultation with Native American tribes was initiated by Caltrans on May 23, 2017 and on July 15, 2020 and is detailed in Chapter 4 Comments and Coordination.

The pedestrian archaeological survey was negative for presence of archaeological resources on the surface within the archaeological study area.

Due to the high cultural sensitivity of the area, an Extended Phase 1 Geoarchaeological exploration was performed for this project on February 27 and 28, 2018 to determine if buried soils could potentially include archaeological resources. Results were negative for the presence of buried cultural material.

One known architectural resource—the California Aqueduct (CA-FRE-3645H)—crosses the project area at State Route 166 at post mile 17.45. The California Aqueduct was determined eligible for the National Register of Historic Places in July 2012 via a consensus determination with the State Historic Preservation Officer (see Appendix F). The California Aqueduct was determined eligible for the National Register of Historic Places as the largest and most significant water conveyance system developed as part of the State Water Project. The aqueduct is also eligible for its complex design necessary to redistribute water throughout the state of California on such a massive level. The period of significance for the resource is 1960-1974, the years of construction. As part of the 2012 evaluation, 17 bridges over the California Aqueduct were determined to be contributing elements for the aqueduct's eligibility. Caltrans, as part of its cultural resource identification efforts, and in accordance with stipulation 8.C.4 of the Section 106 Programmatic Agreement, assumed the California Aqueduct Bridge Number 50-0323 was also eligible for inclusion in the National Register of Historic Places for this project only as a contributing feature of the California Aqueduct, and applied the criteria of adverse effect.

Environmental Consequences

The California Aqueduct Bridge Number 50-0323, built in 1968, is a contributing element of the California Aqueduct. A Finding of No Adverse Effect without Standard Conditions for the bridge was prepared by a Caltrans architectural historian in April 2018 and was submitted to the State Historic Preservation Officer for concurrence. On August 28, 2018, the State Historic

Preservation Officer formally responded to Caltrans stating that, after review, the State Historic Preservation Officer was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for this project. Caltrans accepted the State Historic Preservation Officer's comments and a Finding of Adverse Effect under Section 106 was completed for the project on January 29, 2019. A Supplemental Finding of Adverse Effect was completed and sent to the Office of Historic Preservation on March 24, 2021 to address adjustments to Alternative 8 and the addition of the South Alignment Alternative to the project. The State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect. After further consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration. This led to the completion of the Second Supplemental Finding of Adverse Effect, which was submitted to the Office of Historic Preservation on August 11, 2022. In response to the Second Supplemental Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed on August 11, 2022, and identifies avoidance, minimization, and mitigation measures for the project. The Memorandum of Agreement is included in Appendix I. The Memorandum of Agreement was mentioned in the draft environmental document but was not included in the appendix because it was executed after the draft environmental document was circulated.

Caltrans, pursuant to Section 106 Programmatic Agreement Stipulation 9.B, has determined that there are historic properties within the revised project area that may be affected by the project. These properties include the California Aqueduct (CA-FRE-3645H) and California Aqueduct Bridge Number 50-0323, a contributing element to the California Aqueduct. Effects are still undetermined, so in accordance with Section 106 Programmatic Agreement Stipulation 10, the project delivery team will continue consultation with the Caltrans Division of Environmental Analysis Cultural Studies Office and/or the State Historic Preservation Officer in the future on the assessment of effects.

Caltrans has prepared an analysis pursuant to Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S. Code 303, for use of the California Aqueduct (CA-FRE-3645H), and the California Aqueduct Bridge Number 50-0323 built in 1968 as a contributing element of the California Aqueduct. See Appendix A for the Individual Section 4(f) discussion and analysis.

The build alternative would have cumulative impacts to the California Aqueduct because it is anticipated that the current alternative will become the standard design for future California Aqueduct bridge projects as bridges deteriorate. Therefore, Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the

California Aqueduct. The Identification and Condition Report will assess the condition of the existing bridges and identify all known alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities must stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission, which, pursuant to Public Resources Code Section 5097.98, will then notify the Most Likely Descendent. At that time, the person who discovered the remains will contact Sylvère Valentin, the Caltrans District 6 archaeologist, so that he may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Avoidance, Minimization, and/or Mitigation Measures

To ensure that the history of the bridge is adequately captured before construction, Caltrans would implement mitigation measures to help ensure that the bridge maintains its historical importance through documentation. To do this, Caltrans would complete a Historic American Buildings Survey and a Historic American Engineering Record. The Historic American Buildings Survey/Historic American Engineering Record documentation combines drawings, history, and photographs to produce a comprehensive, multidisciplinary record of a building or engineering feature. Historic American Buildings Survey/Historic American Engineering Record documentation becomes a part of the collection at the Library of Congress. The Historic American Buildings Survey/Historic American Engineering Record for the bridge will describe and convey the importance of the bridge as well as the role that it plays in the larger aqueduct system.

Final mitigation measures were developed and documented in the subsequent Memorandum of Agreement, which was finalized after the public circulation and review of the draft environmental document. The following additional measures are proposed (the first bullet has been revised, and the second bullet has been added since the draft environmental document was circulated):

- Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the California Aqueduct. The Identification and Condition Report will assess the condition of the existing bridges and identify all known

alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

  - Caltrans will develop the California Aqueduct Bridge Identification and Condition Report in consultation with the Department of Water Resources. Caltrans will submit the draft Identification and Condition Report to the Office of Historic Preservation, the Cultural Studies Office, and all other consulting parties. Consulting parties will have 30 days to provide comment. If Caltrans does not receive a response within 30 calendar days, the submitted documents will be considered as final. Caltrans District 6 will take all comments into account in revising the document and submit a final version to the consulting parties for second review. The consulting parties will have 30 calendar days to review the revised documents. The California Aqueduct Bridge Identification and Condition Report will be completed within two years following the end of construction.

- Develop and install informative displays or kiosks at public locations in close proximity to the California Aqueduct in the unincorporated community of Kettleman City. These informative displays or kiosks will provide a brief history of the California Aqueduct, its associated features such as its bridges, its importance, and its use within the history of the San Joaquin Valley and California. Prior to fabrication of the informative panels, Caltrans will consult with the Office of Historic Preservation on the content of the informational displays for a 30-day review. The panels will be installed before expiration of the Memorandum of Agreement.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the U.S. from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. This act and its amendments are known today as the Clean Water Act. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

The goal of the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (40 Code of Federal Regulations Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences.

According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic waste standards, jeopardize the continued existence of listed

species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Also, it prohibits discharges of "waste" as defined, and this definition is broader than the Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Water Quality Control Board's Basin Plan. In California, Regional Water Quality Control Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use.

In addition, the State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application. It also oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including municipal separate storm sewer systems. A municipal separate storm sewer system is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.”

The State Water Resources Control Board has identified Caltrans as an owner/operator of a municipal separate storm sewer system under federal regulations. Caltrans’ municipal separate storm sewer system permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans’ municipal separate storm sewer system permit Order Number 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order Number 2014-0006-EXEC (effective January 17, 2014), Order Number 2014-0077-DWQ (effective May 20, 2014) and Order Number 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit;
2. Caltrans must implement a year-round program in all parts of the state to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) best

management practices, to the maximum extent practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Storm Water Management Plan assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Storm Water Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of best management practices. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest Statewide Storm Water Management Plan to address storm water runoff.

Construction General Permit

Construction General Permit—Order Number 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order Number 2010-0014-DWQ (effective February 14, 2011) and Order Number 2012-0006-DWQ (effective on July 17, 2012): The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, and 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and murkiness monitoring, and before-construction and after-construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan. In accordance with Caltrans' Statewide Storm Water Management Plan and

Standard Specifications, a Water Pollution Control Program is necessary for projects with a Disturbed Soil Area less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will comply with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements under the State Water Code (Porter-Cologne Act) that defines activities, such as the inclusion of specific features, waste limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

A Water Quality Assessment Report was completed in January 2021.

The California Aqueduct is a system of concrete-lined canals, tunnels, and pipelines conveying water collected from the Sierra Nevada Mountains and valleys of Northern and Central California to Southern California. Over 400 miles long, the aqueduct is the main feature of the California State Water Project. The Department of Water Resources owns and maintains the California Aqueduct.

The aqueduct begins at the Clifton Court Forebay at the southwestern corner of the Sacramento-San Joaquin River Delta. The aqueduct then heads south, eventually splitting into three branches: the Coastal Branch, ending at Lake Cachuma in Santa Barbara County; the West Branch, conveying water to Castaic Lake in Los Angeles County; and the East Branch, connecting to Silverwood Lake in San Bernardino County.

The Arvin-Wheeler Ridge Hydrologic Area is the designated area for surface water beneficial uses for valley floor waters, including agricultural supply, municipal supply, industrial supply, contact and non-contact recreational water uses; warm freshwater habitat; wildlife habitat for rare, threatened, or endangered species; and groundwater recharge.

Environmental Consequences

This section has been revised since the public circulation of the draft environmental document.

The potential effects (erosion, accidental spills of hazardous material, and disruption of natural drainage patterns) on water quality during construction would be addressed in both the design and construction phases. In the design phase, Caltrans would ensure there would be no direct discharge into any bodies of water. In the construction phase, the contractor is responsible for taking the necessary steps to eliminate potential negative effects during construction work activity.

All stormwater runoff would be collected, conveyed and discharged into existing side storage ditches within the State's right-of-way. The side ditches have enough capacity to contain two 10-year/24-hour storm events.

A short-term increase in suspended particulates in the water is likely to occur during the construction phase of the project. Implementation of the site-specific Water Pollution Control Best Management Practices measures would provide adequate protection to minimize or eliminate any potential impacts. Also, the California Aqueduct is lined with concrete, and the installation of new columns in the water is not anticipated to increase the turbidity and result in adverse impacts on water quality.

This project would not adversely affect water quality in the project area because adequate measures and precautions will be implemented in accordance with the Caltrans statewide National Pollutant Discharge Elimination System and Statewide Storm Water Management Plan. The project Spill Prevention, Control, and Countermeasure Plan would include strict onsite handling rules to keep construction and maintenance materials from entering the drainages, ditches, and ponds. The plan would identify procedures related to refueling, operating, storing, and staging construction equipment and preventing and responding to spills and would identify all parties responsible for monitoring the spill response. During construction, any spills would be cleaned up immediately according to the Spill Prevention, Control, and Countermeasure Plan. An Erosion and Sediment Control Plan would also be prepared for the project. The project Storm Water Pollution Prevention Plan would be continuously updated to adapt to changing site conditions during the construction phase.

A 401 Certification with the Regional Water Quality Control Board would be required to ensure compliance with federal and state effluent limitations and water quality standards.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is proposed. Temporary construction site best management practices would be followed to avoid and minimize impacts to water quality and storm water runoff.

Before any ground-disturbing activities, the contractor would prepare a Storm Water Pollution Prevention Plan (per the Construction General Permit Order 2009-0009-DWQ) that includes erosion-control measures and construction waste containment measures so that waters of the State are protected during and after project construction.

The Storm Water Pollution Prevention Plan would identify the sources of pollutants that may affect the quality of stormwater, as well as include construction site best management practices to control erosion and sedimentation, and spills of chemical pollutants; provide for construction materials management; and include a schedule of routine inspections and monitoring. All construction site best management practices would follow the latest edition of the Storm Water Quality Handbooks: Construction Site Best Management Practices Manual (Caltrans 2003a) to control and minimize the impacts of construction-related activities, materials, and pollutants on the watershed.

The project would incorporate pollution prevention and design measures consistent with the 2003 Caltrans Storm Water Management Plan (Caltrans 2003b) to meet water quality objectives. This plan has been revised to comply with the requirements of the Caltrans Statewide National Pollutant Discharge Elimination System Permit (Order 2012-0011-DWQ).

2.2.2 Hazardous Waste and Materials

Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, plus the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The main federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 and the Resource Conservation and Recovery Act of 1976. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as “Superfund,” is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact groundwater and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material are vital if such material is found, disturbed, or generated during project construction.

Affected Environment

An Initial Site Assessment/Hazardous Waste Compliance Memo, completed in February 2021, consisted of a Phase I Environmental Site Assessment, a site visit, and a database records search. The following five Cal/EPA Data Resources, commonly referred to as the “Cortese List,” were searched for this review:

- Envirostor database, List of Hazardous Waste and Substances sites, Department of Toxic Substances Control
- Geotracker database, List of Leaking Underground Storage Tank sites, State Water Resources Control Board

- Sites identified with waste constituents above hazardous waste levels outside the waste management unit, State Water Resources Control Board
- List of active Cease and Desist Orders and Cleanup and Abatement Orders, State Water Resources Control Board
- Department of Toxic Substances Control list of hazardous waste facilities subject to corrective action.

Also, the Solid Waste Information System database from the Department of Resources Recycling and Recovery was reviewed. The records and review did not identify any hazardous waste sites near the project limits.

An Asbestos, Aerially Deposited Lead, and Lead-Containing Paint Survey Report was completed for the project in January 2018. The purpose of the survey was to determine the presence and quantity of aerially deposited lead, asbestos and lead-containing paint on the existing bridge prior to bridge replacement.

Environmental Site Assessment

A Phase I Environmental Site Assessment was conducted in August 2020 to identify potential Recognized Environmental Conditions associated with Taft-Kern Auxiliary Field number 2, next to the project area to the north. Based on a review of historical documentation, it was determined that the area was occupied by an active U.S. Army airfield from 1941 to 1942. No permanent structures were constructed during that time, and no evidence of the use or storage of live ordnances or other hazardous materials was found. The runways were demolished in the 1950s, and the area has been used for agricultural purposes since that time. The Department of Toxic Substances Control reviewed historical information related to the airfield and concluded that no significant environmental issues are anticipated.

Asbestos

Chrysotile asbestos at a concentration of 30 percent was detected in samples representing about 10 square feet of nonfriable sheet packing used as barrier rail shims on the bridges. No additional asbestos was detected in samples of other suspect materials collected during the survey.

Lead Paint

A sample representing intact beige/gray graffiti abatement paint exhibited a representative total lead concentration of 10,000 milligrams per kilogram. A lead paint sample representing about 75 square feet of deteriorated white paint applied to metal conduit exhibited a representative total lead concentration of 230 milligrams per kilogram. These results are within acceptable regulatory limits.

Aerially Deposited Lead

An Aerially Deposited Lead Site Investigation Report was completed in February 2018. The survey detected lead in the soil to a depth of 2.5 feet in unpaved areas of the highway. The lead concentration found in the soil ranged from 7.5 to 26 milligrams per kilogram total lead with an average concentration of 23.9 milligrams per kilogram total lead as analyzed by Environmental Protection Agency test method 6010 or Environmental Protection Agency test method 7000 series and based on a 95 percent upper confidence limit. The soil is considered to be nonhazardous.

Treated Wood Waste

Wood to be removed from the guardrails is treated wood waste. Treated wood waste would be disposed of in a landfill permitted to accept it.

Environmental Consequences

Environmental Site Assessment

The Phase I Environmental Site Assessment identified one location-specific regional environmental consideration and several de minimis conditions associated with the properties north of the project area.

Pesticide use associated with the current and historical uses of the nearby properties has been identified as a regional environmental consideration. Any pumps, tubing/hoses, lubricants, fuel, or agricultural waste located on right-of-way acquisitions would be removed and properly disposed of. In addition, water wells located on these properties must be abandoned in accordance with state and local guidelines.

Asbestos

Sheet packing is a tightly bound material with no potential to release asbestos fibers and therefore is not a health and safety issue. Sheet packing is not considered to be a hazardous waste and can be stored or sent to a landfill that can accept the material. However, if the packing is cut, sawed or ground, there's the potential for fine asbestos fibers to be produced. At that point, it becomes a potential hazardous waste. If disturbed (cutting, abrading, sanding, grinding, etc.), the sheet packing material would have to be handled in compliance with the California Occupational Safety and Health Act asbestos standard, and sent to a landfill.

Lead Paint

Intact beige/gray graffiti abatement paint represented by samples collected would be classified as California hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate.

Deteriorated white paint applied to metal conduit would be classified as California hazardous waste based on lead content; the deteriorated lead-

based paint must be removed and disposed of prior to activities that would disturb the barriers.

If white- and yellow-painted striping is removed separately from the pavement, or if the paint on the bridge deck is ground separately from the pavement, then the project would require the use of Caltrans Standard Special Provision for removal of yellow traffic stripe and pavement marking with hazardous waste residue. A lead compliance plan is required for this project.

Aerially Deposited Lead

Aerially deposited lead from the historical use of leaded gasoline exists along roadways throughout California. If encountered, soil with elevated concentrations of lead will be managed under the July 1, 2016 Aerially Deposited Lead Agreement between Caltrans and the California Department of Toxic Substances Control. The Aerially Deposited Lead Agreement allows such soils to be safely reused within the project limits as long as all requirements of the Aerially Deposited Lead Agreement are met.

Treated Wood Waste

Wood removed from guardrails will be disposed of at a facility equipped to recycle the debris.

Avoidance, Minimization, and/or Mitigation Measures

With the avoidance and minimization measures mentioned above, no further measures are needed. No mitigation is required.

2.3 Biological Environment

2.3.1 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly known as the Clean Water Act (33 U.S. Code 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the Ordinary High Water Mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the Ordinary High Water Mark to the limits of the adjacent wetlands.

To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency.

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (40 Code of Federal Regulations 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, Executive Order 11990 states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated mainly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. See the Water Quality section for more details.

Affected Environment

A revised Natural Environment Study for the project was completed in March 2021, and a second Natural Environment Study was completed in July 2022. A biology field review on August 24, 2016 and database searches (U.S. Fish and Wildlife Service National Wetlands Inventory) were used to search for potential wetlands in the project area. No wetlands are present in the project area. A small drainage basin onsite receives water from the adjacent agricultural runoff.

The California Aqueduct and a small drainage basin are the only aquatic resources within the project area. Based on preliminary correspondence with the U.S. Army Corps of Engineers and the Regional Water Quality Control Board, the onsite drainage basin is not anticipated to fall under the jurisdiction of these entities. Under 40 Code of Federal Regulations 230.3(3), the U.S. Army Corps of Engineers considers the California Aqueduct “Waters of the United States,” as defined below from the regulations:

“All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes,

wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

c. Which are used or could be used for industrial purposes by industries in interstate commerce."

Environmental Consequences

No adjacent wetlands were found in the project area. The California Aqueduct conveys water downstream to traditionally navigable waterways. Therefore, the California Aqueduct would fall under the jurisdiction of the U.S. Army Corps of Engineers and Regional Water Quality Control Board. The California Aqueduct is not considered a jurisdictional feature by the California Department of Fish and Wildlife. The project includes the installation of new columns in the aqueduct liner, resulting in 0.002 acre of permanent impacts to the California Aqueduct. Temporary impacts would include the construction of cofferdams to construct the two new support columns. These activities are anticipated to require permits, and additional coordination would be conducted with the U.S. Army Corps of Engineers and Regional Water Quality Control Board. A 401 Water Quality Certification from the Regional Water Quality Control Board and a 404 nationwide permit from the U.S. Army Corps of Engineers are expected for this project.

The small drainage basin onsite receives water from the adjacent agricultural runoff. No work is proposed in this small drainage basin, so no impacts to this feature are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

Coordination with regulatory agencies will take place during the permit application phase of the project planning process. Best management practices will be in place to minimize any construction-related runoff. No compensatory mitigation is proposed.

2.3.2 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or

proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.3 Threatened and Endangered Species. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration's National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600—1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

A revised Natural Environment Study was completed for the project in March 2021, and a second Natural Environment Study was completed in July 2022. See the Natural Environment Study for the official species lists for state and federal species potentially in the project area.

Migratory Birds

One migratory bird species—the cliff swallow (*Petrochelidon pyrrhonota*)—was seen in the biological study area. This bird has short legs, relatively long pointed wings, and a small bill. Its average body length is 5.1 inches.

Cliff swallows are social songbirds that nest in large colonies and migrate in large flocks. They build gourd-shaped nests made from mud; the nests have small entrance holes. They build their nests tightly together, on top of one another, under bridges or alongside mountain cliffs. Cliff swallow nests can be found in large numbers on highway bridges during the nesting season (February 1 to September 30). Swallows were found nesting on the bridge in the project area.

American Badger

The American badger (*Taxidea taxus*) is a California Department of Fish and Wildlife species of special concern. Like other badgers, this badger has a stocky, low-slung body with short, powerful legs. American badgers are noted for their huge foreclaws and distinctive head markings. They measure 23 to 30 inches long and weigh 14 to 19 pounds. Except for the head, the American

badger is covered with a grizzled, brown, black and white coat of coarse fur. The badger's triangular face shows a distinctive black and white pattern, with brown or blackish "badges" marking the cheeks and a white stripe extending from the nose to the base of the head. Its coat aids in camouflage in grassland habitat.

The American badger preys mostly on pocket gophers, ground squirrels, moles, marmots, woodrats, kangaroo rats, deer mice, and voles, often digging to pursue prey into their dens, and sometimes plugging tunnel entrances with objects. They prefer grasslands and open areas with grasslands, including parklands, farms, and treeless areas with friable soil and a supply of rodent prey.

An American badger was seen during surveys 0.8 mile south of the project area, along the California Aqueduct, outside of the project footprint.

Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a California State Species of special concern. Its presence is variable, ranging from uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest. The western pond turtle is absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. They slip from basking sites to underwater retreats at the approach of humans or potential predators. Hibernation in colder areas is passed underwater in bottom mud. Individuals normally associate with permanent ponds, lakes, streams, irrigation ditches or permanent pools along intermittent streams. This species is considered omnivorous. Aquatic plant material, including pond lilies, beetles and a variety of aquatic invertebrates as well as fishes, frogs, and even carrion have been reported among its food.

Protocol-level surveys were not performed for this species in the survey area, nor was the species seen during other biological surveys. There are no nearby California Natural Diversity Database (2018) records of the species in the project vicinity. Although the California Aqueduct provides marginal aquatic habitat for western pond turtles, the general condition of the adjacent habitat is not suitable for western pond turtle occupation; the walls of the aqueduct are rather steep for basking, and aquatic vegetation is minimal or non-existent.

Environmental Consequences

Migratory Birds

Under the Migratory Bird Treaty Act, completed nests cannot be disturbed during the nesting season until the young have fledged (flown from the nest). Cliff swallows were seen at the existing bridge. Nesting activities for cliff swallows may be disrupted by construction-related noise and vibrations. Nests may also be destroyed during the removal of the existing bridge.

Exclusionary netting would be attached to the bridge prior to construction to prevent swallows from nesting on the bridge. The exclusionary netting eliminates potential nesting habitat for swallows. Special provisions for bird protection would be included in the construction contract.

American Badger

The following paragraph has been updated since public circulation and review of the draft environmental document. No permanent impacts to potential habitat are anticipated. The potential for an American badger to occur within the project footprint is low due to the quality of the habitat and disturbance in the area. No potential badger dens were found onsite. Although an American badger could use the California Aqueduct bridge as a corridor to travel through the project area, with avoidance and minimization efforts in place, no impacts to this species are expected.

Western Pond Turtle

There is a low potential for the western pond turtle to use the California Aqueduct. A weir about 2.5 miles upstream and a pumping plant 20 miles upstream from the project would prevent any potential western pond turtles from traveling through the aqueduct in this area. Therefore, it is unlikely pond turtles would be able to use the aqueduct as aquatic habitat or a migration corridor. The western pond turtle is not expected to occur within the project area, so no impacts are expected.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be incorporated into the project. No compensatory mitigation is required for migratory birds or the American badger.

Migratory Birds

- Caltrans Standard Special Provision 14-6.03 “Bird Protection” will be included in the construction contract. This provision includes the appropriate exclusionary measures and monitoring that will be required for cliff swallows.

American Badger

- If occupied suitable habitat is observed during pre-construction surveys, avoidance measures, such as environmentally sensitive area fencing, would be implemented where feasible.
- A qualified biological monitor would be present at the construction site during initial ground-disturbing activities. If American badgers are found within the project footprint, Caltrans will coordinate with the California Department of Fish and Wildlife on what additional measures can be implemented.

- Pre-construction surveys would be conducted to avoid potential impacts to this species.

Western Pond Turtle

- Pre-construction surveys would be conducted to avoid potential impacts to this species.

2.3.3 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take Statement or a Letter of Concurrence. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act.

Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of

Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

A revised Natural Environment Study for the project was completed in March 2021, and a second Natural Environment Study was completed in July 2022.

An official species list of federally endangered or threatened species that may be affected by the project was requested from the U.S. Fish and Wildlife Service on January 30, 2015 and updated on April 1, 2020. An updated species list was also obtained on March 2, 2021 using the Information for Planning and Conservation website. The latest species list is included in the revised Natural Environment Study, which can be found in Volume 2 of this document. Consultation between the U.S. Fish and Wildlife Service and Caltrans began on June 6, 2018. Caltrans submitted a Biological Assessment for the project impacts on the federally endangered San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, and blunt-nosed leopard lizard. A Letter of Concurrence from the U.S. Fish and Wildlife Service for the federally endangered San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, and blunt-nosed leopard lizard was received on September 17, 2018.

A California Natural Diversity Database search for state listed species was performed on April 1, 2020.

After public circulation and review of the draft environmental document, an updated species list was obtained using the Information for Planning and Consultation website on February 23, 2022. A revised Biological Assessment was sent to the U.S. Fish and Wildlife Service, and a second Letter of Concurrence was received on August 18, 2022.

San Joaquin Kit Fox

The San Joaquin kit fox is a federal endangered and state threatened species. Before 1930, the historical range of the San Joaquin kit fox extended from Contra Costa and San Joaquin counties in the north to Kern County in

the south. By the 1930s, the range had been reduced to the southern and western portions of the Central Valley. San Joaquin kit fox habitat is in annual grassland or mixed shrub/grassland throughout low, rolling hills and in valleys. The San Joaquin kit fox uses grazed grassland and lives next to, and forages in, tilled and fallow fields and some irrigated crops. However, most agricultural land is not suitable for long-term San Joaquin kit fox occupation.

The San Joaquin kit fox is mostly nocturnal and active throughout the year. Its diet varies geographically, seasonally, and annually but, throughout most of its range, consists mostly of rodents, rabbits, ground-nesting birds, and insects. Young San Joaquin kit foxes are generally born in January in California, with juveniles moving out on their own in summer.

The species was not seen during biological surveys conducted for the project in 2016. Additional pedestrian surveys were conducted in 2020 to look for any potential dens in areas that had not been previously surveyed and to ensure that no San Joaquin kit foxes had moved into the area since the 2016 surveys. It was found that the survey area contains only marginal-quality habitat for most small mammal species that represent prey for San Joaquin kit foxes. State Route 166 is an impediment to San Joaquin kit fox movement and is likely an existing source of mortality for dispersing and transient individuals. There are numerous California Natural Diversity Database (2016) records of this species in the project vicinity, but there are no occurrences within the last 10 years.

Because of the recent negative survey results, lack of recent documented sightings in the vicinity, and marginal habitat quality in and near the project area, this species is considered unlikely to be present in the project area. Only transient or dispersing individuals would be expected to occur in the project area.

Tipton Kangaroo Rat

The Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) is one of three geographically separated subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*) and is a federal and state endangered species.

Tipton kangaroo rats once occupied contiguous geographic ranges within the Tulare Basin and the southeastern half of the San Joaquin Basin in the San Joaquin Valley. The present distribution of the subspecies includes scattered, isolated populations in Tulare and Kern counties. The main diet of the Tipton kangaroo rat includes seeds of annual and perennial grasses, annual forbs (herbaceous broad-leafed flowering plants), woody shrubs, and insects.

Existing habitat around the project area is not suitable for the Tipton kangaroo rat. Much of the land immediately surrounding the right-of-way is farmland. These areas are actively managed to discourage rodents and are only marginally suitable for the Tipton kangaroo rat. Also, most of the right-of-way

does not provide suitable habitat for this subspecies due to regular disturbance caused by activities associated with the route's use and maintenance. State Route 166 likely acts as a barrier to wildlife and could be a source of mortality for the Tipton kangaroo rat.

Initial protocol small mammal trapping surveys were conducted in 2016. Additional pedestrian surveys were conducted in 2020 to evaluate the additional habitat that was not surveyed during the 2016 efforts. Habitat onsite was found to be consistent to what was present in 2016. No Tipton kangaroo rats were captured during trapping surveys, and there was no detection of this subspecies during other biological surveys conducted for the project. There are multiple Californi Natural Diversity Database records near the project vicinity, but due to negative protocol-level surveys, lack of recent documented sightings, and marginal habitat quality, the Tipton kangaroo rat is considered unlikely to occur in the project area.

Giant Kangaroo Rat

The giant kangaroo rat (*Dipodomys ingens*) is the largest kangaroo rat species in California and is a listed federal and state endangered species. Permanent residents occur as scattered colonies along the western side of the San Joaquin Valley. Giant kangaroo rats feed mostly on seeds from peppergrass and flowering plants. These kangaroo rats are active at night, all year, and breed from January to May. Predators of the giant kangaroo rat include raptors, owls, badgers, kit foxes, coyotes, and rattlesnakes.

Existing habitat around the project area is not suitable for the giant kangaroo rat. Much of the land surrounding the right-of-way is farmland. These areas are actively managed to discourage rodents and are only marginally suitable for the giant kangaroo rat. Also, most of the right-of-way does not provide suitable habitat for this subspecies due to regular disturbance caused by activities associated with the route's use and maintenance. State Route 166 likely acts as a barrier to wildlife and could be a source of mortality for the giant kangaroo rat.

Initial protocol small mammal trapping surveys were conducted in 2016. Additional pedestrian surveys were done in 2020 to evaluate the additional habitat that was not surveyed during the 2016 efforts. Habitat onsite was found to be consistent to what was present in 2016. No giant kangaroo rats were captured during the trapping survey conducted for the project. Because of the recent negative survey results, lack of recent documented sightings in the vicinity, and marginal habitat quality in and near the project area, this species is not expected to occur in the project area.

Blunt-Nosed Leopard Lizard

The blunt-nosed leopard lizard (*Gambelia sila*) is a large lizard of the family Iguanidae. The blunt-nosed leopard lizard is a federal and state endangered species. This lizard is native to the San Joaquin Valley. Its current range is

mostly the foothills of the western San Joaquin Valley and a small portion of the foothills of the eastern San Joaquin Valley within Kern County. The blunt-nosed leopard lizard inhabits open, sparsely vegetated areas within native and nonnative grassland, scrub, and dry lake communities on the floor of the San Joaquin Valley. The diet of the blunt-nosed leopard lizard consists mostly of insects (grasshoppers, crickets, and moths) and other lizards.

Although there are some small rodent burrows (which provide potential refuge) in the project area, the general condition of the habitat is not suitable for blunt-nosed leopard lizard occupation. This area is managed to discourage rodents, lacks shrubs, and is disturbed regularly by activities associated with highway use and maintenance.

Protocol-level surveys were not performed for this species in the survey area, nor was the species seen incidentally during other biological surveys. However, the Department of Water Resources conducted protocol-level surveys for this species in 2021, and the survey results were shared with Caltrans. Three adults were observed within 15 miles of this project. There are numerous California Natural Diversity Database (2016) records of the species in the project vicinity, but the last confirmed observation was in 2010. Therefore, based on the lack of available habitat onsite, recent surveys in the area and lack of connectivity to suitable habitat for dispersing blunt-nosed leopard lizards, this species is unlikely to occur in the project area.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) was previously considered a Species of Concern by the California Department of Fish and Wildlife. In April 2018, it was voted by the California Fish and Game Commission to list as threatened under the California Endangered Species Act.

Mostly a resident in California and common locally throughout the Central Valley and in coastal districts from Sonoma County south, this blackbird breeds near freshwater, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. The tricolored blackbird diet consists of insects, spiders, seeds and cultivated grains, such as rice and oats. The bird forages on the ground in croplands, grassy fields, flooded land, and along edges of ponds. Tricolored blackbirds seek cover in emergent wetland vegetation, especially cattails and tules, but also in trees and shrubs. Most tricolored blackbirds spend summertime in northeastern California, with sightings in the central San Joaquin Valley occurring regularly only at Tule Lake.

Tricolored blackbirds were seen at the project site during 2016 biological surveys. They were seen perched, singing, and hunting in the surrounding habitat of the aqueduct bridge. So, their presence within the project area is assumed. It is not known if any tricolored blackbird nests are in the project

area. There is a small basin area that may provide potential suitable nesting habitat for tricolored blackbirds within the action area.

Environmental Consequences

Federal listed species that have the potential to occur on or near the project site include the San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, and blunt-nosed leopard lizard. State listed species that have the potential to occur on or near the project site include the San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, and tricolored blackbird.

San Joaquin Kit Fox

Since public circulation and review of the draft environmental document, the permanent impacts to ruderal annual grassland and agricultural land were updated according to the current project description. Caltrans estimates that approximately 1.56 acres of ruderal annual grassland will be potentially impacted due to the project. Mapping of these impacts are provided in the Natural Environment Study, which is included in Volume 2 of this document. This habitat is low quality for the San Joaquin kit fox, and there is a low potential for this species to be in the area.

Disturbance impacts may result if kit foxes are occupying culverts or burrows next to work areas or traveling or foraging near active work areas. The risk of disturbance to transient or dispersing kit foxes would be higher during night work because kit foxes are generally nocturnal. All effects are temporary and expected to be minimal since there are no current sightings or evidence of use by kit foxes within the project area.

The build alternatives may affect, but are not likely to adversely affect, this species.

Tipton Kangaroo Rat

Since public circulation and review of the draft environmental document, the permanent impacts to ruderal annual grassland and agricultural land were updated according to the current project description. Caltrans estimates that approximately 1.56 acres of ruderal annual grassland will be potentially impacted due to the project. However, no Tipton kangaroo rats were found onsite, and the potential for Tipton kangaroo rats to disperse into the area is low due to the surrounding agriculture.

Tipton kangaroo rats are not expected to occur in the project area, therefore no direct impacts on the Tipton kangaroo rat are expected to occur from this project. A qualified biological monitor with a current Tipton kangaroo rat handling permit would be present during initial ground-disturbing activity. The monitor would have the authority to relocate Tipton kangaroo rats onsite if necessary.

The build alternatives may affect, but are not likely to adversely affect, this species.

Giant Kangaroo Rat

Since public circulation and review of the draft environmental document, the permanent impacts to ruderal annual grassland and agricultural land were updated according to the current project description. Caltrans estimates that approximately 1.56 acres of ruderal annual grassland will be potentially impacted due to the project. However, no giant kangaroo rats were not found onsite or captured during the trapping survey. The trapping results support the assessment of low-quality habitat within the right-of-way. The potential for giant kangaroo rats to disperse into the area is low due to the surrounding agriculture.

Giant kangaroo rats are not expected to occur in the project area, therefore no direct impacts on the species are expected to occur. A qualified biological monitor with a current giant kangaroo rat handling permit would be present during initial ground-disturbing activity. The monitor would have the authority to relocate giant kangaroo rats onsite if necessary.

The build alternatives may affect, but are not likely to adversely affect, this species.

Blunt-Nosed Leopard Lizard

Since public circulation and review of the draft environmental document, the potential impacts to the blunt-nosed leopard lizard have been updated according to the current project description. Work for the project will be occurring in previously disturbed or routinely maintained areas. Only a small section of marginally suitable habitat for the blunt-nosed leopard lizard occurs in the area.

Based on the recent survey results, lack of recent documented sightings in the last 10 years, and marginal habitat quality, the blunt-nosed leopard lizard is unlikely to occur in the project area. Because blunt-nosed leopard lizards are unlikely to occur in the project area, no direct, indirect, or future impacts to the species are expected to occur from the project.

The build alternatives may affect, but are not likely to adversely affect, this species.

Tricolored Blackbird

Impacts to the tricolored blackbird have been updated since the public circulation of the draft environmental document. A small drainage basin in the adjacent agricultural land may be suitable for tricolored blackbirds to nest. If tricolored blackbirds are found to be nesting in this area during construction, there would be potential for the adjacent construction activities to disturb the nesting birds. Birds nesting in this area would be used to some disturbance from nearby farming activities and State Route 166 traffic. The basin is also

rather small and may not contain sufficient nesting habitat suitable to support this species.

With the avoidance and minimization measures in place, it is not anticipated the tricolor blackbird would be impacted by the project. Therefore, Caltrans does not anticipate needing to obtain a 2081 incidental take permit from California Department of Fish and Wildlife for this species.

The build alternatives may affect, but are not likely to adversely affect, this species.

Avoidance, Minimization, and/or Mitigation Measures

No compensatory mitigation is proposed for the San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, blunt-nosed leopard lizard, and tricolored blackbird. The following avoidance, minimization, and best management practices would be used for the project:

San Joaquin Kit Fox

- A Worker Environmental Education Program will be conducted before ground-disturbing activities begin. Persons knowledgeable in San Joaquin kit fox biology and regulatory requirements will present the program to all construction personnel involved in constructing the proposed action. The program will include a description of the San Joaquin kit fox and its habitat needs; a report on the occurrence of the kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce effects on the San Joaquin kit fox during project construction and implementation, including information about the ban on rodenticides and pest rodent traps and contact information for a designated biological representative. A fact sheet conveying this information will be prepared for distribution to all those who enter the project site, and it will be posted in the office trailer or other worker meeting place on the project site.
- Project-related vehicles should observe a daytime speed limit of 20 miles per hour and a nighttime speed limit of 10 miles per hour throughout project areas, except on county roads and state and federal highways; this is particularly important at night when kit foxes are most active.
- To minimize the adverse effects of lighting, it will be confined to areas within the construction footprint.
- A litter control program will be instituted on the project site. All food-related trash items, such as wrappers, cans, bottles, and food scraps, will be disposed of in a closed and secured container and removed from the project site at the end of each workday. No deliberate feeding of wildlife will be allowed.
- No firearms will be allowed on the project site (with the exception of federal, state or local law enforcement personnel or security personnel).

- No pets will be allowed on the project site.
- Chemicals, fuels, lubricants, and biocides will be used only in compliance with all local, state, and federal regulations. Users of such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and state and federal legislation.
- Use of rodenticides and herbicides on the project site during construction will be prohibited.
- Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, etc. will be recontoured if necessary and revegetated using California endemic plant material from a local source (for example, local ecotype). Loss of soil from runoff or erosion will be prevented with straw bales, straw wattles or other similar means provided they do not entangle or block movement of the San Joaquin kit fox. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated.
- Pre-construction surveys for the San Joaquin kit fox and dens within the project area will be conducted no more than 30 days before the beginning of ground disturbance or construction activities. Surveys will be conducted by qualified biologists with demonstrated experience in identifying the San Joaquin kit fox and its dens.
- Staging will occur in previously disturbed and/or paved areas and, where possible, burrows will be avoided.
- The use of temporary artificial lighting onsite will be limited, except when necessary for construction, or for driver and pedestrian safety. Any artificial lighting used during construction, particularly at night, will be confined to areas within the construction footprint and directed away from surrounding habitat. Caltrans will limit non-target casting of light by installing shielding behind and underneath the light source to confine the illumination further in order to minimize its effects on the species.
- A qualified biologist(s) will be present onsite to monitor for all of the species during initial ground-disturbing activities. The qualified biologist(s) otherwise will be available on-call during all construction periods in the event that listed species are observed either onsite or in the vicinity of the project footprint.

Tipton Kangaroo Rat and Giant Kangaroo Rat

- Additional trapping surveys will be conducted prior to construction following the *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats U.S. Fish and Wildlife Service Sacramento Field Office*

March 2013 to ensure that listed species are not present in the project area.

- Worker Environmental Awareness Training will be required for construction staff who will be working in the action area.
- A qualified monitor will be present during initial ground-disturbing activities.

Blunt-Nosed Leopard Lizard

- A biological monitor would be onsite during initial ground-disturbing activities.
- Requiring low speed limits within the construction site will lessen the probability that blunt-nosed leopard lizards could be run over by vehicles and equipment.

Tricolored Blackbird

- Nesting surveys would be conducted during the season prior to the start of construction to determine if any tricolored blackbirds are nesting in proximity to the project area.
- A qualified biologist would monitor active nests during construction activities.
- A special provision for migratory birds would be included to ensure that no potential nesting migratory birds are affected during construction.
- If nesting tricolored blackbirds are found onsite, an appropriate no-disturbance buffer will be established.

2.4 Construction Impacts

Affected Environment

Construction activities for the project would cause temporary impacts for access and traffic circulation, air quality, utilities, noise, and emergency services. These impacts would not be substantial.

Environmental Consequences

Traffic and Emergency Services

This section has been revised since the public circulation of the draft environmental document.

The project would temporarily interfere with local traffic, causing minor delays. During construction, temporary road closures would be necessary. Traffic on State Route 166 would be rerouted onto State Route 119 and State Route 33 and then to Interstate 5 and State Route 99 to maintain the flow of traffic during construction. This detour is included in Figure 1-2 in Section 1.3, Project Description. Delay durations created by the detour are estimated in

Table 2.2. Each column and row in Table 2.2 depict a city or intersection near the project location. The values in the table show the additional travel time the detour would add to a route between two cities or intersections. For example, the travel time between the Wheeler-Ridge Water District and Maricopa would increase by about 29 minutes because of the detour. Delays for most commuters along the corridor would be minimal. The greatest impact would be on truck traffic that regularly travels on State Route 166 between Maricopa and the Wheeler Ridge Water District to conduct business. However, surrounding county roads would remain open during construction and could be used by local motorists and emergency services. The detour would be used for about 1 month during construction.

Traffic management would minimize the need for road closures for the remainder of construction.

A traffic management plan would be developed to inform emergency services and the local population about detour routes and road closures. The traffic management plan may include an advance commuter alert sent out to media, the California Highway Patrol, and other local partners, as well as the placement of notices for the closure on social media.

Table 2.2 Traffic Delay in Minutes Caused by Alternative 8 Detour

City or Intersection	Maricopa	Wheeler Ridge Water District	Bakersfield	Taft	I-5/Laval Road
Maricopa	0	29	0	0	18
Wheeler Ridge Water District	29	0	0	19	0
Bakersfield	0	0	0	0	0
Taft	0	19	0	0	0
I-5/Laval Road	18	0	0	0	0

Source: Google Maps.

A traffic management plan would be developed to inform emergency services and the local population about detour routes and road closures. The traffic management plan may include an advance commuter alert sent out to media, the California Highway Patrol, and other local partners, as well as placement of notices for the closure on social media.

Surrounding county roads would remain available for emergency services.

Air Quality

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon

monoxide, nitrogen oxides, volatile organic compounds, directly emitted particulate matter, sulfur dioxide, and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that comes from nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site.

During construction, the project would generate air pollutants. The impacts of these activities would vary each day as construction progresses. Dust and odors during construction could cause occasional annoyance and complaints from residents along the state right-of-way.

Carbon dioxide emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool. The estimated carbon dioxide construction emissions are 148 tons per year over a 4- to 6-month construction period. Operational carbon dioxide emissions generated from passenger vehicles were not estimated because the project is not capacity increasing. However, the proposed detour would add 22 miles of travel for vehicles traveling in the eastbound and westbound directions between Maricopa and Mettler. Operational carbon dioxide emissions generated from passenger vehicles as a result of the detour would be about 1,158 tons of carbon dioxide over a 1-month construction period.

Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area.

Table 2.3 summarizes noise levels produced by construction equipment that are commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 80 to 89 decibels at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 decibels per the doubling of distance.

Table 2.3 Construction Equipment Noise

Equipment	Maximum Noise Level (decibels at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration, 1995.

Construction would be conducted in accordance with Caltrans Standard Specifications, which will effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 14-9.02 “Air Pollution Control” and Section 10-5 “Dust Control,” require the contractor to comply with the air pollution control rules, ordinances, and regulations and statutes that apply to work performed under the contract.

Construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 “Noise Control,” which states construction noise resulting from work activities should not exceed 86 decibels at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.

All equipment will have sound-control devices that are no less effective than those provided on the original equipment.

Avoidance, Minimization, and/or Mitigation Measures

With the implementation of the previously mentioned standardized measures, no additional measures are required for temporary impacts to air quality, noise, or traffic and emergency services resulting from construction activities.

Chapter 3 CEQA Evaluation

3.1 Determining Significance Under CEQA

The project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (known as CEQA) and the National Environmental Policy Act (known as NEPA). The Federal Highway Administration's responsibilities for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 and the Memorandum of Understanding dated May 27, 2022, and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under NEPA and CEQA.

One of the main differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (the project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental document.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant Impact With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A “No Impact” answer reflects this determination. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project and standardized measures that are applied to all or most Caltrans projects such as best management practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 and provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

“No Impact” determinations in each section are based on the scope, description, and location of the project as well as the appropriate technical report (bound separately in Volume 2), and no further discussion is included in this document.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact—There are no scenic vistas within 2 miles of the project site. There would be no impact.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact—The project would not be completed on a state scenic highway. There would be no impact.

c) 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 a 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?

No Impact—The rehabilitation and seismic retrofit of the bridge would not substantially alter or degrade the existing visual character or quality of public views of the project site. There would be no impact.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact—The rehabilitation and seismic retrofit of the bridge would not require lighting. There would not be a new source of substantial light or glare that would affect daytime or nighttime views in the area. There would be no impact.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

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 Department 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) 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?

The following text has been revised since the draft environmental document was circulated:

No Impact—This impact was reduced from "Less Than Significant Impact" to "No Impact" since the circulation of the draft environmental document

because Alternative 8 and the South Alignment Alternative were eliminated from further consideration, and Alternative 1A became the project build alternative. Alternative 1A would not acquire any additional right-of-way, including farmland or Williamson Act properties. Alternative 1A would not result in any impacts to farmlands.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The following text has been revised since the draft environmental document was circulated:

No Impact—This impact was reduced from “Less Than Significant Impact” to “No Impact” since the circulation of the draft environmental document because Alternative 8 and the South Alignment Alternative were eliminated from further consideration, and Alternative 1A became the project build alternative. Alternative 1A would not acquire any additional right-of-way, including farmland or Williamson Act properties. Alternative 1A would not result in any impacts to farmlands.

c) 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))?

No Impact—The project would not conflict with existing zoning or cause rezoning of forest land or timberland zoned as Timberland Production. There would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact—The project site is located on an existing state route and does not contain any designated forest land or timberland. There would be no impact.

e) 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?

No Impact—The bridge replacement would not result in any changes in the environment that would result in the conversion of farmland to non-agricultural use. There would be no impact.

3.2.3 Air Quality

CEQA Significance Determinations for 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:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact—The project involves temporary earthmoving and excavation to remove the existing bridge and to construct the proposed bridge. The air quality impacts of the project would be mostly construction-related emissions that are temporary and short term in nature (see Section 3.4 Climate Change). Because construction and operations of the project would not substantially increase air pollutant emissions within the San Joaquin Valley Air Basin, the project would not interfere with the San Joaquin Air Pollution Control District's plan to achieve or maintain attainment for various air quality pollutants. The project would not conflict with or obstruct the implementation of any applicable components of the State Implementation Plan to meet federal and state air quality standards or conflict with air district or county air quality plans. There would be no impact.

b) 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?

No Impact—No long-term operational emissions would occur as a result of the project. The project would not result in a cumulatively considerable net increase of any criteria pollutants. There would be no impact.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—There are no sensitive receptors within a 2-mile radius of the project site. There would be no impact.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact—No generation of noticeable offensive odors is associated with the proposed actions. There would be no impact.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

a) 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 U.S. Fish and Wildlife Service?

Less Than Significant Impact—The project would result in the disturbance of up to 1.56 acres of potential habitat for species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. These species include the San Joaquin kit fox, Tipton kangaroo rat, giant kangaroo rat, blunt-nosed leopard lizard, and tricolored blackbird. The project may affect, but is not likely to adversely affect, these species. A Letter of Concurrence from the U.S. Fish and Wildlife Service regarding project impacts on these species was received on September 17, 2018. After public circulation and review of the draft environmental document, a revised Biological Assessment was sent to the U.S. Fish and Wildlife Service, and a second Letter of Concurrence was received on August 18, 2022. With avoidance and minimization efforts in place, less than significant impacts are expected.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact—The project site does not have any riparian habitat or other sensitive natural communities within the project post miles. There would be no impact.

c) 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?

Less Than Significant Impact—This CEQA significance determination has been updated since the public circulation of the draft environmental document. The California Aqueduct and a small drainage basin are the only aquatic resources within the project area. Based on preliminary correspondence with the U.S. Army Corps of Engineers and the Regional Water Quality Control Board, the onsite drainage basin is not anticipated to fall under the jurisdiction of these entities. The project would install new columns in the aqueduct liner, resulting in 0.002 acre of permanent impacts to the California Aqueduct. Temporary impacts would include the construction of cofferdams to construct the two new support columns. These activities are anticipated to require permits, and additional coordination would be conducted with the U.S. Army Corps of Engineers and Regional Water Quality Control Board. A 401 Water Quality Certification from the Regional

Water Quality Control Board and 404 nationwide permit from the U.S. Army Corps of Engineers are expected to be needed for this project.

d) 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?

No Impact—The project area is not within any identified corridor or core population area for any native resident or migratory fish or wildlife species. The project would not impede the use of native wildlife nursery sites. There would be no impact.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact—The project site would not conflict with any local policies or ordinances protecting biological resources. There would be no impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact—The project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less Than Significant Impact With Mitigation Incorporated—One known architectural resource crosses through the project area. The California Aqueduct (CA-FRE-3645H) crosses the project area at State Route 166 at post mile 17.45. The California Aqueduct was determined eligible for the National Register of Historic Places in July 2012 via a consensus determination with the State Historic Preservation Officer (see Appendix F).

The project would replace the California Aqueduct Bridge Number 50-0323, built in 1968, which is a contributing element of the California Aqueduct. A Finding of Adverse Effect under Section 106 was completed for the project on January 29, 2019, with a subsequent Finding of Adverse Effect completed in March 2021 to capture the effect of the South Alignment Alternative. The

State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect. After further consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration. This led to the completion of a Second Supplemental Finding of Adverse Effect, which was submitted to the Office of Historic Preservation on August 11, 2022. In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed on August 11, 2022, and identifies avoidance, minimization, and mitigation measures for the project. The Memorandum of Agreement is included in Appendix I. The Memorandum of Agreement was mentioned in the draft environmental document but was not included in the appendix because it was executed after the draft environmental document was circulated.

Caltrans has prepared an analysis pursuant to Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S. Code Section 303, for use of the California Aqueduct (CA-FRE-3645H), and the California Aqueduct Bridge Number 50-0323 built in 1968 as a contributing element of the California Aqueduct. The Individual Section 4(f) discussion can be found in Appendix A.

To ensure that the history of the bridge is adequately captured prior to construction, Caltrans will be implementing mitigation measures to ensure that the bridge's historical importance is documented. To do this, Caltrans will complete a Historic American Buildings Survey and a Historic American Engineering Record. The Historic American Buildings Survey/Historic American Engineering Record documentation combines drawings, history and photographs to produce a comprehensive, multidisciplinary record of a building or engineering feature. Historic American Buildings Survey/Historic American Engineering Record documentation becomes a part of the collection at the Library of Congress. The Historic American Buildings Survey/Historic American Engineering Record for the bridge will describe and convey the importance of the bridge as well as the role that the bridge plays in the larger aqueduct system.

Final mitigation measures were developed and documented in the subsequent Memorandum of Agreement, which was finalized after the public circulation and review of the draft environmental document. The following additional measures are also proposed:

- Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the California Aqueduct. The Identification and Condition Report will assess the condition of the existing bridges and identify all known

alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

Caltrans will develop the California Aqueduct Bridge Identification and Condition Report in consultation with the Department of Water Resources. Caltrans will submit the draft Identification and Condition Report to the Office of Historic Preservation, the Cultural Studies Office, and all other consulting parties. Consulting parties will have 30 days to provide comment. If Caltrans does not receive a response within 30 calendar days, the submitted documents will be considered as final. Caltrans District 6 will take all comments into account in revising the document and submit a final version to the consulting parties for second review. The consulting parties will have 30 calendar days to review the revised documents. The California Aqueduct Bridge Identification and Condition Report will be completed within two years following the end of construction.

- Develop and install informative displays or kiosks at public locations in close proximity to the California Aqueduct in the unincorporated community of Kettleman City. These informative displays or kiosks would provide a brief history of the California Aqueduct, its associated features such as its bridges, its importance, and its use within the history of the San Joaquin Valley and California. Prior to fabrication of the informative panels, Caltrans will consult with the Office of Historic Preservation on the content of the informational displays for a 30-day review. The panels will be installed before expiration of the Memorandum of Agreement.

With these mitigation measures incorporated, the project would result in a less than significant impact to the historical resource.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact—No archaeological resources were uncovered inside the project's area of potential effect. There would be no impact.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact—No formal cemeteries or other places of human internment are known to exist at the site. In the event human remains are encountered during construction activities, all work within the vicinity of the remains would halt in accordance with Health and Safety Code Section 7050.5, California Public Resources Code Section 5097.5, and Section 15064.5 of the CEQA Guidelines, and the San Joaquin County Coroner's office would be contacted.

However, if during construction human remains are discovered, work will be halted until the Kern County coroner is contacted to determine that no

investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner will contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission will identify the person or persons it believes to be the most likely descendent of the deceased Native American. The most likely descendent may then make recommendations to Caltrans for means of treating or disposing of, with appropriate dignity, the human remains and associated grave goods as provided in California Public Resources Code Section 5097.98.

The project would occur on previously disturbed land. The project would remove and replace an existing bridge on an existing alignment. Potential impacts to human remains would not be very likely to occur as a result of the project. There would be no impact.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact—The proposed actions associated with the project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. There would be no impact.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—The proposed actions associated with the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. There would be no impact.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) 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.

No Impact—According to the State of California Department of Conservation's Alquist-Priolo Earthquake Fault Zoning Map, there are no faults located on the project site. There would be no impact.

ii) Strong seismic ground shaking?

No Impact—According to the State of California Department of Conservation's Alquist-Priolo Earthquake Fault Zoning Map, there are no faults located on the project site. The nearest active fault to the site is the White Wolf fault (Caltrans Fault ID Number 103) with a maximum magnitude of 7.3. The fault lies about 15 miles northeast of the bridge site. There would be no impact.

iii) Seismic-related ground failure, including liquefaction?

No Impact—According to the State of California Department of Conservation's Alquist-Priolo Earthquake Fault Zoning Map, there are no faults located within the project site. The nearest active fault to the site is the White Wolf fault (Caltrans Fault ID Number 103) with a maximum magnitude of 7.3. The fault lies north-northeast of the bridge site. The rupture distance to the fault plane from the bridge site is estimated to be about 1.7 miles. A liquefaction analysis indicated minimum potential for liquefaction at the site during an earthquake. There would be no impact.

iv) Landslides?

No Impact—Areas with fractured and steep slopes, where less consolidated or weathered soils overlie bedrock, have a higher risk of landslides. Because the project site sits in a flat community, these risks are non-existent. There would be no impact.

b) Result in substantial soil erosion or the loss of topsoil?

No Impact—A project soil erosion risk level determination identified this project as having a Risk Level 1. There would be no impact.

c) 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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact—The project is not located on a geologic unit or soil that is unstable or that would become unstable as a result of project activities. There would be no impact.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact—The project is not located on expansive soil. There would be no impact.

e) 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?

No Impact—The project would not build septic tanks or alternative waste water disposal systems. There would be no impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact—The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic features because construction activities would not likely affect paleontological resources. There would be no impact.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The following text has been revised since the draft environmental document was circulated:

Less Than Significant Impact—Project construction activities would directly generate trace amounts of greenhouse gas emissions. Given the temporary nature of the construction activities, the impacts from the generation of greenhouse gases would be less than significant. See Section 2.4 Construction Impacts, Air Quality, for further information on this topic.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The following text has been revised since the draft environmental document was circulated:

Less Than Significant Impact—While the project would result in greenhouse gas emissions during construction, it is expected that the project would not result in any increase in operational greenhouse gas emissions because it would not increase vehicle miles traveled once the project opens to traffic. With implementation of construction greenhouse gas-reduction measures, the impacts would be less than significant. See Section 3.3, Climate Change, for further information on this topic.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact—Caltrans' Standard Specifications and Provisions would be enforced to safely dispose of and/or transport hazardous materials without causing risk to the public, workers, or the environment. Please refer to Section 2.2.2 Hazardous Waste and Materials for information concerning the transport, use, and disposal of hazardous materials.

b) 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?

No Impact—The records and review of the project area did not identify any hazardous waste sites or issues in the project vicinity. The project would not 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. There would be no impact.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact—The records and review of the project area did not identify any hazardous waste sites or issues in the project vicinity. There are no schools within one-quarter mile of the project area. There would be no impact.

d) 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?

No Impact—The records and review of the project area did not identify any hazardous waste sites or issues in the project vicinity. There would be no impact.

e) 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?

No Impact—The project area is not located within an airport land use plan and would not result in a safety hazard. There would be no impact.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact—The project would not permanently impair adopted emergency response plans or emergency evacuation plans. During construction, traffic may be temporarily diverted to an alternate access route (detour) that may result in a maximum delay of up to 29 minutes. This would result in a less than significant impact. See Section 2.4 Construction Impacts for more information on this topic.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact—The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. There would be no impact.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality?

Less Than Significant Impact—Because the project would rehabilitate and retrofit a bridge over the California Aqueduct, there may be activities during construction that could result in potential changes to water quality. Caltrans would implement best management practices to help eliminate potential negative effects during construction. With the best management practices implemented, this project would not adversely affect water quality in the project area.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact—The project would not impact groundwater supplies or recharge functions in the project area. There would be no impact.

c) 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:

i) Result in substantial erosion or siltation onsite or offsite;

No Impact—The project would not result in substantial erosion or siltation onsite or offsite. There would be no impact.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;

No Impact—The project and construction-related activities would not create or contribute to surface runoff water. There would be no impact.

iii) 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

No Impact—The project and construction-related activities would not create or contribute to runoff water. There would be no impact.

iv) Impede or redirect flood flows?

No Impact—The project and construction-related activities would not impede or redirect flood flows. There would be no impact.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact—The project site is not in a flood hazard, tsunami, or seiche zone. There would be no impact.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—The project and construction-related activities would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. There would be no impact.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—There are no communities within 2 miles of the project site. The project would not physically divide an established community. There would be no impact.

b) 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?

No Impact—The project is consistent with the zoning and general plan for the project site, and other plans adopted for the purpose of avoiding or mitigating an environmental effect. There would be no impact.

3.2.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

a) 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?

No Impact—The project would not result in the loss of a known mineral resource because none are known to be located on the project site. There would be no impact.

b) 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?

No Impact—The project would not result in the loss of availability of a locally important mineral resource because the project area is not designated in the Kern County General Plan as a mineral recovery site. There would be no impact.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) 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?

No Impact—The project would not result in an increase in ambient noise levels. There would be no impact.

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact—The project would not generate groundborne vibration or groundborne noise levels. There would be no impact.

c) 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 2 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?

No Impact—The project is not located within an airport land use plan or within 2 miles of an airport, and there are no private airstrips in the project vicinity. The project would not expose people in the project area to excessive noise levels. There would be no impact.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned 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)?

No Impact—The project would rehabilitate and retrofit an existing bridge and would not induce or facilitate growth in the project vicinity or result in substantial population growth in the area. There would be no impact.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—The project would occur on previously disturbed land. The project area does not have any housing nearby and therefore the project would not displace people or housing. There would be no impact.

3.2.15 Public Services

CEQA Significance Determinations for Public Services

a) 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?

No Impact—The project would not require new or physically alter governmental facilities. There would be no impact.

Police protection?

No Impact—The project would not require new or physically alter governmental facilities. There would be no impact.

Schools?

No Impact—The project would not require new or physically alter governmental facilities. There would be no impact.

Parks?

No Impact—The project would not require new or physically alter governmental facilities. There would be no impact.

Other public facilities?

No Impact—The project would not require new or physically altered governmental facilities. There would be no impact.

3.2.16 Recreation

CEQA Significance Determinations for Recreation

a) 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?

No Impact—There are no neighborhood and regional parks or other recreational facilities within a 2-mile radius of the project site. There would be no impact.

b) 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?

No Impact—The project will not require the construction or expansion of recreational facilities. There will be no impact.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact—The project will not conflict with a program plan, ordinance, or policy addressing the circulation system. There will be no impact.

b) Conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

No Impact—The project will not conflict with CEQA Guidelines Section 15064.3, subdivision (b) because the project will not add additional lane miles to the state route and therefore will not induce an increase in vehicle miles traveled. There will be no impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact—The project will not introduce or increase hazards due to a geometric design feature or incompatible uses. There will be no impact.

d) Result in inadequate emergency access?

Less Than Significant Impact—No permanent impacts to emergency access will result from the project. During construction, traffic may be temporarily diverted to an alternative access route (detour) that may result in a minor delay of up to 29 minutes. Nearby local roads, including Old River Road and Copus Road, will be used for emergency services. There will be a less than significant impact to emergency access.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for 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:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

No Impact—Tribal consultation and discussions determined that the project will not affect any tribal cultural resources within the project area. There will be no impact.

b) 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 will consider the significance of the resource to a California Native American tribe.

No Impact—Tribal consultation and discussions determined that the project will not affect any tribal cultural resources within the project area. There will be no impact.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) 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?

Less Than Significant Impact—Utilities that may be affected or relocated by the project convey electricity, communications, and water. Precise utility relocations will be determined in the design phase of project development. All utility relocation work will be handled by the affected utility companies and in a manner to limit service disruptions to customers. The California Aqueduct will require a 48-hour dewatering at the beginning of construction to install the new support columns in the aqueduct liner. Caltrans will work with the Department of Water Resources and other utility providers during the design and construction phases of the project. This will result in a less than significant impact.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact—The project will have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. There will be no impact.

c) 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?

No Impact—The project will result in a determination by the wastewater treatment provider that 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. There will be no impact.

d) 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?

No Impact—The project will not 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. There will be no impact.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—The project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. There would be no impact.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact—The project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The project would maintain an existing facility and would not impair existing emergency response or evacuation plans.

b) 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?

No Impact—The project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. There would be no impact.

c) 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?

No Impact—The project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The project would not require the installation or maintenance of associate infrastructure that may exacerbate fire risk or result in temporary or ongoing environmental impacts. There would be no impact.

d) 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?

No Impact—The project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. The project would not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage concerns. There would be no impact.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) 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?

Less Than Significant Impact—The project would not 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. However, less than significant impacts to habitat for wildlife species may occur as a result of this project. A Letter of Concurrence from the U.S. Fish and Wildlife Service regarding project impacts on these species was received on September 17, 2018. After public circulation and review of the draft environmental document, a revised Biological Assessment was sent to the U.S. Fish and Wildlife Service, and a second Letter of Concurrence was received on August 18, 2022. With avoidance and minimization efforts in place, less than significant impacts are expected. See Section 2.3.2 Animal Species and Section 2.3.3 Threatened and Endangered Species for more information on this topic.

b) 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.)

Less Than Significant Impact—The project would have cumulative impacts to the California Aqueduct because it is anticipated that the current proposed design of the bridge rehabilitation and retrofit would be replicated along the California Aqueduct in the foreseeable future as additional bridges are rehabilitated and retrofitted. Therefore, Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the California Aqueduct. The

Identification and Condition Report will assess the condition of the existing bridges and identify all known alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact—The project does not have environmental effects that would cause substantial adverse effects on human beings. There would be no impact.

3.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity, including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. Carbon dioxide is the most abundant greenhouse gas; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated carbon dioxide.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.3.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source greenhouse gas reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and greenhouse gas emissions reduction at the project level.

The National Environmental Policy Act (42 U.S. Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (Federal Highway Administration 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (Federal Highway Administration, no date). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program based on each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration is responsible for setting greenhouse gas emission standards for new cars and light-duty vehicles to significantly increase

the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence greenhouse gas emissions.

State

California has been innovative and proactive in addressing greenhouse gas emissions and climate change by passing multiple Senate and Assembly bills and executive orders including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California Air Resources Board re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 greenhouse gas reduction goals.

Senate Bill 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under Assembly Bill 32.

Executive Order B-16-12 (March 2012): This order tells State entities under the direction of the Governor, including the California Air Resources Board, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015): This order establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the California Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. Greenhouse gases differ in how much heat each traps in the atmosphere (global warming potential). Carbon dioxide is the most important greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called “carbon dioxide equivalent.” The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide. Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, *Safeguarding California*, every three years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016: This bill codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Senate Bill 1386, Chapter 545, 2016: This bill declared “it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state’s greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

Assembly Bill 134, Chapter 254, 2017: This bill allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743**,** Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state’s goals of reducing greenhouse gas emissions and traffic

related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires the California Air Resources Board to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18 (September 2018): This order sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing greenhouse gas emissions.

Executive Order N-19-19 (September 2019): This order advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce greenhouse gas emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This order also directs the California Air Resources Board to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

Executive Order N-79-20 (September 2020): This order establishes goals for 100 percent of in-state sales of new passenger cars and trucks to be zero-emissions vehicles by 2035, that the state transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible, and that 100 percent of medium- and heavy-duty vehicles in the state be zero-emissions by 2045 where feasible.

3.3.2 Environmental Setting

The project sits along State Route 166 in Kern County. The project crosses the California Aqueduct 2.6 miles east of Old River Road and 5 miles west of Interstate 5 and stretches from post miles 16.6 to 18.2. The area surrounding the project location is zoned for agriculture and is used to grow mostly fruit and nut crops. There are no residences in the project vicinity; the nearest community is about 7 miles east of the project area. The Kern Council of Governments (Kern COG) Regional Transportation Plan/Sustainable Communities Strategy guides transportation development in the project area.

A greenhouse gas emissions inventory estimates the amount of greenhouse gases discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual greenhouse gas emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. The U.S. Environmental Protection Agency is responsible for

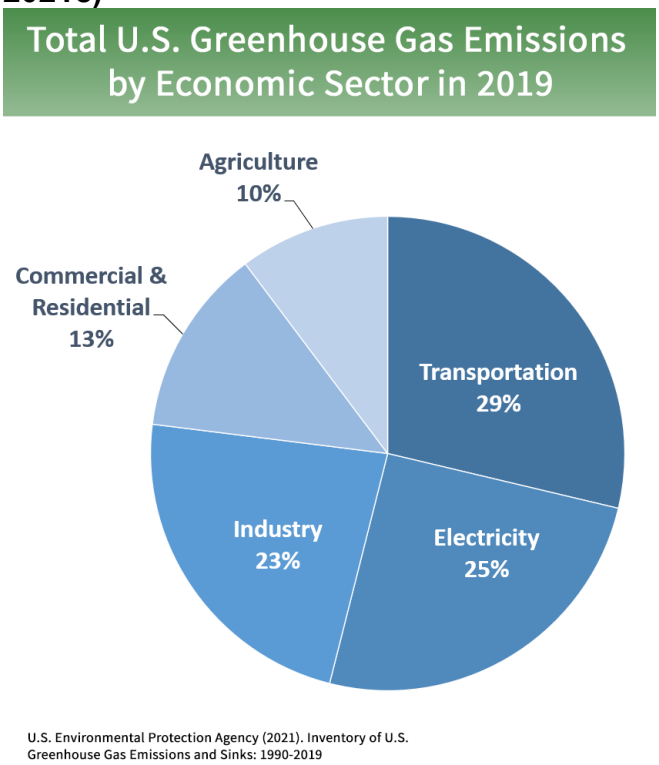
documenting greenhouse gas emissions nationwide, and the California Air Resources Board does so for the state, as required by Health and Safety Code Section 39607.4.

National Greenhouse Gas Inventory

The U.S. Environmental Protection Agency prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gases in the United States, reporting emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. It also accounts for emissions of carbon dioxide that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store carbon dioxide (carbon sequestration).

The 1990-2019 inventory found that overall greenhouse gas emissions were 6,558 million metric tons in 2019, down 1.7 percent from 2018 but up 1.8 percent from 1990 levels. Of these, 80 percent were carbon dioxide, 10 percent were methane, and 7 percent were nitrous oxide; the balance consisted of fluorinated gases. Carbon dioxide emissions in 2019 were 2.2 percent less than in 2018, but 2.8 percent more than in 1990. The transportation sector accounted for 29 percent of U.S. greenhouse gas emissions in 2019 (U.S. EPA 2021a, 2021b). See Figure 3-1.

Figure 3-1 U.S. 2019 Greenhouse Gas Emissions (Source: U.S. EPA 2021c)



State Greenhouse Gas Inventory

The California Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals. The 2020 edition of the greenhouse gas emissions trends from 2000 to 2018. It found total California emissions were 425.3 million metric tons of carbon dioxide equivalent in 2018, 0.8 million metric tons of carbon dioxide equivalent higher than 2017 but 6 million metric tons of carbon dioxide equivalent lower than the statewide 2020 limit of 431 million metric tons of carbon dioxide equivalent. The transportation sector was responsible for 41 percent of total greenhouse gases. Transportation emissions decreased in 2018 compared to the previous year, which is the first year over year decrease since 2013. Overall statewide greenhouse gas emissions declined from 2000 to 2018 despite growth in population and state economic output (ARB 2020). See Figures 3-2 and 3-3.

Figure 3-2 California 2018 Greenhouse Gas Emissions (Source: ARB 2020b)

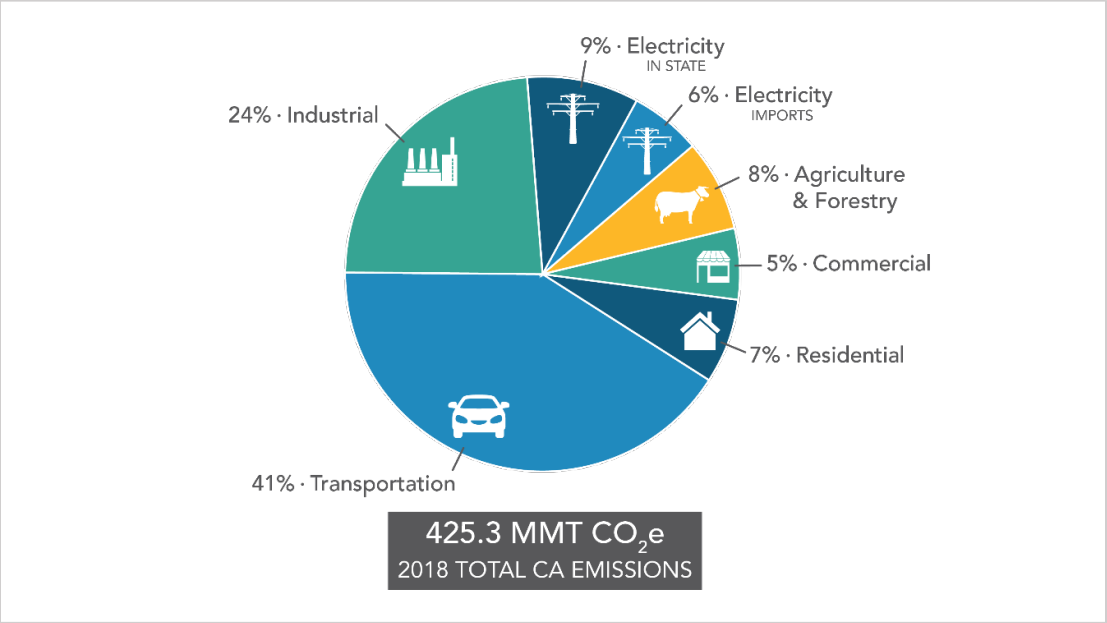
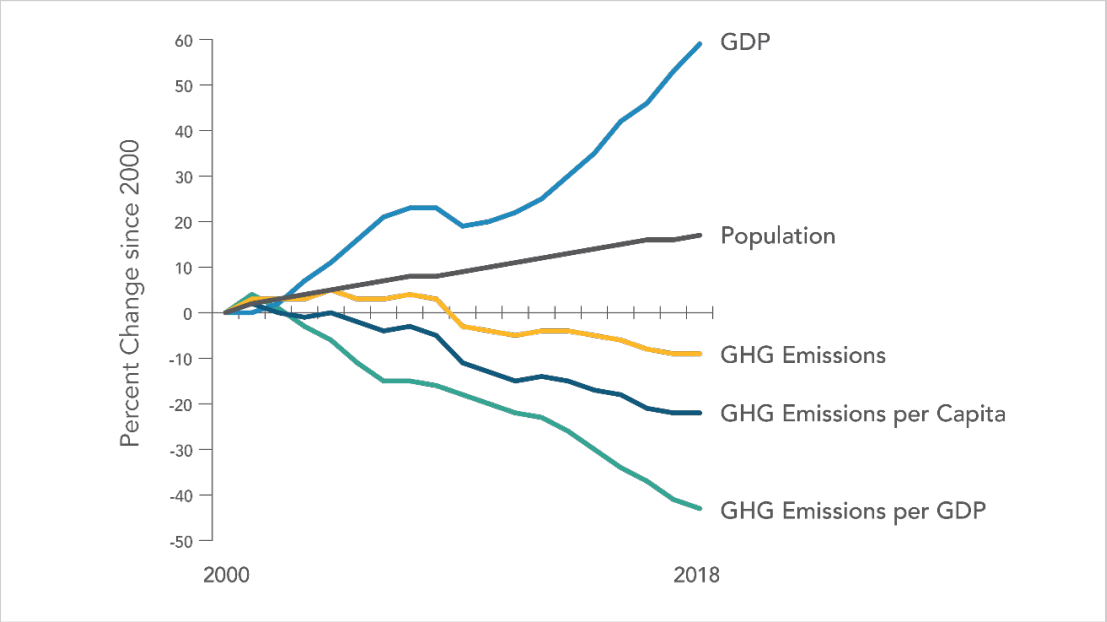


Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000 (Source: ARB 2020b)



Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every five years. The California Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the

2030 target established in Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

The California Air Resources Board sets regional targets for California's 18 Metropolitan Planning Organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy to plan future projects that will cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle and light truck greenhouse gas emissions per person from 2005 levels.

The proposed project is included in the 2018 Kern Council of Governments Regional Transportation Plan/Sustainable Communities Strategy (Kern Council of Governments 2018), which used the Air Resources Board's 2010 regional reduction targets of 5 percent by 2020 and 10 percent by 2035. As of October 1, 2018, however, the regional reduction targets changed to 9 percent by 2020 and 15 percent by 2035 (Air Resources Board 2019c). These new targets are anticipated to be addressed in the 2022 Regional Transportation Plan/Sustainable Communities Strategy.

The 2018 Regional Transportation Plan/Sustainable Communities Strategy (page D-10) identifies measures "Sustainability/Preservation" and "Reliability/Safety/Public Health," which include maintaining system pavement and bridges and improving system reliability, mobility, and safety.

3.3.3 Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the state highway system and those produced during construction. The main greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon emissions is included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public Resources Code, Section 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation versus San Diego Association of Governments (2017) 3 California 5th 497, 512.) In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The proposed project would seismically retrofit and rehabilitate the California Aqueduct Bridge (Bridge No. 50-0323). Once operational, the project would not add additional travel lanes or change roadway capacity or vehicle miles traveled. Therefore, no increase in operational greenhouse gas emissions is expected. While some greenhouse gas emissions during the construction period would be unavoidable, the proposed project, once completed, would not lead to an increase in operational greenhouse gas emissions.

The following text was revised after the public circulation of the draft environmental document: Under Alternative 1, there would be no conversion of working farmland, ruderal grassland, or other working lands that remove carbon dioxide (CO_2) from the atmosphere.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The following carbon dioxide emission calculations and construction durations were updated since the public circulation of the draft environmental document: Carbon dioxide emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool (CAL-CET). The estimated emissions of carbon dioxide from construction equipment would be 148 tons per year over a 4- to 6-month construction period. Operational carbon dioxide emissions generated from passenger vehicles were not estimated because the project is not capacity increasing. However, the proposed detour would add 22 miles of travel for vehicles traveling in the eastbound and westbound directions between Maricopa and Mettler. Operational carbon dioxide emissions generated from passenger vehicles as a result of the detour would be about 1,158 tons of carbon dioxide over a 1-month detour period under the South Alignment Alternative.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all the California Air Resources Board emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. The project will also implement Caltrans standardized measures (such as construction best management practices) that apply to most or all Caltrans projects. Certain common regulations, such as equipment idling restrictions and development and implementation of a traffic control plan that reduce construction vehicle emissions, also help reduce greenhouse gas emissions.

CEQA Conclusion

While the proposed project will result in greenhouse gas emissions during construction, it is expected that the project will not result in any increase in operational greenhouse gas emissions because it would not increase vehicle miles traveled once the project opens to traffic. With implementation of construction greenhouse gas-reduction measures, the impact would be less than significant. Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

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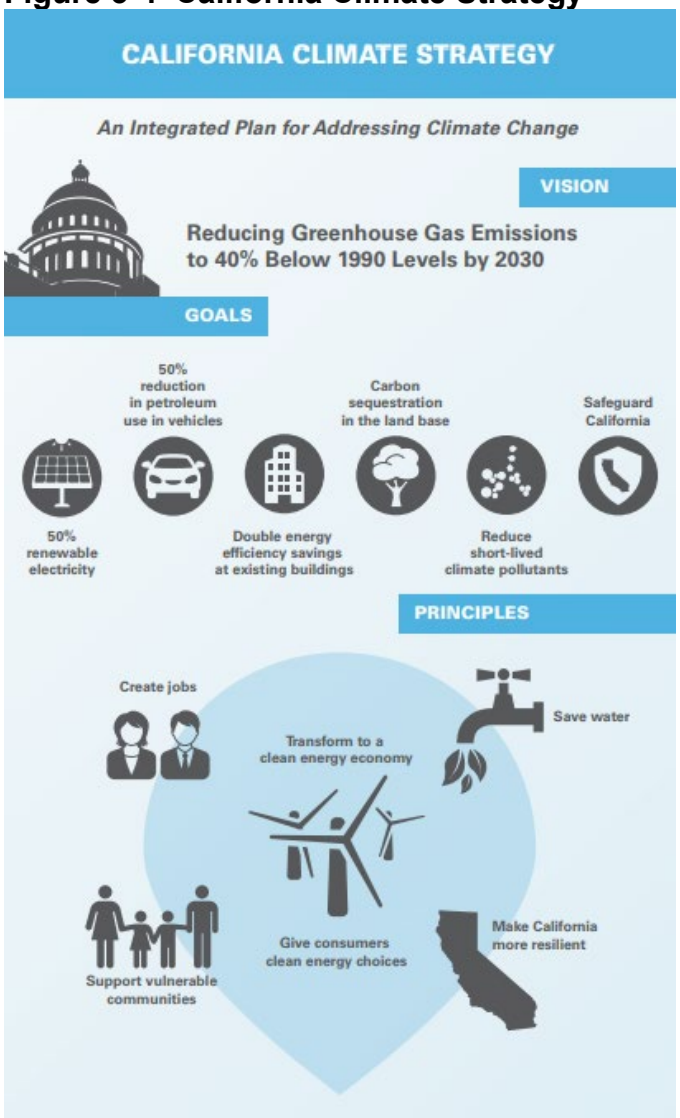
3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets.

Former Governor Edmund G. Brown Jr promoted greenhouse gas reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*. See Figure 3-4.

Figure 3-4 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 40 percent by 2030 (California Environmental Protection Agency 2015).

Senate Bill 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the

atmosphere through biological processes and sequester the carbon in above-ground and below-ground matter.

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It includes instruction to state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged and vulnerable communities. Each agency is to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the State's carbon neutrality goal and build climate resilience.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 32 (2016), set an interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The California Transportation Plan 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide greenhouse gas emissions reduction targets and increase resilience to climate change. It demonstrates how greenhouse gas emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021).

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation

Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Caltrans Strategic Management Plan 2020–24 includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a vehicle miles traveled monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities.

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project:

- Caltrans staff would enhance the environmental training provided for contractor staff by adding a module on greenhouse gas reduction strategies, including limiting equipment idling time as much as possible.
- Incorporate measures to reduce the use of potable water.
- Seek to operate construction equipment with improved fuel efficiency by properly tuning and maintaining equipment, limiting equipment idling time, and using the right-sized equipment for the job.
- Comply with Caltrans Standard Specifications 14-9.02, Air Pollution Control, which would require contractors to comply with all air-pollution

control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

- Develop a Traffic Management Plan to minimize delays.

3.3.5 Adaptation

Reducing greenhouse gas emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every four years, in accordance with the Global Change Research Act of 1990 (15 U.S. Code Chapter 56A Section 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (U.S. Global Change Research Program 2018).

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of the U.S. Department of

Transportation in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. Department of Transportation 2011).

Federal Highway Administration Order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events,* December 15, 2014) established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The Federal Highway Administration has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (Federal Highway Administration 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the "capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience." Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation

and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

Executive Order S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (*Safeguarding California Plan*). The *Safeguarding California Plan* offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

Executive Order S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California—An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This order recognizes that effects of climate change other than sea-level rise also threaten California’s infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

Assembly Bill 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure*—Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence*—Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization*—Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea Level Rise

The project is outside the coastal zone and is not in an area subject to sea-level rise. Therefore, direct impacts to transportation facilities due to a projected sea-level rise are not expected.

Floodplains Analysis

Based on the Floodplain Evaluation Report, this project does not encroach on or impact a floodplain. The California Aqueduct is a concrete-lined canal operated by the California Department of Water Resources. The bridge has deck drains to collect, convey, and discharge stormwater runoff from the new bridge into existing side ditches. The side ditches have capacity to contain two 10-year/24-hour storm events and can also be upgraded in a future project if it became necessary.

The District 6 Caltrans Climate Change Vulnerability Assessment (Caltrans 2018) anticipates less precipitation overall but rain falling in heavier individual events as the climate changes. Analysis found that change in the 100-year storm precipitation depth is likely to increase throughout District 6, indicating heavier rainfall during storms. If the 100-year storm precipitation increases by 5

percent through 2085, the existing ditches are deep and wide enough to handle the additional storm water runoff. The vulnerability mapping shows, however, that in the project area 100-year storm precipitation depth is likely to increase by less than 5 percent through 2085. This suggests that the existing drainage system will be adequate to convey storm flows even as the climate changes.

Wildfire

The project is not in a very high fire hazard severity zone (California Department of Forestry and Fire Protection, 2008). Standard construction specifications for fire prevention and best management practices will minimize the risk of fire starts during construction.

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Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, and Native American coordination. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Agency Coordination

4.1.1 Office of Historic Preservation

April 2018: A Finding of No Adverse Effect without Standard Conditions, which summarizes Caltrans' effects determination for the California Aqueduct and Bridge Number 50-0323, was prepared and sent to the Office of Historic Preservation.

August 28, 2018: The State Historic Preservation Officer formally responded to Caltrans, stating that the State Historic Preservation Officer was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for this project. Caltrans accepted the State Historic Preservation Officer's comments.

August 30, 2018: Caltrans and Office of Historic Preservation staff met to discuss possible ways of avoiding an adverse effect determination by changing design features.

September 18, 2018: Updated visual simulations with design alterations were sent to the Office of Historic Preservation.

September 26, 2018: The Office of Historic Preservation staff verbally indicated that the bridge design would still likely have an adverse effect due to the integrity of materials, design, setting, workmanship and feeling of the proposed new bridge.

October 1, 2018: Caltrans proposed a potential alternative using three horizontal "S" curves to reduce the new bridge height.

October 9, 2018: The Office of Historic Preservation staff confirmed via email that the bridge would still have an adverse effect due to the integrity of

materials, design, setting, workmanship and feeling of the proposed new bridge.

October 18, 2018: The State Historic Preservation Officer agreed with the Office of Historic Preservation staff that the bridge would have an adverse effect due to the integrity of materials, design, setting, workmanship and feeling of the proposed new bridge.

November 8, 2018: Caltrans sent a letter to the State Historic Preservation Officer formally revising the finding to be a Finding of Adverse Effect.

January 29, 2019: A Finding of Adverse Effect under Section 106 was completed for the project. The State Historic Preservation Officer formally responded to Caltrans, concurring with Caltrans' Finding of Adverse Effect for Section 106 for the project.

March 24, 2021: A Supplemental Finding of Adverse Effect under Section 106 was completed for the project and sent to the State Historic Preservation Officer.

June 9, 2021: The State Historic Preservation Officer formally responded to Caltrans, concurring with Caltrans' Supplemental Finding of Adverse Effect for Section 106 for the project.

The following two paragraphs have been added since the draft environmental document was circulated.

August 11, 2022: A Second Supplemental Finding of Adverse Effect under Section 106 was completed for the project and sent to the State Historic Preservation Officer.

August 11, 2022: In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed.

4.1.2 U.S. Fish and Wildlife Service

June 18, 2018: Caltrans sent a Biological Assessment to the U.S. Fish and Wildlife Service. The Biological Assessment concluded that the project may affect, but is not likely to adversely affect, the federally endangered species listed in Section 2.3.3.

September 17, 2018: Caltrans received a Letter of Concurrence from the U.S. Fish and Wildlife Service.

The following two paragraphs have been added since the draft environmental document was circulated.

November 10, 2021: Caltrans sent a second Biological Assessment to the U.S. Fish and Wildlife Service. The Biological Assessment concluded that the project may affect, but is not likely to adversely affect, the federally endangered species listed in Section 2.3.3.

February 23, 2022: An Updated species list was obtained using the Information for Planning and Conservation (IPaC) website.

May 16, 2022: Caltrans informed the U.S. Fish and Wildlife Service that there have been changes in the project scope.

July 21, 2022: Caltrans sent a third Biological Assessment to the U.S. Fish and Wildlife Service.

August 18, 2022: Caltrans received a Letter of Concurrence from the U.S. Fish and Wildlife Service.

4.1.3 Department of Water Resources

October 19, 2017: Caltrans Project Development Team staff met with Department of Water Resources staff at the California Department of Water Resources 1416 9th Street office in Sacramento. The purpose of the meeting was to discuss the project status, discuss the proposed alternatives to repair the bridge in the channel, and discuss the alternative option of constructing a new bridge on State Route 166 at the aqueduct. At the meeting, it was determined that no pier repair work would be allowed inside the aqueduct. This determination introduced design constraints to the project.

The following six paragraphs have been added since the draft environmental document was circulated.

September 10, 2021: The Department of Water Resources emailed the Caltrans Project Manager regarding the public review of the draft environmental document. Its email requested that Department of Water Resources staff be involved in the design efforts of the project and that its initial comment letter received August 8, 2018, remains valid. The details of the Department of Water Resources' comment and the Caltrans response can be found below under Comments.

October 12, 2021: Caltrans Project Development Team staff met with Department of Water Resources staff via WebEx (an internet online meeting system) to discuss Caltrans' proposals for maintenance access roads to the California Aqueduct from State Route 166.

October 26, 2021: Caltrans Project Development Team staff met with Department of Water Resources staff at the project site to further discuss maintenance access roads, assess apparent feasibility, and clarify the

Department of Water Resources' requests and requirements for access to the California Aqueduct.

May 2, 2022: Caltrans met with the Department of Water Resources to further discuss the feasibility of reverting the project back to a rehabilitation and seismic retrofit project.

May 5, 2022: A follow-up letter was sent to the Department of Water Resources, requesting approval to move forward with the seismic retrofit and rehabilitation strategy.

May 12, 2022: Caltrans received a response letter stating the Department of Water Resources' acceptance of the seismic retrofit and rehabilitation strategy, provided Caltrans remains committed to working closely with the Department of Water Resources in the design and construction phase of the project. A 48-hour dewatering limit is included in this agreement between the Department of Water Resources and Caltrans.

4.1.4 Wheeler Ridge-Maricopa Water Storage District

June 15, 2017 and July 31, 2017: Mr. Eric McDaris, Engineering Technician/ Safety Representative of the Wheeler Ridge-Maricopa Water Storage District was contacted via letter with right-of-way requests for permits to enter property.

August 4, 2017: Mr. McDaris contacted the environmental planner regarding the proposed right-of-way acquisition and permits to enter.

August 4, 2017: Details of the proposed right-of-way acquisition and permits to enter were provided to Mr. McDaris by Caltrans Project Manager Mr. Paul Pineda by email.

4.1.5 Emergency Services

May 31, 2018: Caltrans contacted Hall Ambulance Service, which operates an ambulance service in the project area. Hall Ambulance Service requested that Caltrans mail any information and the environmental document to Hall Ambulance Service.

May 8, 2018: Caltrans contacted the Kern County Fire Department via phone to explain the project and the proposed detour. The Kern County Fire Department had no comments, but requested that the environmental document and any additional information be mailed to Kern County Fire Department, Attention: Fire Marshall Derek Tisinger, 2820 M Street, Bakersfield, California 93301.

March 7, 2018: Caltrans contacted the California Highway Patrol via phone to inform emergency services of the detour of motorists from State Route 166 to

Old River Road and Copus Road, and to provide the expected construction date and duration. The California Highway Patrol informed Caltrans that the Buttonwillow station is responsible for traffic enforcement on State Route 166 and requested information be sent to that office at 29449 Stockdale Highway, Bakersfield, California 93314.

The following two paragraphs have been added since the draft environmental document was circulated.

August 13, 2021: A comment was received via email from the California Highway Patrol regarding the proposed detour for the project. The Caltrans Project Manager answered those concerns via email the same day. The details of the discussion can be found below under Comments.

September 4, 2021: A comment was received via mail from the California Highway Patrol. The details of the letter and a response can be found below under Comments.

4.1.6 Maricopa School District

May 11, 2018: Caltrans contacted the Maricopa School District Maintenance and Transportation Director, Mr. Darwin Ellis. Mr. Ellis was informed of the proposed project, its estimated construction time, and detour information. Mr. Ellis stated that the existing bus routes would not be directly impacted because they do not go over the bridge.

4.1.7 Coordination with Native American Groups

May 23, 2017: Native American consultation and coordination were initiated with a letter sent to the Native American Heritage Commission requesting a search of its files to determine if any sacred sites or traditional cultural properties were known to exist within or near the project area. The letter also requested the names of Native American individuals and group representatives who may be interested in or able to supply information relevant to the project.

May 30, 2017: Ms. Sharaya Souza, Staff Services Analyst of the Native American Heritage Commission, responded to Caltrans by email stating that the commission’s sacred land files found no presence of Native American cultural resources in the immediate project area. The Native American Heritage Commission provided a list of contacts who may be interested in the project as well as recommendations for further tribal consultation.

June 15, 2017: Caltrans Central Region cultural resources staff sent out letters to the 10 individuals on the list provided by the Native American Heritage Commission. Each letter contained the project description, project mapping, and a request for information regarding prehistoric sites, historic

sites, ethnographic land use, and contemporary Native American values in the project area. Ms. Mandy Macias, District 6 Native American Coordinator, reviewed the Native American Heritage Commission list for accuracy. Based on Ms. Macias' professional experience, two Native American consulting parties were added to the list and two were taken off the list that was provided by the Native American Heritage Commission.

September 15, 2017: Mr. Colin Rambo, Cultural Resource Management Technician at Tejon Indian Tribe, contacted Caltrans via email requesting that if Caltrans would proceed with an XPI Geoarchaeological Investigation, the Tejon Indian Tribe would appreciate an opportunity to monitor the excavations. The Tejon Indian Tribe is not presently aware of any undocumented tribal cultural resources anywhere along the State Route 166 corridor. Based on the lack of both known archaeological resources and tribal cultural resources within the architectural study area, Caltrans proceeded with the XPI Geoarchaeological Investigations without tribal monitoring. A follow-up email with both the Architectural Study Report and preliminary results for the XPI Geoarchaeological Investigations was forwarded to Mr. Rambo on March 27, 2018. The Tejon Indian Tribe replied via email on March 28, 2018 that "they appreciate Caltrans' efforts to keep them apprised of the status of the project. Given the results of the testing, they do not have any additional questions or concerns."

July 15, 2020: An additional request for information was emailed to the Native American Heritage Commission on July 15, 2020. The Native American Heritage Commission responded on the same day via email and indicated that the Sacred Lands File record search remained negative for the entire project area. The Native American Heritage Commission provided the same list of contacts who may be interested in the proposed project from 2018 with two additional contacts.

July 20, 2020: A second tribal notification letter was mailed out by Caltrans Central Region cultural staff concerning the now eliminated Northern Alignment. Eighteen tribal representatives representing 13 tribes were notified. The Big Pine Paiute Tribe of the Owens Valley, the San Fernando Band of Mission Indians, and the San Manuel Band of Mission Indians were omitted from consultation for this undertaking due to the geographical distance these groups are from the project location.

January 6, 2021: A third tribal notification was mailed by Caltrans Central Region cultural staff after the Northern Alignment was dropped and replaced by the Southern Alignment and Alternative 8. Twelve tribal representatives were notified of the project changes. Email notifications were received from the Fernandeño Tataviam Band of Mission Indians and the yak tityu tityu yak tiłhini - Northern Chumash Tribes requesting that Caltrans defer their consultation to the Tejon Indian Tribe of California. A draft of the Supplemental Archaeological Survey Report was provided to Mr. Colin

Rambo of the Tejon Indian Tribe for review on February 4, 2021. As of May 6, 2021, the Tejon Indian Tribe has provided no comment regarding the negative findings in the Supplemental Archaeological Survey Report.

The following heading and paragraph as well as the Comments section and the related information through the end of this chapter have been added since the draft environmental document was circulated.

4.1.8 U.S. Department of the Interior

July 26, 2021: Caltrans submitted the draft Initial Study/Environmental Assessment with Section 4(f) Evaluation to the U.S. Department of the Interior for review and comment. The U.S. Department of the Interior was given 45 days to provide comments on the project. No comments were received during the 45-day comment period, and no comments were received in the 15 days following the comment period. Therefore, Caltrans is assuming a lack of objection to the draft Initial Study/Environmental Assessment with Section 4(f) Evaluation.

4.2 Comments

This section contains the comments received during the public circulation and comment period from July 26, 2021, to September 9, 2021, retyped for readability. The comments are stated verbatim as submitted, with acronyms, abbreviations, and any original grammatical or typographical errors included. A Caltrans response follows the comments presented. Copies of the original comment letters and documents can be found in Volume 2 of this document.

4.2.1 Public Outreach and Notification

A public notice was posted in *The Bakersfield Californian* on July 26, 2021. A public notice in Spanish was posted in *El Popular* on July 30, 2021. All newspaper publications stated the public comment period ran from July 26, 2021, to September 9, 2021, and offered the public an opportunity to request a virtual public meeting. There were no requests for a virtual public meeting during the public circulation period.

4.2.2 Comments Received

Five comments were received—one from a member of the public (Jackson Hurst), two from the California Highway Patrol, one from the California Department of Fish and Wildlife, and one from the California Department of Water Resources. A Caltrans response follows each comment.

Comments from Jackson Hurst

Comment 1:

August 4, 2021

From: Jackson Hurst <ghostlightmater@yahoo.com>
Sent: Wednesday, August 4, 2021 12:56 PM
To: Friesen, Scott M@DOT <scott.friesen@dot.ca.gov>
Subject: California Aqueduct Bridge Replacement

Hi i would like to sign up for project updates and be added to the mailing list for the California Aqueduct Bridge Replacement Project. My mailing address is 4216 Cornell Crossing, Kennesaw, Georgia 30144.

sent from ghostlightmater@yahoo.com

Response to comment 1:

Thank you for your interest in the California Aqueduct Bridge Replacement Project. You have been added to the project mailing list.

Comment 2:

August 4, 2021

From: Jackson Hurst <ghostlightmater@yahoo.com>
Sent: Wednesday, August 4, 2021 1:12 PM
To: Vespermann, Juergen@DOT <juergen.vespermann@dot.ca.gov>
Subject: California Aqueduct Bridge Replacement Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment and Draft Section 4(f) Evaluation Public Comment

Name - Jackson Hurst
Address - 4216 Cornell Crossing, Kennesaw, Georgia 30144

Comment - I have reviewed the Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment and Draft Section 4F Evaluation Document for the California Aqueduct Bridge Replacement Project. I agree that the bridge needs to be replaced especially since the bridge piers are settling into the ground which could prove disastrous if there is an 7.0 earthquake or greater resulting from the San Andreas Fault. Regarding the alternative's for the bridge replacement the alternative that I support is the South Alignment Alternative because this alternative will result in a shorter construction timeframe.

sent from ghostlightmater@yahoo.com

Response to comment 2:

From: Vespermann, Juergen@DOT
Sent: Wednesday, August 4, 2021 1:39 PM
To: Jackson Hurst <ghostlightmater@yahoo.com>
Subject: RE: California Aqueduct Bridge Replacement Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment and Draft Section 4(f) Evaluation Public Comment

Thank you for your interest in this bridge replacement project. We appreciate you taking the time to review the environmental document.

Juergen Vespermann
Senior Environmental Planner
Southern San Joaquin Valley Environmental Office
Half Dome Branch
Cell Phone: (559) 832 0051

New address:
2015 East Shields Avenue, Suite 100
Fresno, CA 93726

Comment from Delia Grijalva, Department of Water Resources

Comment 1:

September 10, 2021

From: Grijalva, Delia@DWR <Delia.Grijalva@water.ca.gov>
Sent: Friday, September 10, 2021 9:16 AM
To: Friesen, Scott M@DOT <scott.friesen@dot.ca.gov>
Subject: RE: Notice of Availability - California Aqueduct Bridge Replacement Project

Hi Scott,

I did mention to them that comments were due yesterday. Let me follow up to see if there was anything to add. I do have this letter from 2018. Hopefully CalTrans has already seen this. based on our phone conversation, I think you have.

Thanks,

Please note this office is working remotely due to the COVID-19 pandemic.

Delia Grijalva
Senior Right of Way Agent
Encroachment Permit Unit Manager
Department of Water Resources
Division of Engineering--Real Estate Branch
1416 9th Street, Room 425
Sacramento, CA 95814

P (916) 657-4400 (direct office line)
C New number effective 7/21/2021 (916) 621-8646
F (916) 653-9405
Delia.Grijalva@water.ca.gov

Attached Comment Letter:

August 9, 2018

Mr. Richard Putler
California Department of Transportation, District 6 855 M Street, Suite 200
Fresno, California 93721-2716

Initial Study/Negative Declaration by California Department of Transportation, District 6, for new bridge at the State Highway 166 crossing over California Aqueduct, Kern County, San Joaquin Field Division, SCH 2018071022

Dear Mr. Putler:

Thank you for the opportunity to review and comment on the Initial Study/Negative Declaration for the proposed construction of a new bridge replacing the existing State Route 166 bridge over the California Aqueduct, part of the Department of Water Resources (DWR) State Water Project. The proposed project is located at Aqueduct Milepost 272.53 approximately 20 miles southeast of Bakersfield.

The proposed project lies within a subsidence zone that DWR has been monitoring closely. Any new bridge design must accommodate future DWR subsidence remediation construction to ensure that adequate vertical clearance between the top of the Aqueduct liner and the soffit, or bottom of box girder, is provided. In addition to clearance requirements, Pier construction in the aqueduct is not allowed. New crossings shall be "Free Span" design. We encourage Caltrans to work closely with DWR on the design of the new bridge. Caltrans will also be required to submit an Encroachment Permit/Review application to DWR prior to the start of any construction. The timing and construction methods for the new bridge, timing and methods for demolition of the existing bridge, and potential impact to the aqueduct liner shall be reviewed and approved by DWR prior to construction. Information on obtaining an Encroachment Permit from DWR can be viewed at:

https://water.ca.gov/Work-With-Us/Rea-lEstate/Encroachment-Permits

Please provide DWR with a copy of any subsequent environmental documentation when it becomes available for public review. Any future correspondence relating to this project should be sent to:

Leroy Ellinghouse, Chief
SWP Right-of-Way Management Section Division of Operations and Maintenance Department of Water Resources
1416 Ninth Street, Room 641-1
Sacramento, California 95814

In addition, please continue to keep DWR informed of any future actions with respect to your project. If you have any questions, please contact Scott Williams at (916) 563-5746 or Leroy Ellinghouse of my staff at (916) 563-7168.

Sincerely,

Dale Brown, Chief
Project Management Office
Division of Operations and Maintenance

cc: Sheree Edwards, 631-7
Gerry Snow, 604-8
Darren Choyce, SJFD

Mohammed Mohammed, SJFD
Nadelle Gayou, 901 P Street
Don Walker, 620-2

Response to comment 1:

From: Friesen, Scott M@DOT <scott.friesen@dot.ca.gov>
Sent: Friday, September 10, 2021 10:05 AM
To: Grijalva, Delia@DWR <Delia.Grijalva@water.ca.gov>
Subject: RE: Notice of Availability - California Aqueduct Bridge Replacement Project

Thanks for sending Delia: I know subsidence has been considered as we do have a cushion of five feet between the bottom of the new structure and top of existing liner and we're aware of no pier construction in liner requirement. The other items have also been discussed but I will pass along to team again. Yeah, just let us know if there is anything to be added. Have a good weekend!

Scott Friesen
District 6 Project Manager
Cell 559-960-2238.

Comment 2:

September 10, 2021

From: Grijalva, Delia@DWR <Delia.Grijalva@water.ca.gov>
Sent: Friday, September 10, 2021 4:23 PM
To: Friesen, Scott M@DOT <scott.friesen@dot.ca.gov>
Subject: RE: Notice of Availability - California Aqueduct Bridge Replacement Project

Hello Scott,

There are no additional comments. I would just like to reiterate that DWR wants to participate in the PDT meetings and the design efforts. While DWR will not comment on the bridge design per se, DWR will comment on locations and depths of abutments, proximity to the canal, and other items that may affect the DWR facilities. In an effort to keep your project on track, I would suggest that you seek DWR input early in the design phase so that issues can be addressed prior to a 90% plan submittal.

Thanks,

Please note this office is working remotely due to the COVID-19 pandemic.

Delia Grijalva
Senior Right of Way Agent
Encroachment Permit Unit Manager
Department of Water Resources
Division of Engineering--Real Estate Branch
1416 9th Street, Room 425
Sacramento, CA 95814

P (916) 657-4400 (direct office line)
C New number effective 7/21/2021 (916) 621-8646
F (916) 653-9405
Delia.Grijalva@water.ca.gov

Response to comment 2:

Thank you for your comments. Caltrans will continue to involve the Department of Water Resources as the project progresses and will further coordinate during the design efforts of the project.

Comment from Mike Karr, California Highway Patrol

Comment 1:

August 13, 2021

An email was received from Sergeant Mike Karr from the California Highway Patrol, Fort Tejon area. This comment is not included in the final environmental document because it contained a confidentiality notice. Therefore, the comment will remain confidential as to not violate the Electronic Communications Privacy Act.

Response to comment 1:

Caltrans responded via email to the comment on August 13, 2021.

Comment from V. A. Pagano, California Highway Patrol

Comment 1:

September 7, 2021

From: Pagano, Vincent@CHP <VPagano@chp.ca.gov>
Sent: Tuesday, September 7, 2021 12:32 PM
To: Vespermann, Juergen@DOT <juergen.vespermann@dot.ca.gov>
Cc: CHP-40AADesk <40AADesk@chp.ca.gov>; Singer, David@CHP <DSinger@chp.ca.gov>; state.clearinghouse@opr.ca.gov; Dobson, Denise@CHP <DDobson@chp.ca.gov>; Karr, Michael@CHP <MKarr@chp.ca.gov>
Subject: 063 – BE – Environmental Document Review – SCH #2021070527

Good afternoon, Mr. Vespermann:

Please find attached our response to SCH #2021070527, if you need anything further please let me know.

Sincerely,

Vince
V. A. PAGANO, Lieutenant
Commander

California Highway Patrol
Fort Tejon Area (430)
1033 Lebec Road
Lebec, CA 93243
(661) 248-6655

Attached Comment Letter:

September 4, 2021

File No.: 430.15934.18721.S GT/2I-71

Mr. Juergen Vespermann]
Caltrans District 6 - Central Region Environmental 2015 East Shields Avenue, Suite I 00
Fresno, CA 93726

Subject: SCH #2021070527

Dear Mr. Vespermann:

The California Highway Patrol (CHP) Fort Tejon Area recently received a "Notice of Completion" of the environmental document for the proposed California Aqueduct Bridge Replacement Project for State Clearinghouse (SCH) #2021070527. After a thorough review, we have the following recommendations for this project which could help traffic congestion and public safety.

The CHP Fort Tejon Area has several recommendations related to the proposed alternate route of travel to mitigate possible traffic collisions. First, we recommend the Kern County Fire Department, Kern County Sheriff's Office and local ambulance service companies be made aware of all closures and alternate routes well in advance for response planning for emergency calls of service. Second, we recommend State Route 166 (SR- 166) be closed to all traffic, except local businesses and residents, between Old River Road and Interstate 5 (1-5). All northbound traffic on 1-5 to SR-166 should be detoured to Copus Road and all southbound traffic on 1-5 to SR-166 should be detoured to Old River Road. Lastly, additional lighted signage should be installed at the intersection of Old River Road and Copus Road for the duration of the project to mitigate any potential traffic collisions. Should you have any quest ions regarding these recommendations, please contact me or Sergeant Mike Karr at (661) 248-6655.

Sincerely,

V. A. PAGANO, Lieutenant
Commander
Fort Tejon Area

Cc: Special Projects Section
Central Division

Response to comment 1:

Thank you for your comments. We appreciate you taking the time to review the environmental document. The Kern County Fire Department, Kern County Sheriff's Office and local ambulance service companies are included in the project mailing list, and public notices were delivered during the public circulation of the draft environmental document. In addition, Copus Road and Old River Road were originally planned as the detour for the project. This route would have required several improvements prior to the construction of the bridge, including shoulder backing that may have resulted in impacts to the biological environment. During a value analysis of the project conducted in 2019, the current project detour was presented as Value Analysis Alternative 1.2 and showed improvements to the project regarding cost, time, and risk. Old River Road and Copus Road will still be open to the public and to emergency vehicles throughout construction. Furthermore, Alternative 1A

has been identified as the preferred alternative and would require only a 1-month-long detour. Your comment regarding the need for additional lighted signage has also been noted by the project team and will be taken into consideration as the traffic plans are developed.

Comment from California Department of Fish and Wildlife

Comment Letter:

September 1, 2021

Juergen Vespermann
California Department of Transportation, District 6
2015 East Shields Avenue
Fresno, California 93726

Subject: State Route 166 California Aqueduct Bridge Replacement Project (Project) Initial Study/proposed Mitigated Negative Declaration SCH No.: 2021070527

Dear Mr. Vespermann:

The California Department of Fish and Wildlife (CDFW) received a proposed Mitigated Negative Declaration (MND) and its supporting Initial Study (IS) from the California Department of Transportation (Caltrans) for the Project pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife.

Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Id., § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

Proponent: Caltrans

Objective: The objective of the Project is to replace an existing two-lane bridge which conveys SR 166 traffic over the California Aqueduct in western Kern County. The Project will also involve work on the roadway approaching and departing the bridge.

Location: The Project will occur within the SR 166 right-of-way approximately seven miles west of the community of Mettler, in western Kern County, and is centered near latitude 35.058995, longitude -119.092696.

Timeframe: Project is expected to start in 2023 and take no more than two years to complete.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist Caltrans in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

CDFW offers the following comments to assist Caltrans in adequately identifying and sufficiently reducing to less-than-significant the potentially significant, direct and indirect Project-related impacts to fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

Currently, the proposed MND indicates that the Project-related impacts to Biological Resources would be less-than-significant with implementation of specific avoidance and minimization efforts. However, as currently drafted, it is unclear: 1) whether some of the species-specific measures proposed in the IS sufficiently reduce to less-than-significant the potential Project-related effects to those species, and 2) how Caltrans came to the conclusion that

there will be no effects to two species CDFW considers potentially present in the vicinity of the Project area.

In particular, Caltrans: 1) concludes there will be less-than-significant effects to the State endangered (and fully protected), and federally endangered blunt-nosed leopard lizard (Gambelia sila) with implementation of proposed avoidance and minimization measures; and 2) provides no analysis with regard to the potential occurrence, or Project-related impacts to, either the State threatened San Joaquin antelope squirrel (Ammospermophilus nelsoni) or the rare and endemic Crotch bumble bee (Bombus crotchii) a Species of Greatest Conservation Need (SGCN) in California (CDFW 2015). CDFW does not agree and will suggest measures to survey for and avoid Project- related impacts on these species, thereby reducing to less-than-significant the Project- related effect to them. CDFW will also provide herein a path forward for Caltrans in the event avoidance of either of, or all of the three species is not feasible.

Environmental Setting and Related Impact

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 CDFW or the United States Fish and Wildlife Service (USFWS)?

COMMENT 1: Blunt-Nosed Leopard Lizard (BNLL)

Issue: The Project activities will involve varying degrees of ground disturbance and the staging and laydown of equipment and materials along the State Route 166 right- of-way approaching and departing the bridge. Caltrans proposes to: have a biological monitor on-site during initial ground disturbing activities monitoring for individual BNLL, and to limit the speed of vehicles and equipment within the construction area. Caltrans considers these measures sufficient to reduce to less- than-significant the Project-related impacts to BNLL. However, Caltrans does not propose surveying for BNLL at, or in the suitable habitat beyond the Project area prior to commencing Project related activities. Further, Caltrans does not propose consulting with CDFW and/or the USFWS in the event individual BNLL are detected.

Specific Impacts: While CDFW agrees with Caltrans' plan to have a biological monitor present during initial ground disturbing activities and to limit speeds through the Project area, CDFW advises the IS/MND require protocol level surveys be conducted no more than one year prior to commencing Project activities. Further, CDFW recommends the IS/MND require Caltrans to consult with CDFW and the USFWS for feasible avoidance of the species in the event individual BNLL are detected during these surveys.

Evidence impact would be significant: Habitat loss resulting from agricultural, urban, and industrial development is the primary threat to BNLL. Very little suitable habitat for this species remains along the western floor of the San Joaquin Valley. The range for BNLL now consists of scattered parcels of undeveloped land within the valley floor and the foothills of the Coast Range (USFWS 1998). As the aqueduct levy appears to provide connectivity between the Project area and known occupied BNLL habitat southeast of the Project area (CDFW 2021), BNLL could continue to occupy ruderal areas within and adjoining the Project area and the Project-related ground disturbance in these areas could result in significant effects on the species.

Recommended Potentially Feasible Avoidance, Minimization, and Mitigation Measure: Because BNLL may occur in the vicinity of the Project footprint and because suitable burrows could be present outside the Project footprint but sufficiently near the Project footprint to be affected by the Project-related activities, CDFW recommends the following edits to the BNLL avoidance, minimization, and mitigation measure section of the IS. Further, CDFW recommends these revised measures be made conditions of Project approval.

Recommended Edits to Avoidance, Minimization, and/or Mitigation Measures for BNLL on page 58 of the IS.

If suitable habitat is present at or within 50 feet of the Project area, CDFW recommends conducting surveys in accordance with the “Approved Survey Methodology for the Blunt-nosed Leopard Lizard” (CDFW 2019) prior to initiating any vegetation- or ground-disturbance activities. This survey protocol, designed to optimize BNLL detectability, reasonably assures CDFW that ground disturbance will not result in take of this fully protected species.

CDFW advises completion of BNLL surveys no more than one year prior to initiation of ground disturbance. Please note that protocol-level surveys must be conducted on multiple dates during late spring, summer, and fall and that within these time periods there are specific protocol-level date, temperature, and time parameters which must be adhered to. As a result, protocol-level surveys for BNLL are not synonymous with 30-day “preconstruction surveys” often recommended for other wildlife species. In addition, the BNLL protocol specifies different survey effort requirements based on whether the disturbance results from maintenance activities or if the disturbance results in habitat removal (CDFW 2019).

COMMENT 2: San Joaquin Antelope Squirrel (SJAS)

Issue: SJAS are known to have historically occurred in the general vicinity of the Project area. While much of the land on both sides of the Project site exists as irrigated agriculture, there are discreet areas adjoining the Project site which persist as ruderal grasslands. CDFW recommends Caltrans conduct an assessment of these ruderal areas adjoining the Project area for

potentially suitable SJAS habitat. If suitable SJAS habitat exists in areas of planned Project-related ground disturbance, equipment staging, or materials laydown, burrows in these areas would have to be completely avoided by a minimum of 50 feet in order to reduce to less-than- significant the Project-related effect to the species.

Specific Impacts: Without a determination with respect to the presence or absence of even marginal SJAS habitat at and adjoining the Project area, CDFW cannot concur that the Project-related effects to the species are less-than-significant. SJAS spend time underground in burrows which extend as far as 50 feet from a burrow opening and unless those burrow openings are avoided by 50 feet, Project-related ground disturbance can result in take of the species through burrow chamber collapse, entrapment, etc. In the IS, Caltrans does not address the potential for the presence of the species at or near the Project area.

Evidence impact would be significant: Habitat loss resulting from agricultural conversion and development is the primary threat to SJAS. SJAS could continue to occupy ruderal areas within and adjoining portions of the Project area and Project- related ground disturbance in these areas could result in significant effects to the species.

Recommended Potentially Feasible Avoidance, Minimization, and Mitigation Measure: Because suitable SJAS habitat may be present in the vicinity of at least portions of the Project area, CDFW recommends the following measure be added to ensure that effects to the species will be less-than-significant and completely avoided. Further, CDFW recommends these measures be made conditions of Project approval.

Recommended addition of Avoidance, Minimization, and/or Minimization Measures for SJAS in the IS.

In order to determine if SJAS occupy ruderal parts of the right-of-way or adjoining lands, CDFW recommends Caltrans revise the IS to include plans to assess whether ruderal lands within or adjoining (within 50 feet) the right-of-way contain suitable habitat elements (small mammal burrows) that constitute suitable habitat for SJAS. If not, this should be addressed in the IS and no further measures would be needed. But if suitable habitat is present at or within 50 feet of the right-of-way, and suitable burrows (evidenced by openings within 50 feet) cannot be avoided, CDFW recommends the IS include a measure requiring that a qualified biologist conduct focused daytime visual surveys for SJAS using line transects with 10- to 30-meter spacing of Project areas and a 50-foot buffer around those areas. CDFW further advises that these surveys be conducted between April 1 and September 20, during daytime temperatures between 68° and 86° F (CDFG 1990), to maximize detectability, in advance of commencing Project activities. If no individuals are detected during these surveys, Caltrans may in fact be able to accomplish the

Project avoiding the species and significant effects to the species. However, if SJAS are found to occupy ruderal areas at or within 50 feet of the right-of-way, the Project would have the potential to result in significant effects to the species unless burrow openings could be avoided by 50 feet. If this avoidance is not feasible, CDFW recommends Caltrans propose consultation with CDFW in the revised IS. Caltrans may need to seek and obtain incidental take coverage under section 2081 subdivision (b) of Fish and Game Code for Project-related take of SJAS.

COMMENT 3: Crotch Bumble Bee (CBB)

Issue: CBB have been documented to occur within areas of suitable habitat within the Project vicinity (CDFW 2021). Suitable CBB habitat includes areas of grasslands and upland scrub that contain requisite habitat elements, such as small mammal burrows. CBB primarily nest in late February through late October underground in abandoned small mammal burrows, but may also nest under perennial bunch grasses or thatched annual grasses, under brush piles, in old bird nests, and in dead trees or hollow logs (Williams et al. 2014; Hatfield et al. 2015). Overwintering sites utilized by CBB mated queens include soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014). Therefore, potential ground disturbance and vegetation removal associated with Project implementation may significantly impact local CBB populations.

While much of the land on both sides of the Project site exists as irrigated agriculture, there are discreet areas adjoining the Project site which persist as ruderal grasslands. CDFW recommends Caltrans conduct an assessment of these ruderal areas adjoining the Project area for potentially suitable CBB habitat. If suitable CBB habitat exists in areas of planned Project-related ground disturbance, equipment staging, or materials laydown, potential CBB nesting sites in these areas would have to be avoided in order to reduce to less-than-significant the Project-related effect to the species.

Specific Impacts: Without a determination with respect to the presence or absence of CBB habitat at and adjoining the Project area, CDFW cannot concur that the Project-related effects to the species are less-than-significant. CBB nest in underground burrows and in thatch and unless these potential nest sites are avoided, Project-related ground disturbance could result in take of the species. In the IS, Caltrans does not address the potential for the presence of CBB at or near the Project area.

Evidence impact would be significant: CBB was once common throughout most of the central and southern California; however, it now appears to be absent from most of it, especially in the central portion of its historic range within California's Central Valley (Hatfield et al. 2014). Analyses by the Xerces Society et al. (2018) suggest there have been sharp declines in relative abundance by 98% and persistence by 80% over the last ten years.

CBB could continue to occupy ruderal areas within and adjoining portions of the Project area and Project-related ground disturbance in these areas could result in significant effects to the species.

Recommended Potentially Feasible Avoidance, Minimization, and Mitigation Measure: Because suitable CBB habitat may be present in the vicinity of at least portions of the Project area, CDFW recommends the following measure be added to ensure that effects to the species will be less-than-significant and completely avoided. Further, CDFW recommends these measures be made conditions of Project approval.

Recommended addition of Avoidance, Minimization, and/or Minimization Measures for CBB in the IS.

In order to determine if CBB occupy ruderal parts of the right-of-way or adjoining lands, CDFW recommends Caltrans revise the IS to include plans to assess whether ruderal lands within or adjoining the right-of-way constitute suitable habitat for CBB. If not, this should be addressed in the IS and no further measures would be needed. But if suitable habitat is present at or near the right- of-way, and suitable burrows opening or areas of thatch cannot be avoided, CDFW recommends the IS include a measure requiring surveys for CBB in advance of commencing Project activities. If no individuals are detected during these surveys, Caltrans may in fact be able to accomplish the Project avoiding the species and significant effects to the species. However, if CBB are found to occupy ruderal areas at or near the right-of-way, the Project would have the potential to result in significant effects to the species unless the potential nesting sites can be avoided. If this avoidance is not feasible, CDFW recommends Caltrans propose consultation with CDFW in the revised IS.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and

serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the Initial Study and proposed Mitigated Negative Declaration to assist Caltrans in identifying and minimizing to less- than-significant the Project-related impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Steven Hulbert, Senior Environmental Scientist (Specialist) at (559) 575-6415 or at steven.hulbert@wildlife.ca.gov.

Sincerely,

Julie A. Vance
Regional Manager

Attachment 1: Recommended Mitigation and Monitoring Reporting Program

cc: Office of Planning and Research, State Clearinghouse, Sacramento

United States Fish and Wildlife Service
2800 Cottage Way, Suite W-2605
Sacramento, CA 95825

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: State Route 166 California Aqueduct Bridge Replacement Project

SCH No.: 2021070527

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Before Disturbing Soil or Vegetation	[Blank cell]
Mitigation Measure 1: BNLL Habitat Assessment	[Blank cell]
Mitigation Measure 2: BNLL Surveys (if habitat exists)	[Blank cell]
Mitigation Measure 3: SJAS Habitat Assessment	[Blank cell]
Mitigation Measure 4: SJAS Surveys (if habitat exists)	[Blank cell]

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Mitigation Measure 5: CBB Habitat Assessment	[Blank cell]
Mitigation Measure 6: CBB Surveys (if habitat exists)	[Blank cell]
During Soil or Vegetation Disturbance	[Blank cell]
Mitigation Measure 7: BNLL Avoidance	[Blank cell]
Mitigation Measure 8: SJAS Avoidance	[Blank cell]
Mitigation Measure 9: CBB Avoidance	[Blank cell]

Response to comment 1:

During initial surveys, Caltrans investigated the study area and found the soil to be highly compacted, with high levels of gravel. In addition, Caltrans observed the public frequently using the area for recreational activities (mostly fishing), so the project area is highly disturbed. All these factors contributed to the conclusion that this area is heavily disturbed and unsuitable for blunt-nosed leopard lizards. However, due to the recent sighting of the blunt-nosed leopard lizard in the general area, Caltrans will conduct blunt-nosed leopard lizard surveys the year prior to construction.

Response to comment 2:

Where we have legal access to do so, Caltrans will conduct preconstruction focused daytime visual surveys for San Joaquin antelope squirrel burrows within the project action area. If a San Joaquin antelope squirrel burrow is found to be present onsite, then Caltrans will coordinate with the California Department of Fish and Wildlife to incorporate appropriate measures for this species.

Response to comment 3:

Although there have been no recently reported California Natural Diversity Database occurrences of the Crotch bumble bee near the project location, Caltrans will conduct a habitat evaluation prior to construction to determine if suitable habitat is present onsite and if Crotch bumble bee surveys will be needed. If Crotch bumble bees are found in the study area during preconstruction surveys, Caltrans will coordinate with the California Department of Fish and Wildlife to determine appropriate minimization measures.

Chapter 5 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 19 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Updated the Air Quality Memorandum and Noise Compliance Study.

Dane Dettloff, Associate Environmental Planner (Natural Sciences). B.S., Environmental Science—Environmental Resource Management, Oakland University, Rochester, Michigan; 12 years of combined experience in zoological, ecological, biological, veterinary, and environmental sciences. Contribution: Wrote the Revised Natural Environment Study.

Scott Friesen, Project Manager. B.S., Civil Engineering, California State University, Fresno; 28 years of engineering experience, 7 years of project management experience. Contribution: Project Manager.

Kevin Gallo, Landscape Architect. B.L.A., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 14 years of landscape architecture experience. Contribution: Wrote the Scenic Resource Evaluation and Visual Assessment.

Nathaniel Heilmann, Architectural Historian. B.A., History, California State University, Fresno; 5 years of architectural history experience. Contribution: Wrote the Supplemental Finding of Adverse Effect and Memorandum of Agreement.

David Lanner, Associate Environmental Planner (Archaeologist). B.F.A., Art, Utah State University; 27 years of cultural resources experience. Contribution: Wrote the Section 106 Compliance Memorandum for the detour.

Rogerio Leong, Engineering Geologist. B.S., Geology, University of Sao Paulo, Brazil; 19 years of environmental site assessment and investigation experience. Contribution: Revised the Water Quality Assessment Report.

Geo Leyva, Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; 22 years of Transportation Engineering Design, Caltrans; 5 years of Building Structures, Butler Manufacturing Building. Contribution: Project Engineer.

Joseph Llanos, Graphic Designer III. B.A., Graphic Design, California State University, Fresno; 22 years of visual design and public participation experience. Contribution: Created the mapping for the environmental document and technical reports.

Mandy Macias, Associate Environmental Planner (Archaeology). B.A., Anthropology, California State University, Fresno; more than 20 years of California and Great Basin archaeology and cultural resources management experience. Contribution: Prehistoric Archaeology, Native American consultation.

Shawn Ogletree, Engineering Geologist. B.S., Environmental Conservation of Natural Resources, Texas Tech University; B.S., Wildlife/Fisheries Management, Texas Tech University; M.P.H., California State University, Fresno; 15 years of environmental health, environmental technical studies experience; 10 years of biology experience. Contribution: Contribution: Wrote the Revised Hazardous Waste Initial Site Assessment.

Kendra Reif, Associate Environmental Planner (Generalist and Air Quality Specialist). M.P.A., Public Administration, California State University, Fresno; B.A., Political Science, University of Nevada, Reno; 4 years of transportation and environmental planning experience; 3 years of air quality analysis experience. Contribution: Wrote the Individual Section 4(f) Evaluation.

Hussein Senan, Senior Transportation Engineer (Specialist). B.S., Civil Engineering, California State University, Long Beach. Registered Professional Engineer (Civil) in California; 14 years of project management experience, 2 years of construction experience, 7 years of design experience. Contribution: Project Manager.

Chelsea Starr, Associate Environmental Planner. B.S., Biology, University of Washington; 3 years of environmental planning experience. Contribution: Wrote the Initial Study/Environmental Assessment and the Individual Section 4(f) Evaluation.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; more than 30 years of hazardous waste and water quality experience; 18 years of paleontology/geology experience. Contribution: Wrote the Updated Paleontological Investigation Report.

Jennifer H. Taylor, Environmental Office Chief. Double Bachelor of Arts in Political Studies and Organizational Sciences, Pitzer College; more than 30 years of experience in environmental and land use planning. Contribution: Oversight review of the Initial Study/Environmental Assessment and Individual Section 4(f) Evaluation.

Vladimir Timofei, Transportation Engineer. M.S., Civil Engineering, California State University, Fullerton; 19 years of environmental technical studies experience. Contribution: Wrote the Air Quality Memorandum, Noise Compliance Study, and Water Quality Assessment Report.

Sylvère CM Valentin, Associate Environmental Planner (Arch). M.A., Anthropology, Forensic Anthropology Certificate, California State University, Los Angeles; B.A., Business Administration, Minor Asian Pacific Studies, Loyola Marymount University; 21 years of experience in California archaeology and cultural resource management. Contribution: Wrote the Historic Property Survey Report, Archaeological Survey Report, Extended Phase One Report, Supplemental Historic Property Survey Report, and Supplemental Archaeological Survey Report.

Juergen Vespermann, Senior Environmental Planner. Civil Engineering Degree, Fachhochschule Muenster, Germany; more than 20 years of experience in transportation planning and environmental planning. Contribution: Reviewed the Initial Study/Environmental Assessment and Individual Section 4(f) Evaluation.

Chapter 6 Distribution List

Kern County Planning
2700 M Street
Bakersfield, California 93301

USDA (Natural Resources Conservation Service)
Bakersfield Office
5080 California Avenue
Bakersfield, California 93309

U.S. Army Corps of Engineers, South Pacific Division
915 Wilshire Boulevard, Suite 1101
Los Angeles, California 90017

U.S. Fish and Wildlife Service, Region 8
2800 Cottage Way, Room W-2606
Sacramento, California 95825

Beale Memorial Library
701 Truxtun Avenue
Bakersfield, California 93301

California Transportation Commission
1120 North Street, Room 2221 (MS52)
Sacramento, California 95814

California Department of Fish and Wildlife, Region 4
1234 East Shaw Avenue
Fresno, California 93710

Office of Planning and Research—State Clearinghouse
1400 10th Street
Sacramento, California 95814

California State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, California 95816

San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Regional Water Quality Control Board, Region 5
1685 E Street
Fresno, California 93706

California Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691

California Highway Patrol—Buttonwillow
29449 Stockdale Highway
Bakersfield, California 93314

Kern County Sheriff's Department
315 North Lincoln Street
Taft, California 93268

Kern County Public Works Department
2700 M Street, Suite 400
Bakersfield, California 93301

Kern County Fire Department
801 Stanislaus Street
Maricopa, California 93308

Maricopa Unified School District
955 Stanislaus Street
Maricopa, California 93252

Hall Ambulance Service
1001 21st Street
Bakersfield, California 93301

Chumash Council of Bakersfield
729 Texas Street
Bakersfield, California 93307

San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, California 91322

Tule River Indian Tribe
P.O. Box 589
Porterville, California 93258

Kern Valley Indian Council
P.O. Box 401
Weldon, California 93283

Santa Rosa Rancheria
P.O. Box 8
Lemoore, California 93245-0008

Tejon Indian Tribe
1731 Hasti-Acres Drive, Suite 108
Bakersfield, California 93309

Tubatulabals of Kern Valley
P.O. Box 226
Lake Isabella, California 93240

Wuksache Indian Tribe Eshom Valley Band
1179 Rock Haven Court
Salinas, California 93906

Kern County Board of Supervisors, District 2
1115 Truxtun Avenue, 5th Floor
Bakersfield, California 93301

The Honorable Karen Goh,
City of Bakersfield Mayor
1501 Truxtun Avenue
Bakersfield, California 93301

The Honorable Dianne Feinstein,
United States Senate
2500 Tulare Street, Suite 4290
Fresno, California 93721

The Honorable Alex Padilla,
United States Senate
2500 Tulare Street, Suite 4290
Fresno, California 93721

The Honorable Kevin McCarthy
US Congressman, 23rd District
4100 Empire Drive, Suite 150
Bakersfield, California 93309

The Honorable Shannon Grove,
California State Senator, 16th District
5701 Truxtun Avenue, Suite 150
Bakersfield, California 93309

The Honorable Vince Fong,
California State Assemblyman, 34th District
4900 California, Suite 100B
Bakersfield, California 93309

California Department of Water Resources
1416 9th Street
Sacramento, California 95814

U.S. Department of Housing and Urban Development
300 North Los Angeles Street, Suite 4054
Los Angeles, CA 90012

U.S. Department of the Interior
Office of Environmental Policy and Compliance
1849 C Street, NW (MS 2629)
Washington, DC 20240

Appendix A Section 4(f) Evaluation

Introduction

The California Department of Transportation (Caltrans), as the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) lead agency, proposes to replace California Aqueduct Bridge Number 50-0323 on State Route 166. The project is in Kern County, 17.5 miles east of Maricopa, 2.6 miles east of Old River Road, and 5 miles west of Interstate 5 (see Figures 1-1 and 1-2 in the Initial Study/Environmental Assessment).

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S. Code 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) at 49 U.S. Code 303(c) specifies that:

[The] Secretary [of Transportation] may approve a transportation program or project […] requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if --

> (1) there is no prudent and feasible avoidance alternative to using that land; and
>
> (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires cooperation and consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed. (49 U.S. Code 303(b).)

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 U.S. Code 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

This Individual Section 4(f) Evaluation replaces the De Minimis Section 4(f) Evaluation that was previously circulated to the public in June 2018 for this project. On August 28, 2018, the State Historic Preservation Officer formally responded to Caltrans, stating that after her review, she was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for this project. The basis of the State Historic Preservation Officer's rejection of the Finding of No Adverse Effect was that Caltrans' preferred design alternative "is visually obtrusive to the California Aqueduct due to its increased size from the existing bridge." Further information concerning the proposed project alternatives and coordination with the State Historic Preservation Officer is discussed below. In addition, please refer to Chapter 1 of the Initial Study/Environmental Assessment for more detailed project information.

Description of Proposed Project

Project Description

The project would seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323 on State Route 166 in Kern County east of Maricopa, 2.6 miles east of Old River Road and 5 miles west of Interstate 5 (see Figures 1-1 and 1-2 in the Initial Study/Environmental Assessment). State Route 166 at the bridge location is a conventional two-lane highway with two 12-foot lanes and 8-foot shoulders. The bridge was built in 1968 and is about 400 feet long. The purpose of the project is to seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323. The existing structure would be left in place, and a new support structure would be added below the bridge deck. The existing bridge would be rehabilitated to current Caltrans standards, including upgrading the bridge dikes, pavement, and the bridge rails.

The bridge, which Caltrans owns, crosses the California Aqueduct, which the California Department of Water Resources owns and operates. The California Aqueduct was determined eligible for the National Register of Historic Places in 2012 under Criteria A and C of the National Historic Preservation Act. The bridge qualifies under Criterion C as a contributing element to the California Aqueduct.

Purpose of the Proposed Project

The purpose of this project is to seismically retrofit and rehabilitate the existing 50-year-old bridge that will meet current Caltrans standards and be structurally sound.

Need for the Proposed Project

The existing bridge is deficient for the following reasons:

- The bridge piers are settling into the ground, resulting in cracks on the bottom surface of the existing bridge structure.

- The bridge deck is sagging and rotating, indicating that the foundation is unstable, resulting in insufficient structural integrity.
- Because of the bridge's insufficient structural integrity, the bridge may continue to deteriorate and become structurally unsound.

Images of the bridge in its existing condition are shown in Appendix H.

Please see the Purpose and Need section in Chapter 1 of the Initial Study/Environmental Assessment for additional information.

Project Background and Consultative Determinations

Consultation with the Department of Water Resources

Caltrans initiated construction on a project in early 2013 to address deficiencies at several bridges in Fresno County, Madera County, and Tulare County, including Bridge Number 50-0323. Caltrans initially proposed to retrofit and rehabilitate the existing bridge by installing cast-in-drilled-hole piles (pouring concrete into deep, newly drilled holes) to stabilize the pile caps from movement. Upon further review, Caltrans determined that it]would not be able to address deficiencies on the existing bridge without a complete seismic retrofit of the bridge. As a result, Caltrans decided to suspend construction on the bridge, remove it from the initial project, and instead design a long-term State Highway Operation and Protection Program project that would address all the bridge's deficiencies.

The project was reinitiated on June 9, 2016, when alternatives were designed that would address the deficiencies on the existing bridge. Caltrans then began the environmental analysis process to assess the potential environmental impacts associated with the project's proposed alternatives. Due to potential impacts to the aqueduct, Caltrans consulted with the California Department of Water Resources, which owns and operates the aqueduct.

In October 2017, a meeting was held with Caltrans and the California Department of Water Resources in Sacramento. During this meeting, Caltrans presented the proposed alternatives: Alternatives 1, 1A, 6, and 7. However, because the California Department of Water Resources determined that placing piers in the California Aqueduct would not be feasible without disrupting water flow and aqueduct operations, all alternatives that proposed placing piers in the water were eliminated from further discussion and consideration. These alternatives are further discussed below in Reevaluation of Alternatives 1, 1A, 6, and 7.

Consultation with the Department of Water Resources that occurred after the public circulation of the draft environmental document is discussed below in Further Consultation with the Department of Water Resources After the Public Circulation of the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

Evaluation of Remaining Alternatives

Upon the initial elimination of Alternatives 1, 1A, 6, and 7, the project development team evaluated Alternatives 2, 3, 4, 5, and 8 based on the criteria listed below:

1) Does this alternative involve the complete shutdown of flow, significant reduction in hydraulic capacity, or penetrating the aqueduct lining?
2) Does this alternative fail to meet the project's purpose and need?
3) Does this alternative have excessive construction costs?
4) Are there severe operational or safety problems associated with this alternative?
5) Are there unacceptable adverse social, economic, or environmental impacts?
6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

If any alternative triggered a "yes" in response to the criteria, the alternative was rejected. See Table A.1 in Appendix A for a comparison between the rejected alternatives and the criteria that triggered the rejection.

After triggering a "yes" in response to the criteria, Alternatives 2, 3, 4, and 5 were eliminated from further consideration and are discussed further in Section 1.6, Alternatives Considered but Eliminated from Further Discussion.

Alternative 8 did not trigger a "yes" in response to the criteria and was further developed as a build alternative.

Consultation with the State Historic Preservation Officer

In 2018, Caltrans completed an Initial Study with Proposed Negative Declaration under CEQA, an Environmental Assessment under NEPA, and a De Minimis Section 4(f) Evaluation for the proposed project. The draft environmental document was circulated for public and agency comment in June 2018. During the circulation period, Caltrans received a comment from the State Historic Preservation Officer disputing Caltrans' No Adverse Effect determination under Section 106 for impacts to the California Aqueduct, a historic property eligible for the National Register of Historic Properties, and Bridge Number 50-0323, an eligible contributing feature of the California Aqueduct.

The State Historic Preservation Officer determined that the proposed project was visually obtrusive to the existing environment and that the proposed design took away from the look and feel of the California Aqueduct. The State Historic Preservation Officer argued that the proposed bridge would affect the integrity of materials, design, setting, workmanship, and feeling of the aqueduct.

Caltrans accepted the State Historic Preservation Officer's comments and the Finding of Effect on January 29, 2019. The acceptance of the Finding of Effect required the document level of the previously completed Section 4(f) Evaluation to be elevated from a De Minimis determination to an Individual Section 4(f) Evaluation.

Since the original submittal of the Finding of Effect, Alternative 8 was modified to include additional construction work to lessen impacts to utility lines; a new alternative—the South Alignment Alternative—was also being considered. On March 24, 2021, a revised Finding of Adverse Effect under Section 106 was completed for the project and sent to the State Historic Preservation Officer. The State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect.

The Value Analysis

Due to the anticipated cost of the project, a value analysis was conducted for the project in October 2019. The value analysis considered additional alternatives that were evaluated based on impacts on performance, cost, time, and risk when compared to Alternative 8. The value analysis team was composed of Caltrans specialists unassociated and unfamiliar with the project at the time. If any new alternatives were recommended by the value analysis team, the project development team further evaluated those alternatives sing the criteria listed in Section 1.4.2, Evaluation of Remaining Alternatives.

The value analysis team recommended that Value Analysis Alternatives 2.1, 2.2, 2.3, Alternative 2.4 (also referred to as the North Alignment), and 2.5 should be included in the project scope and evaluated as alternatives for this project. These alternatives were paired with companion alternatives, Value Analysis Alternatives 1.1 and 1.2, as detour options based on the need for a roadway realignment. However, after receiving feedback from the project development team, it was determined that Value Analysis Alternatives 2.1, 2.2, 2.3, and 2.5 would trigger a "yes" when compared to the alternative elimination criteria described in Section 1.4.2, Evaluation of Remaining Alternatives.

The value analysis team concluded that Value Analysis Alternative 2.4 (North Alignment) should be accepted as part of the project scope and further evaluated by the project development team. Value Analysis Alternative 1.1 and 1.2 were also recommended for further evaluation as detour options for Alternative 8 and Value Analysis Alternative 2.4 (North Alignment), respectively. It was later determined that Value Analysis Alternative 2.4 (North Alignment) would result in severe utility impacts. This alternative was then revised, moved to the south, and renamed the South Alignment Alternative.

The value analysis team rejected the rest of the value analysis alternatives, as more fully described below in Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study/Environmental Assessment

and Draft Section 4(f) Evaluation. That section also further describes Value Analysis Alternative 2.4 (North Alignment) before it was revised into the South Alignment Alternative.

Further Consultation with the Department of Water Resources and the State Historic Preservation Officer After the Public Circulation of the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

This section has been added since the draft environmental document was circulated to the public:

After completion of the public review and comment period, new access roads connecting State Route 166 to the California Aqueduct were added to the project description. These access roads were being designed in consultation with the Department of Water Resources. During the consultative meetings that took place on October 12, 2021 and October 26, 2021, the Department of Water Resources stated in-channel work may be feasible, provided Caltrans works in close coordination with the Department of Water Resources throughout the design and construction of the project and that the aqueduct would only be dewatered for 48 hours.

On May 2, 2022, Caltrans met with the Department of Water Resources to further discuss the feasibility of reverting the project back to a rehabilitation and seismic retrofit project. A follow-up letter dated May 5, 2022 was sent to the Department of Water Resources, requesting approval to move forward with the seismic retrofit and rehabilitation strategy.

Caltrans received a response letter on May 12, 2022, stating the Department of Water Resources' acceptance of the seismic retrofit and rehabilitation strategy, provided Caltrans remains committed to working closely with the Department of Water Resources in the design and construction phase of the project. A 48-hour dewatering limit is included in this agreement between the Department of Water Resources and Caltrans.

After this consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration due to cost, utility impacts, farmland impacts, construction time, and detour time. This led to the completion of the Second Supplemental Finding of Adverse Effect, which was submitted to the Office of Historic Preservation on August 11, 2022.

In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed on August 11, 2022, and identifies avoidance, minimization, and mitigation measures for the project. The Memorandum of Agreement is included in Appendix I. The Memorandum of Agreement was mentioned in the draft environmental document but was not included in the

appendix because it was executed after the draft environmental document was circulated.

Reevaluation of Alternatives 1, 1A, 6, and 7

This section has been added since the draft environmental document was circulated:

After the Department of Water Resources agreed to allow in-channel work during the construction of the project, Alternatives 1, 1A, 6, 7, and Value Analysis Alternative 2.3 were reevaluated based on criteria 2 through 6 listed in Section 1.4.2, Evaluation of Remaining Alternatives. Following recent consultative determinations with the Department of Water Resources, criterion 1 was updated to reflect current dewatering time restrictions.

If any alternative triggered a “yes” in response to the criteria, the alternative was rejected. See Table A.1 for a comparison between the rejected alternatives and the criteria that triggered the rejection.

After triggering a “yes” in response to the criteria, Alternatives 1, 6, and Value Analysis Alternative 2.3 were eliminated from further consideration and are discussed further in Section 1.8, Alternatives Reconsidered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

Alternative 1A has become the project preferred alternative.

Current Project Alternatives

This section has been revised since the draft environmental document was circulated. Following the decision to prepare an Individual Section 4(f) evaluation, it was determined that the build alternative (Alternative 1A), along with the No-Build (No-Action) Alternative, would be considered for this project:

Alternative 1A

This alternative would add extra support to the bridge at pier 2 (the westerly bent row column) where the structure is currently sagging and cracking. Two new 8-foot-diameter columns would be placed in-line with the existing pier at the north and south edges of the bridge. The columns would be placed inside the aqueduct at a depth of 50 feet from the aqueduct liner. A 12-foot prestressed concrete cap beam would be installed across the columns and around the existing support wall to support the bridge and prevent further sagging. The new support structure would extend just outside of the existing structure footprint. This alternative would also update the bridge rail to current standards by replacing all existing metal beam guardrail with mid-west guard rail, replace existing bridge dikes with hot mix asphalt dikes, and cold-plane (scrape off) the existing pavement and replace it with hot mix asphalt and

rubberized hot mix asphalt up to 200 feet from both sides of the bridge. Fiber optic utilities would likely need to be relocated.

This alternative would cost $8,000,000. It would not require additional right-of-way and would not require temporary construction easements. The project would take 4 to 6 months to construct. A detour would be required while the California Aqueduct is dewatered at the beginning of construction. This phase of construction would take 3 to 4 weeks. This alternative would adopt Value Analysis Alternative 1.1, which is a detour alternative. This detour alternative was presented to the project development team during the Value Analysis process as a companion alternative to all alternatives that maintained the existing bridge and roadway alignment. Under this detour alternative, traffic on State Route 166 would be rerouted onto State Route 119 and State Route 33, flowing to Interstate 5 and State Route 99. Reversing traffic control would be used for the remainder of construction.

No-Build (No-Action) Alternative

The No-Build (No-Action) Alternative would not result in construction activities and would not affect the Section 4(f) resource. The No-Build (No-Action) Alternative would also not meet the purpose and need of the project. The bridge would still be out of compliance with current Caltrans standards and continue to worsen. This would lead to decreased structural integrity and could lead to the collapse of the bridge. The potential collapse of the bridge could create a cost to life and property, involve additional construction, and threaten the delivery of the water supply to Santa Barbara, Los Angeles, and San Bernardino counties, which would add up to possible impacts of extraordinary magnitude.

Alternatives Considered but Eliminated from Further Discussion Prior to the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

The following provides a summary of the proposed project alternatives that were considered but eliminated from further discussion. Chapter 1 of the Initial Study/Environmental Assessment provides additional detailed information.

The following was added after the public circulation of the draft environmental document: Due to recent consultative decisions between Caltrans and the Department of Water Resources, the elimination criteria based on the need to shut down the flow, reduce hydraulic capacity, or penetrate the aqueduct lining are no longer valid. Consequently, several alternatives discussed in this section were reevaluated after the circulation of the draft environmental document. The alternatives that were eliminated after reevaluation are discussed below in Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation.

Alternatives 1, 1A, 6, and 7

Because the California Department of Water Resources determined that placing piers in the California Aqueduct would disrupt the flow of water and would not be feasible with aqueduct operations, the following alternatives were eliminated from further consideration:

Alternative 1

Alternative 1 proposed to seismically retrofit the bridge, which would have required the existing structure at Pier 2 to be elevated until it reached the required deck elevation. Seismically retrofitting the bridge would have also allowed for the construction of the bridge columns at Pier 2. Once completed, a steel plate and threaded rods would have been placed through the cored holes on the structure to build the abutment footing for the bridge. The existing bridge rail would have been removed and replaced with Caltrans' standard concrete barrier.

Alternative 1A

Alternative 1A proposed a rehabilitation strategy of the bridge by strengthening Pier 2. The work needed to strengthen Pier 2 would have involved drilling holes through the aqueduct channel lining to place large pipe pile extensions to help support the bridge.

Alternative 6

Alternative 6 proposed a replacement that would have used the existing bridge as a work platform. Alternative 6 proposed that new single-column piers be built near existing Piers 2 and 3 on the aqueduct lining. The new bridge structure would have been built from the existing bridge. The existing bridge would have been removed after the installation of the new bridge.

Alternative 7

Alternative 7 proposed a two-span replacement that would have used the existing bridge as a work platform. A single large-diameter column would have been built along the aqueduct centerline through the existing bridge structure. The new bridge structure would have been built off the existing bridge, and the existing bridge would have been removed after the installation of the new bridge.

Alternatives 2, 3, 4, and 5

As explained in Section 1.4.2, Evaluation of Remaining Alternatives, Alternatives 2, 3, 4, and 5 were evaluated but rejected based on the criteria listed below:

1) Does this alternative involve the complete shutdown of flow, significant reduction in hydraulic capacity, or penetrating the aqueduct lining?
2) Does this alternative fail to meet the project's purpose and need?

3) Does this alternative have excessive construction costs?
4) Are there severe operational or safety problems associated with this alternative?
5) Are there unacceptable adverse social, economic, or environmental impacts?
6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

If any alternative triggered a “yes” in response to the criteria, the alternative was rejected. See Table A.1 for a comparison between the rejected alternatives and the criteria that triggered the rejection.

Alternative 2

Alternative 2 proposed to replace the existing bridge with a new one that would have crossed the aqueduct perpendicularly and about 1 mile south of its current location. This alternative would have required adding three horizontal curves and one vertical curve to the roadway. This alternative would have cost $23,315,000 and impacted up to 75 acres of farmland.

While Alternative 2 would have had low costs, it would have impacted the most farmland out of all the alternatives. Alternative 2 would have also introduced sharp horizontal reversing curves in the roadway, which studies have shown would be a potential safety concern for motorists. The introduction of reversing curves this sharp warranted a concern from Traffic Operations staff, who requested the crash analysis to compare the new alignment with the existing condition. The September 27, 2018 version of the Crash Prediction Evaluation Report, which compares the existing alignment with the proposed new horizontal reversing curve alignment (Alternative 2), showed that Alternative 2 would have had a potential for a roughly 40 percent higher number of accidents.

Alternative 3

Alternative 3 proposed to replace the existing three-span 394-foot-long bridge with a 1,320-foot-long segmentally built bridge on a parallel alignment. The structure would have been 49 feet tall. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 3 proposed to clear-span the bridge, which would have left an open area within the structure to allow the California Department of Water Resources access to the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 3 would have cost $58,745,000 and impacted about 20 acres of farmland.

Due to the high cost of Alternative 3 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

Alternative 4

Alternative 4 proposed to replace the existing three-span 394-foot-long bridge with a 1,370-foot-long bridge that would have been supported and stabilized by long cables. The structure would have been 36 feet tall and built on a parallel alignment. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 4 proposed to clear-span the bridge, which would have left an open area within the structure to allow the California Department of Water Resources access to the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 4 would have cost $63,135,000 and impacted about 20 acres of farmland.

Due to the high cost of Alternative 4 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

Alternative 5

Alternative 5 would have replaced the existing bridge with a 1,320-foot-long segmental box-girder bridge along the existing State Route 166. The structure would have been 49 feet tall. The total length of the bridge was dictated by the amount of space the California Department of Water Resources needed to maintain the aqueduct. Alternative 5 proposed to clear-span the bridge, which would have left an open area within the structure to allow the California Department of Water Resources access to the aqueduct. This bridge design would have required large end-span lengths to balance the structure. Alternative 5 would have cost $58,745,000 and impacted about 16 acres of farmland.

Due to the high cost of Alternative 5 in combination with the impacts to farmland, this alternative was eliminated from further consideration.

Value Analysis Alternatives

The value analysis introduced new alternatives that were evaluated based on impacts on performance, cost, time, and risk when compared to Alternative 8. Key performance attributes identified for the project include mainline operations, temporary construction impacts, maintainability, and permanent environmental impacts. These attributes, along with an alternative's cost savings, time savings, and assumed risks, were then quantified by the value analysis team using a Value Metrics algorithm. An increase in performance rating indicates the new alternative improves mainline operations, reduces temporary construction impacts, increases maintainability, or reduces permanent environmental impacts when compared to Alternative 8.

If any new alternatives were recommended by the value analysis team, the project development team further evaluated those alternatives using the criteria listed in Section 1.4.2, Evaluation of Remaining Alternatives. The

following alternatives from the value analysis process were also considered and rejected, as explained below:

Value Analysis Alternative 2.1

This alternative would have improved Old River Road and Copus Road to current standards to serve as the new alignment for State Route 166. The aqueduct crossing on Old River Road would have also likely needed to be upgraded. The existing bridge would have been demolished.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $14,510,000, with a 205-day reduction in the construction schedule and a 1 percent decrease in performance. The performance rating is based on the impact the alternative would have had on the project's expected mainline operations, temporary construction impacts, maintainability, and permanent environmental impacts.

Accepting this proposed alternative would have failed to meet the project's purpose and need, as the purpose of this project is to replace Bridge Number 50-0323 with a new bridge, and this alternative would demolish the bridge without replacing it. For these reasons, Value Analysis Alternative 2.1 was eliminated from further consideration.

Value Analysis Alternative 2.2

This alternative would have developed a southern alignment for the new bridge. This bridge would have also used precast concrete girders.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $9,520,000, with a 55-day reduction in the construction schedule and an 8 percent decrease in performance.

However, a Wheeler Ridge-Maricopa Water Storage District facility exists just south of State Route 166 and east of the California Aqueduct. This alternative would have reduced the skewed angle (the angle at which the bridge crosses the California Aqueduct) and avoided the Wheeler Ridge-Maricopa Water Storage District facility by creating a significant deviation from the existing roadway alignment. This would have resulted in a large impact on farmlands, similarly to Alternative 2. For these reasons, Value Analysis Alternative 2.2 was eliminated from further consideration.

Value Analysis Alternative 2.3

This alternative would have built box culverts similar to the crossing on Old River Road.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $19,500,000, with a 55-day reduction in the construction schedule and a 7 percent increase in performance.

Based on the meeting with the California Department of Water Resources on October 19, 2017, the California Department of Water Resources would not approve any alternative involving a complete shutdown of flow, a significant reduction in hydraulic capacity, or penetration of the aqueduct lining. For this reason, Value Analysis Alternative 2.3 was eliminated from further consideration.

Value Analysis Alternative 2.4

This alternative would have realigned the bridge to the north and introduced three horizontal reversing curves. This alternative would have reduced the overall size of the bridge, reduced the vertical curve of the bridge, and reduced the span length of the bridge, allowing for more conventional bridge construction methods when compared to Alternative 8. Rather than hauling and assembling oversized steel beams to create a structure onsite, this alternative would allow for the less challenging transportation of preassembled bridge parts. This alternative would have also required up to 13 acres of farmland and added 3,578 feet of new roadway due to the route realignment involving reversing curves.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $18,900,000, with a 55-day reduction in the construction schedule and a 20 percent increase in performance. The project team accepted this alternative as a result of the value analysis. After further evaluation, however, it was discovered that this alternative would result in utility impacts to an existing oil line. The oil line would need to be relocated further to the north for this alignment, which would have added $5,000,000 to the project cost and require an additional 2 years to complete the project. For this reason, Value Analysis Alternative 2.4 as described in this section was eliminated from further consideration. However, this alternative was then revised, moved to the south, and renamed the South Alignment Alternative. See Section1.5.1, Build Alternatives, for additional details.

Value Analysis Alternative 2.5

This alternative would have created a platform bridge by installing concrete girders at 90 degrees to the aqueduct centerline. This platform bridge would have been roughly 490 feet long by 160 feet wide, and the travel way would have been delineated on this platform. This platform would likely have created public attention to the unused non-delineated portions of the bridge, which would likely result in the public occupying the excess space for fishing or recreation, which is often seen in similar bridge designs. Installing the piles to support the concrete girders would have also impacted the utilities on the north side and south side of the bridge, including an oil line, which would increase cost and lengthen the project schedule.

The initial cost savings for this alternative, when compared to Alternative 8, would have been $7,410,000, with a 25-day reduction in the construction

schedule and a 5 percent increase in performance. The cost and time required for utility relocations were not initially factored into this estimate by the value analysis team due to limited familiarity with the project area.

Based on the visual and utility impacts noted by the project development team during the value analysis process, this alternative was removed from consideration.

Alternatives Considered but Eliminated from Further Discussion After the Draft Initial Study/Environmental Assessment and Draft Section 4(f) Evaluation

This section has been added since the public circulation of the draft environmental document.

After the public circulation of the draft environmental document, the Department of Water Resources agreed to allow in-channel work during project construction. Because Alternatives 1, 1A, 6, 7, and Value Analysis Alternative 2.3 were eliminated based on the need to shut down the flow, reduce hydraulic capacity, or penetrate the aqueduct lining, they were reevaluated as potential build alternatives. The build alternatives proposed in the draft environmental document were also reevaluated.

The reevaluation of alternatives was based on the criteria listed below:

1) Does this alternative involve over two consecutive days of the complete shutdown of flow or significant reduction in hydraulic capacity of the California Aqueduct?

2) Does this alternative fail to meet the project's purpose and need?

3) Does this alternative have excessive construction costs?

4) Are there severe operational or safety problems associated with this alternative?

5) Are there unacceptable adverse social, economic, or environmental impacts?

6) Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?

Criterion 1, as it is listed in Section 1.4.2, Evaluation of Remaining Alternatives, is no longer valid as a reason for alternative elimination, and was modified in the list above to match updated dewatering limitations. If any alternative triggered a "yes" in response to the remaining criteria, the alternative was rejected.

Alternatives 1, 6, and 7 were eliminated from further consideration and are discussed below. The build alternatives proposed in the draft environmental document were also reevaluated and eliminated after further consultation with the Department of Water Resources. See Table A.1 later in this appendix for a comparison between the rejected alternatives and the criteria that triggered the rejection.

Alternative 1A has become the project preferred alternative and is discussed in detail under Section 1.5.1, Build Alternatives.

Alternative 1

Alternative 1 proposed to seismically retrofit the bridge, which would have required the existing structure at Pier 2 to be elevated until it reached the required deck elevation. Seismically retrofitting the bridge would also have allowed for construction of the bridge columns at Pier 2. Once completed, a steel plate and threaded rods would have been placed through the cored holes on the structure to build the abutment footing for the bridge. The existing bridge rail would have been removed and replaced with Caltrans' standard concrete barrier.

This alternative would have the potential to further damage the California Aqueduct and California Aqueduct Bridge Number 50-0323 during construction. The process of raising the existing bridge deck to the required elevation may crack the existing structure and aqueduct liner. This poses a safety risk to construction workers and risks unacceptable economic impacts. For these reasons, Alternative 1 was eliminated from further discussion.

Alternative 6

Alternative 6 proposed a replacement that would have used the existing bridge as a work platform. Alternative 6 proposed that new single-column piers be built near existing Piers 2 and 3 on the aqueduct lining. The new bridge structure would have been built from the existing bridge. The existing bridge would have been removed after the installation of the new bridge.

This alternative would have cost about $50,000,000 and would require elevating the roadway. This alternative would also require oil line relocations where the oil line could not be avoided through the construction of a retaining wall. Due to the high cost of Alternative 6 in combination with the impacts to utilities, this alternative was eliminated from further consideration.

Alternative 7

Alternative 7 proposed a two-span replacement that would have used the existing bridge as a work platform. A single large-diameter column would have been built along the aqueduct centerline through the existing bridge structure. The new bridge structure would have been built off the existing

bridge, and the existing bridge would have been removed after the installation of the new bridge.

This alternative would have cost about $50,000,000 and would require elevating the roadway. This alternative would also require oil line relocations where the oil line could not be avoided through the construction of a retaining wall. Due to the high cost of Alternative 6 in combination with the impacts to utilities, this alternative was eliminated from further consideration.

Value Analysis Alternative 2.3

This alternative would have built box culverts similar to the crossing on Old River Road. The initial cost savings for this alternative, when compared to Alternative 8, would have been $19,500,000, with a 55-day reduction in the construction schedule and a 7 percent increase in performance.

This alternative would require more time than the Department of Water Resources has allotted for dewatering. Also, the existing aqueduct liner would not serve as a good foundation for the culverts, and it would be difficult to maintain a cross sectional area for water flow equivalent to the existing trapezoidal canal. For these reasons, this alternative was eliminated from further consideration.

Alternative 8

Alternative 8 proposes to build a single-span replacement bridge that would not require the placement of piers in the aqueduct. The new bridge would be built on the same alignment as the existing bridge but would additionally impact up to 6 acres of farmland. The new bridge would be a 16-foot-deep steel-beam bridge about 434 feet long, and 43 feet and 6 inches wide with 12-foot-wide lanes and 8-foot-wide shoulders. The new bridge would have a vertical height of 21 feet and require 1,500-foot approaches with fill material. A retaining wall would be located on the northern side of State Route 166, east of the California Aqueduct. The wall type would be a mechanically stabilized embankment, with a maximum height of 24 feet and length of 1,250 feet. The top of the wall would include a concrete barrier on a reinforced concrete barrier slab.

In addition, Value Analysis Alternative 1.1 was included as a detour alternative. During the value analysis process, the value analysis team presented this alternative as a companion alternative to all recommended alternatives that maintained the existing bridge and roadway alignment. Under this detour alternative, traffic on State Route 166 would be rerouted onto State Route 119 and State Route 33, flowing to Interstate 5 and State Route 99 to maintain the flow of traffic during construction. This detour is included in Figure 1-2 in Section 1.3, Project Description. The original detour route used Old River Road and Copus Road, both of which would require $5,000,000 worth of improvements before bridge construction. These improvements would also likely increase the environmental impacts of the

project due to the proximity of sensitive biological resources. The initial cost savings for this alternative, compared to the original detour route, would be $4,500,000, with a 121-day reduction in the construction schedule and a 16 percent increase in performance. For these reasons, Alternative 1.1 was adopted as the preferred detour route for Alternative 8. Because this alternative is exclusive to Alternative 8, its effect on a Section 4(f) resource is discussed under Alternative 8.

This alternative would acquire land from 4 parcels (agricultural land included) and require utility relocations, both of which are discussed in Section 2.1.1, Farmland and Section 2.1.2, Utilities and Emergency Services. Construction is expected to last up to 18 months, and the construction cost of this alternative is estimated to be $46,000,000. See Figure 1-3 for a visual simulation of this build alternative.

The following text has been added to the description of Alternative 8 since the draft environmental document was circulated: Alternative 8 would cost about $54,000,000. This alternative would require oil line relocations where the oil line cannot be avoided through the construction of a retaining wall and could lead to further right-of-way take when designing the permanent California Aqueduct maintenance access roads that were not accounted for before the circulation of the draft environmental document. This alternative would also take 6.15 acres of farmland. Alternative 8 would take 18 months to construct and require up to a 16-month-long detour. Due to cost, utility impacts, farmland impacts, construction time, and detour time, Alternative 8 was eliminated from further consideration.

South Alignment Alternative

This alternative would build a single-span replacement bridge that would not require the placement of piers in the aqueduct. This alternative would realign the bridge to the south and introduce three horizontal reversing curves. This alternative would reduce the vertical curve of the bridge and allow for conventional bridge construction methods. This alternative would impact about 26 acres of farmland and add 4,752 feet of new pavement and include a 280-foot-long steel-girder bridge. The bridge girder would be about 12.5 feet deep and 43.5 feet wide, while the bridge would have a vertical profile 20 feet above the native ground.

Value Analysis Alternative 1.2 was also included as a detour alternative. During the value analysis process, the value analysis team presented this alternative as a companion alternative to all recommended alternatives that would realign the bridge and roadway. This detour alternative would allow the continued use of the existing bridge during construction, minimizing the need for a new detour under the South Alignment Alternative. However, near the end of construction, a detour would be required while the realignment is connected to State Route 166. The same detour proposed for Alternative 8 would be used for the South Alignment Alternative. This detour would result in the least amount of traffic

delays resulting from project construction but requires the adoption of a new bridge alignment for implementation. The initial cost savings for this alternative, compared to the original detour route, would be $4,500,000, with a 121-day reduction in the construction schedule and a 16 percent increase in performance. For these reasons, this alternative was adopted as the preferred detour route for the South Alignment Alternative. Because this alternative is exclusive to the South Alignment Alternative, its effect on the Section 4(f) resource is discussed under the South Alignment Alternative.

The following text has been added since the draft environmental document was circulated: After completion of the public review and comment period, the design of the South Alignment Alternative was further refined. The South Alignment Alternative would acquire land from 4 parcels, with a total right-of-way acquisition of 19.20 acres. This alternative would impact about 16.41 acres of farmland. In addition, four California Aqueduct maintenance access roads connecting State Route 166 to the California Aqueduct were added to the project description since the public review of the draft environmental document. The new access roads would connect to State Route 166 at Schallock Road on the western side of the project and at the divergent point from the existing alignment on the eastern side of the project. The two northern roads would be constructed on the existing State Route 166 footprint, and the two southern roads would be constructed parallel to the new alignment. These access roads would not require the acquisition of additional right-of-way outside the project footprint presented in the draft environmental document.

The South Alignment Alternative would cost about $39,000,000. This alternative would avoid conflicts with an oil line that exists north of the existing alignment and would take 26.39 acres of farmland. The South Alignment Alternative would take 16 months to construct and require a 2-month-long detour. Due to cost, utility impacts, farmland impacts, construction time, and detour time, the South Alignment Alternative was eliminated from further consideration.

Table A.1 Comparison of Rejected Alternatives Against Rejection Criteria

Alternative	Criterion 1: Does this alternative involve over two consecutive days of the complete shutdown of flow or significant reduction in hydraulic capacity of the California Aqueduct?	Criterion 2: Does this alternative fail to meet the project's purpose and need?	Criterion 3: Does this alternative have excessive construction costs?	Criterion 4: Are there severe operational or safety problems associated with this alternative?	Criterion 5: Are there unacceptable adverse social, economic, or environmental impacts?	Criterion 6: Is there a combination of reasons listed previously, that, taken individually, might not be significant but would be significant if taken cumulatively?	Criterion 7: Was this alternative rejected by the value analysis team?
Alternative 1	No	No	No	No	**Yes**	**Yes**	Not applicable
Alternative 2	No	No	No	**Yes**	**Yes**	**Yes**	Not applicable
Alternative 3	No	No	**Yes**	No	No	**Yes**	Not applicable
Alternative 4	No	No	**Yes**	No	No	**Yes**	Not applicable
Alternative 5	No	No	**Yes**	No	No	**Yes**	Not applicable
Alternative 6	No	No	**Yes**	No	**Yes**	No	Not applicable
Alternative 7	No	No	**Yes**	No	**Yes**	No	Not applicable
Alternative 8	No	No	**Yes**	No	**Yes**	No	Not applicable
Value Analysis Alternative 2.1	No	**Yes**	No	No	No	No	**Yes**
Value Analysis Alternative 2.2	No	No	No	No	**Yes**	No	**Yes**
Value Analysis Alternative 2.3	**Yes**	No	No	No	No	No	**Yes**
Value Analysis Alternative 2.4	No	No	No	No	**Yes**	No	No
Value Analysis Alternative 2.5	No	No	No	No	**Yes**	No	**Yes**
South Alignment Alternative	No	No	**Yes**	No	**Yes**	No	No

This table has been altered since the public circulation of the draft environmental document. Alternatives 1, 6, 7, 8, and the South Alignment Alternative were added to the table. The criteria columns were numbered, and Criterion 1 was updated to reflect current restrictions from the Department of Water Resources.

Section 4(f) Properties

One historic site—the California Aqueduct (CA-FRE-3645H)—crosses the project area at State Route 166 at post mile 17.45. For a historic site to be evaluated under Section 4(f), it must first be considered significant. A historic site is significant only if it is on or eligible for the National Register of Historic Places. The California Aqueduct was determined eligible under Section 106 for the National Register of Historic Places in 2012 under Criteria A and C of the National Historic Preservation Act and is therefore significant for the purposes of Section 4(f).

Under Criterion A, the aqueduct is eligible as the largest and most significant of the water conveyance systems developed as part of the State Water Project. Under Criterion C, the aqueduct is eligible due to its complex design, which was necessary to redistribute water throughout the state of California on such a massive level. The period of significance for the resource is 1960-1974, the years of construction.

As part of the 2012 evaluation, 17 bridges over the California Aqueduct were determined to be contributing elements for the aqueduct's eligibility. Caltrans, as part of its cultural resource identification efforts, and in accordance with stipulation 8.C.4 of the Section 106 Programmatic Agreement, determined the California Aqueduct Bridge Number 50-0323 was also eligible for inclusion in the National Register of Historic Places for this project as a contributing element of the California Aqueduct. As a result, California Aqueduct Bridge Number 50-0323 is considered significant for the purposes of Section 4(f).

Use of the Section 4(f) Properties

Description of Use and Impacts on the Section 4(f) Properties by Alternative

This section describes how the build alternative for the California Aqueduct Bridge Replacement project would or would not use both the California Aqueduct and California Aqueduct Bridge Number 50-0323 as Section 4(f) resources. The project proposes to rehabilitate and seismically retrofit an existing bridge. Section 774.17 of 23 Code of Federal Regulations states that except as set forth in Sections 774.11 and 774.13, a "use" of Section 4(f) property occurs:

> (1) When land is permanently incorporated into a transportation facility;
>
> (2) When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in Section 774.13(d); or

(3) When there is a constructive use of a Section 4(f) property as determined by the criteria in Section 774.15.

The No-Build (No-Action) Alternative is not discussed in this section because it would not result in the use of any Section 4(f) resources.

Alternative 1A

Alternative 1A proposes to add extra support to the bridge at pier 2 where the structure is currently sagging and cracking. Two columns would be placed inside the aqueduct at a depth of 50 feet from the aqueduct liner. A prestressed concrete cap beam would be installed across the columns and around the existing support wall to support the bridge and prevent further sagging. The existing bridge would be used as a construction base for the construction of the extra support. The existing bridge would then be rehabilitated by updating the bridge rail to current standards, replacing existing bridge dikes with hot mix asphalt dikes, and cold-planing the existing pavement and replacing it with hot mix asphalt and rubberized hot mix asphalt.

The proposed alternative would have an adverse effect to the California Aqueduct historic property by physically destroying character-defining features of the historic property and introducing new visual, atmospheric, or audible elements that diminish the integrity of the property's setting that contributes to its significance. This alternative would result in the alteration of California Aqueduct Bridge Number 50-0323, a character-defining feature of the California Aqueduct. In addition, the construction of the support structure would introduce new visual and atmospheric elements that would diminish the integrity of the property's setting.

Alternative 1A would result in the actual use of the California Aqueduct as a Section 4(f) property through the penetration of the aqueduct lining to construct the new support columns outside of the existing bridge footprint. This would permanently incorporate the property into a transportation facility.

Alternative 1A would also result in the actual use of the California Aqueduct Bridge Number 50-0323 as a Section 4(f) property through the construction of the support structure and through alterations to the bridge rail and dikes. This would permanently demolish features of the bridge, add additional features to the bridge, and incorporate the property into a transportation facility.

Avoidance Alternatives Analysis

Section 774.17 of 23 Code of Federal Regulations states that an alternative that would avoid the use of Section 4(f) resources [avoidance alternative] must be selected if that alternative is determined to be feasible and prudent. The regulations state that an avoidance alternative is feasible and prudent if it "does not cause other severe problems of a magnitude that substantially

outweighs the importance of protecting the Section 4(f) property." An alternative is not feasible "if it cannot be built as a matter of sound engineering judgment."

The regulations do not provide a single clear definition of "prudent." Instead, they list a series of factors that can support a conclusion that an alternative is not prudent. The definition of "feasible and prudent avoidance alternative" in 23 Code of Federal Regulations 774.17 provides the following direction for determining whether an alternative is prudent:

An alternative is not prudent if:

i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
ii. It results in unacceptable safety or operational problems;
iii. After reasonable mitigation, it still causes:
    a) Severe social, economic, or environmental impacts;
    b) Severe disruption to established communities;
    c) Severe disproportionate impacts to minority or low-income populations; or
    d) Severe impacts to other federally protected resources;
iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
v. It causes other unique problems or unusual factors; or
vi. It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

The California Aqueduct is an aquatic linear feature that is 444 miles long and stretches from just north of the city of Tracy to Los Angeles before splitting into three branches serving Santa Barbara County, Los Angeles County, and San Bernardino County. Because of its sheer size and linear nature, an additional linear feature will be required to cross the aqueduct. Caltrans has considered a wide range of alternatives which will be evaluated as possible avoidance alternatives in this section.

Alternative 1 would have seismically retrofitted the bridge by lifting the existing bridge deck and constructing additional support for the bridge. Like Alternative 1A, this alternative would result in the use of both the California Aqueduct and the California Aqueduct Bridge Number 50-0323 through the permanent incorporation of the properties into a transportation facility. Therefore, Alternative 1 is not an avoidance alternative.

Alternatives 2, 3, and 4, and Value Analysis Alternatives 2.1, 2.2 and 2.4, and the South Alignment Alternative would have replaced the existing bridge with a new one along a new alignment. These alternatives would result in the use of both the California Aqueduct and the California Aqueduct Bridge Number 50-0323 through the permanent incorporation of the properties into a transportation facility. Therefore, Alternatives 2, 3, and 4, and Value Analysis Alternatives 2.1, 2.2 and 2.4 are not avoidance alternatives.

Alternatives 5, 6, 7, and 8, Value Analysis Alternative 2.3, and Value Analysis Alternative 2.5 would have replaced the existing bridge with a new one along the existing alignment. These alternatives would result in the use of both the California Aqueduct. and the California Aqueduct Bridge Number 50-0323 through the permanent incorporation of the properties into a transportation facility. Alternatives 5, 6, 7, and 8, Value Analysis Alternative 2.3, and Value Analysis Alternative 2.5 are not avoidance alternatives.

The No-Build Alternative is the only avoidance alternative for this project. The No-Build Alternative would compromise the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need. The purpose of this project is to replace California Aqueduct Bridge Number 50-0323 with a new bridge that will meet current Caltrans standards, be more structurally sound, and be better able to withstand potential seismic events. The purpose directly involves the replacement and demolition of a character-defining feature of the California Aqueduct historic property and would therefore result in the diminished integrity of the design, setting, materials, and workmanship of the California Aqueduct.

Furthermore, this avoidance alternative could cause severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) property. The potential collapse of the bridge could create a cost to life and property, involve additional construction, and threaten the delivery of water supply to Santa Barbara, Los Angeles, and San Bernardino counties, which would add up to possible impacts of extraordinary magnitude.

Measures to Minimize Harm to Section 4(f) Resources

The development of the build alternatives for the California Aqueduct Bridge Replacement project considered a range of engineering and environmental constraints placed on the project as a result of consultation with the California Department of Water Resources. Meeting the purpose and need of the project, safety, environmental impacts, extraordinary cost, and avoiding or minimizing use of the Section 4(f) property were also key components during the alternative development and refinement processes, as explained in Description of the Proposed Project.

Efforts to minimize harm to the Section 4(f) property include persistent consultation with the Department of Water Resources to develop the current build alternative, which requires minimal dewatering time, constructs a single support structure below the bridge deck, and allows the bridge to remain mostly intact, preserving the look and feel of the original bridge as much as possible.

To ensure that the history of the bridge is adequately captured before construction, Caltrans would implement mitigation measures to help ensure that the bridge maintains its historical importance through documentation. To do this, Caltrans would complete a Historic American Buildings Survey and a Historic American Engineering Record. The Historic American Buildings Survey/Historic American Engineering Record documentation combines drawings, history, and photographs to produce a comprehensive, multidisciplinary record of a building or engineering feature. Historic American Buildings Survey/Historic American Engineering Record documentation becomes a part of the collection at the Library of Congress. The Historic American Buildings Survey/Historic American Engineering Record for the bridge will describe and convey the importance of the bridge as well as the role that the bridge plays in the larger aqueduct system.

Final mitigation measures were developed and documented in the subsequent Memorandum of Agreement, which was finalized after public circulation and review of the draft environmental document. The following additional measures are proposed:

- Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the California Aqueduct. The Identification and Condition Report will assess the condition of the existing bridges and identify all known alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

  Caltrans will develop the California Aqueduct Bridge Identification and Condition Report in consultation with the Department of Water Resources. Caltrans will submit the draft Identification and Condition Report to the Office of Historic Preservation, the Cultural Studies Office, and all other consulting parties. Consulting parties will have 30 days to provide comment. If Caltrans does not receive a response within 30 calendar days, the submitted documents will be considered as final. Caltrans District 6 will take all comments into account in revising the document and submit a final version to the consulting parties for second review. The consulting parties will have 30 calendar days to review the revised documents. The California Aqueduct Bridge Identification and Condition Report will be completed within two years following the end of construction.

- Develop and install informative displays or kiosks at public locations in close proximity to the California Aqueduct in the unincorporated

community of Kettleman City. These informative displays or kiosks would provide a brief history of the California Aqueduct, its associated features such as its bridges, its importance, and its use within the history of the San Joaquin Valley and California. Prior to fabrication of the informative panels, Caltrans will consult with the Office of Historic Preservation on the content of the informational displays for a 30-day review. The panels will be installed before expiration of the Memorandum of Agreement.

Least Overall Harm and Concluding Statement

Section 3.3.3.2 of the FHWA Section 4(f) Policy Paper states that the least harm alternative analysis is required when multiple alternatives that use Section 4(f) property remain under consideration. For the proposed project, there is only build alternative that remains under consideration; therefore, a least harm alternative analysis is not required. However, as detailed in the previous section, the build alternative has included all possible planning to minimize harm to the aqueduct.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the California Aqueduct. The proposed action includes all possible planning to minimize harm to the aqueduct resulting from such use.

Coordination

California Department of Water Resources

October 19, 2017: Caltrans' Project Development Team met with the California Department of Water Resources staff at their office at 1416 9th Street in Sacramento. The purpose of the meeting was to discuss the project status, the proposed alternatives to repair the bridge in the channel and the alternative option of building a new bridge on State Route 166 at the aqueduct. At the meeting, it was determined that no pier repair work would be allowed inside the aqueduct. This determination introduced design constraints to the project.

The following 6 dated paragraphs have been added since the draft environmental document was circulated.

September 10, 2021: The Department of Water Resources emailed the Caltrans Project Manager regarding the public review of the draft environmental document. Its email requested that the Department of Water Resources be involved in the design efforts of the project and that its initial comment letter received August 8, 2018 remains valid.

October 12, 2021: Caltrans Project Development Team staff met with Department of Water Resources staff via WebEx (an internet online meeting system) to discuss Caltrans' proposals for maintenance access roads to the California Aqueduct from State Route 166.

October 26, 2021: Caltrans Project Development Team staff met with Department of Water Resources staff at the project site to further discuss maintenance access roads, assess apparent feasibility, and clarify the Department of Water Resources' requests and requirements for access to the California Aqueduct.

May 2, 2022: Caltrans met with the Department of Water Resources to further discuss the feasibility of reverting the project back to a rehabilitation and seismic retrofit project.

May 5, 2022: A follow-up letter was sent to the Department of Water Resources, requesting approval to move forward with the seismic retrofit and rehabilitation strategy.

May 12, 2022: Caltrans received a response letter stating the Department of Water Resources' acceptance of the seismic retrofit and rehabilitation strategy, provided Caltrans remains committed to working closely with the Department of Water Resources in the design and construction phase of the project. A 48-hour dewatering limit is included in this agreement between the Department of Water Resources and Caltrans.

State Office of Historic Preservation

April 2018: A Finding of No Adverse Effect without Standard Conditions, which summarizes Caltrans' effects determination for the California Aqueduct and Bridge Number 50-0323, was prepared and sent to the State Office of Historic Preservation.

August 28, 2018: The State Historic Preservation Officer formally responded to Caltrans, stating that the State Historic Preservation Officer was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for the project. Caltrans accepted the State Historic Preservation Officer's comments.

August 30, 2018: Caltrans and State Office of Historic Preservation staff met to discuss possible ways of avoiding an Adverse Effect determination by changing design features.

September 18, 2018: Updated visual simulations with design changes were sent to the State Office of Historic Preservation.

September 26, 2018: The State Office of Historic Preservation staff verbally indicated that the bridge design would still likely have an adverse effect due to

the integrity of materials, design, setting, workmanship and feeling of the proposed new bridge.

October 1, 2018: Caltrans proposed a potential alternative using three horizontal “S” curves to reduce the new bridge height.

October 9, 2018: The State Office of Historic Preservation staff confirmed via email that the bridge would still have an adverse effect due to the integrity of materials, design, setting, workmanship and feeling of the proposed new bridge.

October 18, 2018: The State Historic Preservation Officer agreed with the State Office of Historic Preservation staff that the bridge would have an adverse effect due to the integrity of materials, design, setting, workmanship and feeling of the proposed new bridge.

November 8, 2018: Caltrans sent a letter to the State Historic Preservation Officer formally revising the finding to be a Finding of Adverse Effect.

January 29, 2019: The State Historic Preservation Officer formally responded to Caltrans, concurring with Caltrans’ Finding of Adverse Effect for Section 106 for the project.

March 24, 2021: Caltrans sent a Supplemental Finding of Adverse Effect to the State Historic Preservation Officer seeking concurrence on this finding, pursuant to Section 106.

June 9, 2021: The State Historic Preservation Officer formally responded to Caltrans, concurring with Caltrans’ Supplemental Finding of Adverse Effect for Section 106 for the project.

The following two paragraphs have been added since the draft environmental document was circulated.

August 11, 2022: A Second Supplemental Finding of Adverse Effect under Section 106 was completed for the project and sent to the State Historic Preservation Officer.

August 11, 2022: In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed.

Effects are still undetermined, so in accordance with Section 106 Programmatic Agreement Stipulation 10, the project delivery team will continue consultation with the Caltrans Division of Environmental Analysis Cultural Studies Office and/or the State Historic Preservation Officer in the future on the assessment of effects.

U.S. Department of the Interior

July 26, 2021: Caltrans submitted the draft Initial Study/Environmental Assessment with Section 4(f) Evaluation to the U.S. Department of the Interior for review and comment. The U.S. Department of the Interior was given 45 days to provide comments on the project. No comments were received during the 45-day comment period, and no comments were received in the 15 days following the comment period. Therefore, Caltrans is assuming a lack of objection to the draft Initial Study/Environmental Assessment with Section 4(f) Evaluation.

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

September 2021

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*"

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi .

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment."

Appendix C Proposed Right-of-Way Acquisition

This is the project's proposed right-of-way acquisition prior to the public circulation of the draft environmental document. Since then, the two alternatives shown—Alternative 8 and the South Alignment Alternative—were eliminated from further consideration. There will be no right-of-way acquisition under the current build alternative, Alternative 1A.

Figure C-1 Alternative 8 Proposed Right-of-Way Acquisition

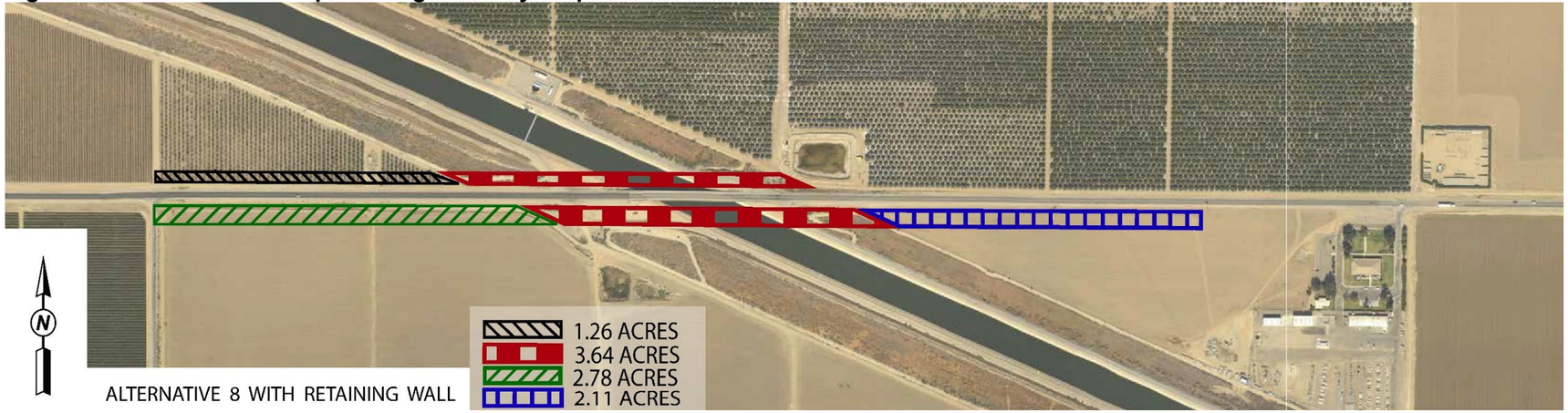


Figure C-2 South Alignment Alternative Proposed Right-of-Way Acquisition

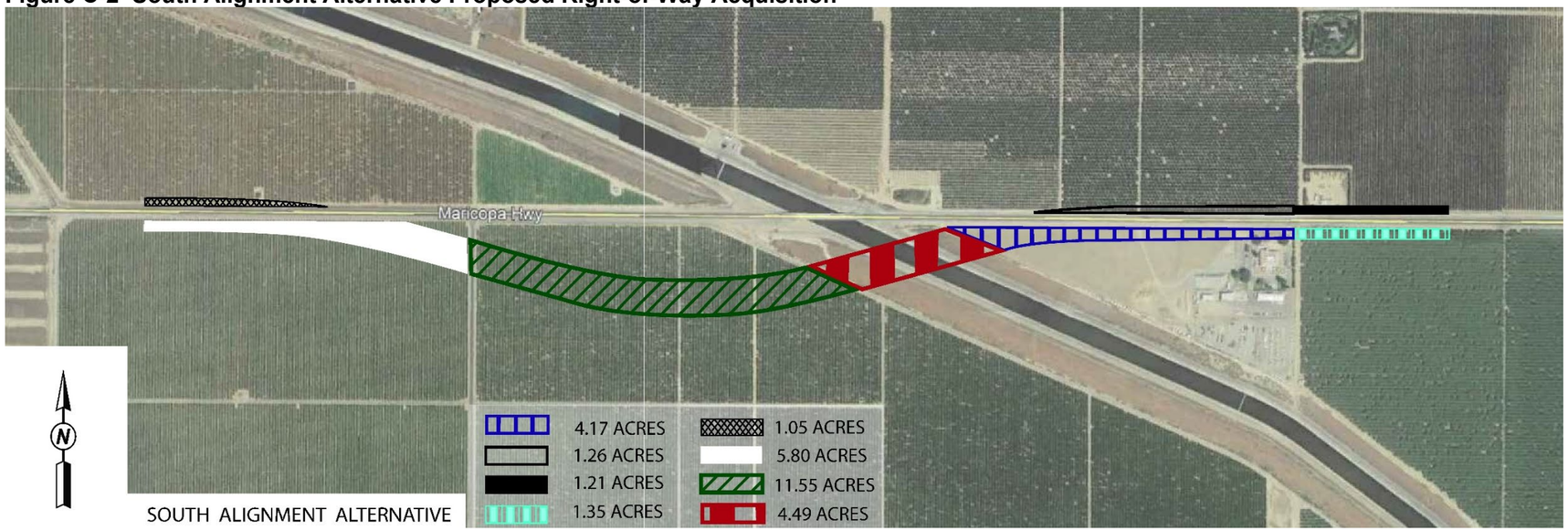
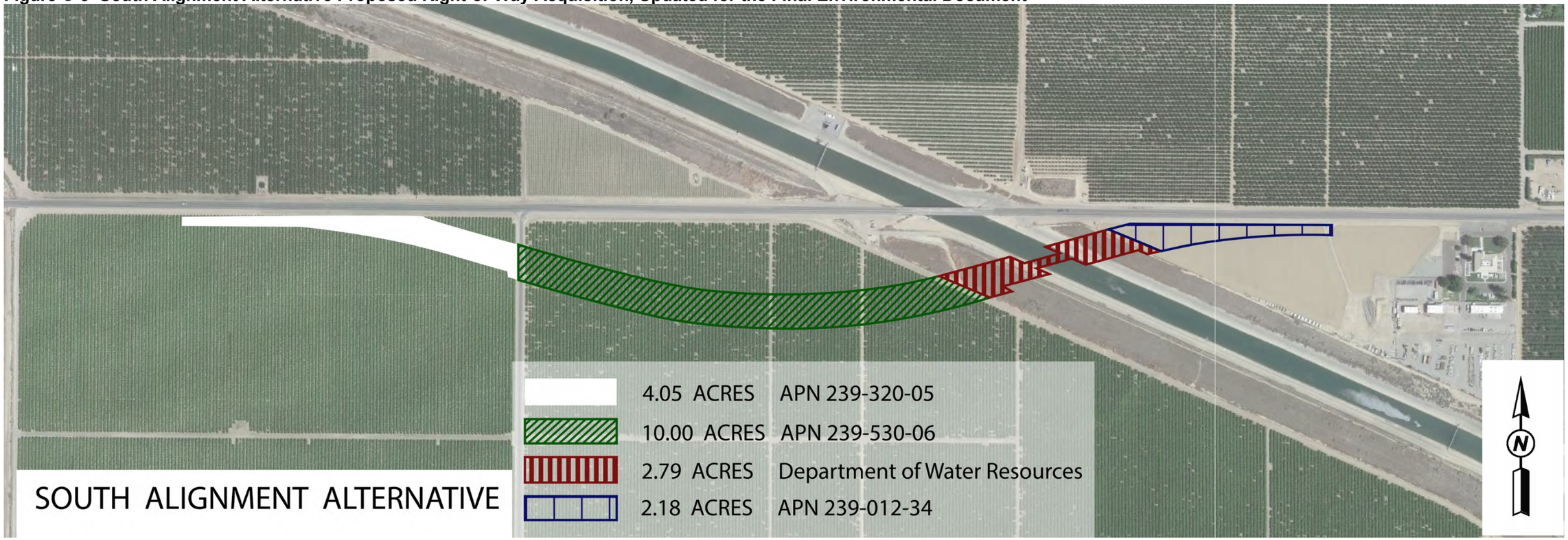


Figure C-3 South Alignment Alternative Proposed Right-of-Way Acquisition, Updated for the Final Environmental Document



Appendix D Natural Resources Conservation Service Farmland Impact Rating

This is the Natural Resources Conservation Service Farmland Impact Rating form that was completed prior to the public circulation of the draft environmental document. Since then, the two alternatives recorded on the form—Alternative 8 and the South Alignment Alternative—were eliminated from further consideration for the project. There will be no farmland acquisition under the current build alternative, Alternative 1A.

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 3/2/21	4. Sheet 1 of 1
1. Name of Project **California Aqueduct Bridge Replacement**	5. Federal Agency Involved **Caltrans (Under MOU with FHWA)**	
2. Type of Project **Highway**	6. County and State **Kern, California**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 3/2/21	2. Person Completing Form Luis Alvarez
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated 730,711 / Average Farm Size 1,326 acres
5. Major Crop(s) **Grapes, Almond & Pistachios**	6. Farmable Land in Government Jurisdiction Acres: 2,202,302 % 42.1	7. Amount of Farmland As Defined in FPPA Acres: 2,120,267 % 40.5
8. Name Of Land Evaluation System Used **CA Revised Storie Index**	9. Name of Local Site Assessment System **None**	10. Date Land Evaluation Returned by NRCS 3/9/21

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment State Route 166			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	6.15	26.39		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	6.15	26.39		
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	6.15	26.39		
B. Total Acres Statewide And Local Important Farmland	0	0		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0003	0.0012		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	10.48	10.48		
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	88	88		
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use (15)	15	15		
2. Perimeter in Nonurban Use (10)	7	8		
3. Percent Of Corridor Being Farmed (20)	8	14		
4. Protection Provided By State And Local Government (20)	20	20		
5. Size of Present Farm Unit Compared To Average (10)	0	2		
6. Creation Of Nonfarmable Farmland (25)	0	0		
7. Availability Of Farm Support Services (5)	5	5		
8. On-Farm Investments (20)	5	5		
9. Effects Of Conversion On Farm Support Services (25)	0	0		
10. Compatibility With Existing Agricultural Use (10)	0	0		
TOTAL CORRIDOR ASSESSMENT POINTS (160)	60	69	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) (100)	88	88	0	0
Total Corridor Assessment (From Part VI above or a local site assessment) (160)	60	69	0	0
TOTAL POINTS *(Total of above 2 lines)* (260)	148	157	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☑ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

Appendix E State Office of Historic Preservation Letter of Concurrence

The California Aqueduct was determined eligible for the National Register of Historic Places in July 2012 via a consensus determination with the State Historic Preservation Officer. As part of the 2012 evaluation, 17 bridges over the California Aqueduct were determined to be contributing elements.

Caltrans, as part of its cultural resource identification efforts, and in accordance with stipulation VIII.C.4 of the Section 106 Programmatic Agreement, assumed California Aqueduct Bridge Number 50-0323 was also eligible to the National Register of Historic Places, for this project only, as a contributing feature of the California Aqueduct and applied the criteria of adverse effect.

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

July 03, 2012 Reply To: FHWA120615A

Kelly Hobbs, Environmental Branch Chief
Central Region Environmental Division
855 M Street, Suite 200
Fresno, CA 93721

Re: Determinations of Eligibility for the 17 Proposed Seismic Retrofit Projects in Merced, Fresno and Kings Counties

Dear Mr. Hobbs:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the following properties are eligible for the National Register of Historic Places (NRHP) for the following reasons:

- **California Aqueduct** – The California Aqueduct is eligible for the NRHP at the state level of significance under Criterion A as the largest and most significant of the water conveyance systems developed as part of the State Water Project (SWP). The California Aqueduct comprised of 444 miles of the 701 miles of aqueducts, canals and pipelines that make up the SWP. The California Aqueduct is also eligible under Criterion C for its complex design necessary to redistribute water throughout the state of California on such a massive level. The period of significance for the resource is 1960-1974, the years of construction.

  Since the completion of the aqueduct is less than 45 years old Caltrans also evaluated the resource under Criterion Consideration G for properties less than 50 years of age. The California Aqueduct was a planned comprehensive water redistribution system that helped shape the development of much of California following the mid-20th century. The American Society of Civil Engineers lists the California Aqueduct as one of only 10 internationally ranked "Monuments of the Millennium" for its remarkable engineering aspects, as well as for the positive impact it had on regional economic trade and development.

- **Quail Avenue Bridge (45C0125), 30th Avenue Bridge (45C0124), Plymouth Avenue Bridge (45C0123), Avenal Cutoff Bridge (45C0071), Jayne Avenue Bridge (42C0156), Gale Avenue Bridge (42C0425), El Dorado Bridge (42C0371), Mt. Whitney Avenue Bridge (42C0159), Clarkson Avenue Bridge (42C0370), Manning Avenue Bridge (42C0173), Panoche Road Bridge (42C0245), Russell Avenue Bridge (42C0141), Shields Avenue Bridge (42C0140), Nees Avenue Bridge (42C0143), Mervel Avenue Bridge (39C0314), McCabe Road Bridge (39C0250), Butts Road Bridge (39C0252)** – These 17 bridge are eligible for the NRHP as contributors to the California Aqueduct. Under Criterion A the bridges facilitate planned regional transportation and agricultural business in areas along the linear system that bisects much of the Central Valley and other

Mr. Hobbs
July 03, 2012
Page 2 of 2

regions of California. Under Criterion C the bridges are united historically by both plan and physical development to the California Aqueduct and contribute to the common engineering objective of the aqueduct. These bridges are therefore considered to be character defining features of the aqueduct.

Based on review of the submitted documentation, I concur that the California Aqueduct is eligible under Criteria A and C and meets the criterion for exceptional significance. My only question is whether the Aqueduct should be considered eligible at only the State level of significance or if perhaps the National level of significance might be more appropriate?

With regards to the 17 bridges, I concur that they are eligible for the NRHP as contributors to the California Aqueduct.

Please note that my comments on the Finding of Effect for these projects will follow in separate correspondence.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix F Finding of Adverse Effect

A Finding of No Adverse Effect without Standard Conditions, which summarizes Caltrans' effects determination, was prepared in April 2018. On August 28, 2018, the State Historic Preservation Officer formally responded to Caltrans stating that, after review, the State Historic Preservation Officer was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for this project. Caltrans accepted the State Historic Preservation Officer's conclusion and a Finding of Adverse Effects under Section 106 was completed for the project on January 29, 2019.

A Supplemental Finding of Adverse Effect was completed in March 2021 to address adjustments to Alternative 8 and the addition of the South Alignment Alternative to the project. The State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect.

After additional consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration. This led to the completion of a Second Supplemental Finding of Adverse Effect, which was submitted to the State Office of Historic Preservation on August 11, 2022.

Finding of Adverse Effect, January 29, 2019

State of California • Natural Resources Agency — Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION — Lisa Ann L. Mangat, *Director*
OFFICE OF HISTORIC PRESERVATION
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

January 29, 2019

VIA EMAIL

In reply refer to: FHWA_2018_0509_001

Ms. Alexandra Bevk Neeb, Section 106 Coordinator
Cultural Studies Office
Caltrans Division of Environmental Analysis
1120 N Street, PO Box 942873, MS-27
Sacramento, CA 94273-0001

Subject: Finding of Adverse Effect for the California Aqueduct Bridge Replacement Project, Kern County, CA

Dear Ms. Bevk Neeb:

Caltrans is continuing consultation about the subject undertaking in accordance with the January 1, 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans proposes to replace the existing California Aqueduct Bridge No. 50-0323, at PM 17.44 on State Route 166 in Kern County. The project will address superstructure and substructure deficiencies to ensure serviceability and structure integrity. The project will address the settlement of Pier No. 2, nonstandard bridge rails, and seismic deficiencies. Caltrans will construct a new bridge over the existing bridge. The proposed new steel-girder bridge would span the California Aqueduct (Aqueduct) and would be higher than the existing bridge. The existing bridge would then be demolished by removing the bridge deck, and removing the two existing piers in the aqueduct but leaving one foot of the piers at the bottom of the canal.

The Aqueduct was determined eligible for the National Register of Historic Places (NRHP) in 2012 under Criteria A and C. Under Criterion A the Aqueduct is eligible as the largest and most significant of the water conveyance systems developed as part of the State Water Project. Under Criterion C the Aqueduct is eligible for its complex design necessary to redistribute water throughout the state of California on such a massive level. The same concurrence also found 17

Ms. Bevk Neeb FHWA_2018_0509_001
January 29, 2019
Page 2 of 2

associated Aqueduct bridges eligible for the NRHP as contributors to the aqueduct. Bridge No. 50-0323 was not included in this list. Pursuant to Stipulation VIII.C.4 for the PA Caltrans is assuming the eligibility of Bridge No. 50-0323 for the purposes of the project.

On August 28, 2018, the SHPO provided comments to Caltrans objecting to the proposed finding of no adverse effect for the project. As a result Caltrans has reassessed the undertaking and its anticipated effects on historic properties pursuant to Stipulation X. of the PA and 36 CFR 800.5 and has found that the proposed project will have an adverse effect on the Aqueduct. The replacement bridge would constitute a visual intrusion and diminish the historic property's setting. Caltrans will work with the SHPO and other consulting parties to explore possible measures to resolve adverse effects.

Based on my review of the submitted documentation I have no objections to Caltrans' revised finding of adverse effect.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Alicia Perez at (916) 445-7020 with e-mail at alicia.perez@parks.ca.gov .

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Supplemental Finding of Adverse Effect, June 9, 2021

State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
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calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

June 9, 2021

VIA EMAIL In reply refer to: FHWA_2018_0509_001

Mr. David Price
Cultural Studies Office
Division of Environmental Analysis
1120 N Street, PO Box 942873, MS-27
Sacramento, CA 94273-0001

Subject: Finding of Effect for the Proposed California Aqueduct Bridge Replacement Project, Kern County, California

Dear Mr. Price:

Caltrans is continuing consultation regarding the above project in accordance with the January 1, 2014 First Amended Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, the California State Historic Preservation Officer (SHPO), and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA). Caltrans is concurrently complying with Public Resources Code (PRC) 5024 pursuant to Stipulation III of the *Memorandum of Understanding between the California Department of Transportation and the California State Historic Preservation Officer regarding Compliance with Public Resources Code Section 5023 and Governor's Executive Order W-26-92* (PRC 5024 MOU). As part of your documentation, Caltrans submitted a Supplemental Finding of Adverse Effect (FOAE) report for the proposed project.

Caltrans proposes to replace the existing California Aqueduct Bridge Number 50 0323, at Postmile 17.44 on State Route 166 in Kern County. As a result of a Value Analysis study produced for Caltrans in 2020 additional alternatives were provided for consideration. Construction work was also added to a previously documented alternative (alternative 8) as a result of the discovery of utility lines adjacent to SR 166 requiring the modification of the current alternative. As such these changes to the project activities necessitated a supplemental document the potential impacts that the new activities could have on historic properties

Pursuant to Stipulation X.A. of the Section 106 PA and 36 CFR §800.5(a), Caltrans has applied the Criteria of Adverse Effect set forth in 36 CFR §800.5(a)(1) and determined

Mr. Price FHWA_2018_0509_001
June 9, 2021
Page 2 of 2

that the additional project alternatives will also have an Adverse Effect to the California Aqueduct.

Based on review of the submitted documentation, I have no objections to this finding. Please note that when Caltrans submits a Memorandum of Agreement for this undertaking, it should identify a single alternative for the project so that all stakeholders are clear on what the undertaking and its effects are.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov .

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Second Supplemental Finding of Adverse Effect, August 11, 2022

State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

August 11, 2022

VIA EMAIL

In reply refer to:
FHWA_2018_0509_001

Mr. David Price
Cultural Studies Office
Division of Environmental Analysis
1120 N Street, PO Box 942873, MS-27
Sacramento, CA 94273-0001

Subject: Signed Memorandum of Agreement for the California Aqueduct Bridge Rehabilitation Project, Kern County, CA

Dear Mr. Price:

Caltrans is continuing consultation regarding the above project in accordance with the January 1, 2014 First Amended Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, the California State Historic Preservation Officer (SHPO), and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (106 PA). Caltrans is concurrently complying with Public Resources Code (PRC) 5024 pursuant to Stipulation III of the *Memorandum of Understanding between the California Department of Transportation and the California State Historic Preservation Officer regarding Compliance with Public Resources Code Section 5023 and Governor's Executive Order W-26-92* (5024 MOU). As part of your documentation, Caltrans submitted a Second Supplemental Finding of Effect for the proposed project as well as a revised draft Memorandum of Agreement (MOA) for the undertaking.

Caltrans District 6 proposes to seismically retrofit and rehabilitate California Aqueduct Bridge Number 50-0323 on State Route 166 in Kern County. The project is located east of Maricopa, 2.2 miles east of Old River Road and 5 miles west of Interstate 5. Caltrans proposed a Finding of Adverse Effect for the Undertaking March of 2021. In a letter dated June 9, 2021, the SHPO indicated that they did not object to this proposed finding.

Caltrans submitted a draft MOA proposed to resolve the adverse effects of the Undertaking on March 25, 2022. However, as a result of continuing consultation between Caltrans and the Department of Water Resources (DWR), Alternative A1, previously

Mr. Price FHWA_2018_0509_001
August 11, 2022
Page 2 of 2

rejected due to DWR's engineering concerns, was accepted as the Preferred Alternative. These changes to the project necessitated a supplemental finding of effect to document the potential impacts that the new activities could have on historic properties.

Pursuant to Stipulation X.A. of the 106 PA and 36 CFR §800.5(a), Caltrans has applied the Criteria of Adverse Effect set forth in 36 CFR §800.5(a)(1) and found that the Undertaking will adversely affect the California Aqueduct. Caltrans also submitted a draft MOA for SHPO review.

Based on my review of the submitted documentation, I have no objections to Caltrans' finding of adverse effect for this undertaking. I have also attached the signed agreement document for this undertaking.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Appendix G Avoidance, Minimization and/or Mitigation Summary

To ensure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record that follows) would be implemented.

During project design, avoidance, minimization, and/or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction and engineering staff will ensure that the commitments contained in the Environmental Commitments Record are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. Because the following Environmental Commitments Record is a draft, some fields have not been completed; they will be filled out as each of the measures is implemented.

Note: Some measures may apply to more than one resource area. Duplicated or redundant measures have not been included in this Environmental Commitments Record.

Utilities and Emergency Services

The following avoidance and minimization measures would minimize temporary impacts to utilities and emergency services:

- All utility relocation work would be handled by the affected utility companies and in a manner to limit service disruptions to customers.
- A traffic management plan would be developed to inform emergency services and the local population about detour routes and road closures. The traffic management plan may include an advance commuter alert sent out to the media, California Highway Patrol, and other local partners, as well as the placement of notices for the closure on social media.
- Surrounding county roads would remain available for emergency services.

Cultural Resources

To ensure that the history of the bridge is adequately captured before construction, Caltrans would implement mitigation measures to help ensure that the bridge maintains its historical importance through documentation. To do this, Caltrans would complete a Historic American Buildings Survey and a Historic American Engineering Record. The Historic American Buildings

Survey/Historic American Engineering Record documentation combines drawings, history, and photographs to produce a comprehensive, multidisciplinary record of a building or engineering feature. Historic American Buildings Survey/Historic American Engineering Record documentation becomes a part of the collection at the Library of Congress. The Historic American Buildings Survey/Historic American Engineering Record for the bridge will describe and convey the importance of the bridge as well as the role that the bridge plays in the larger aqueduct system.

Final mitigation measures were developed and documented in the subsequent Memorandum of Agreement, which was finalized after the public circulation and review of the draft environmental document. The following additional measures are also proposed:

- Caltrans will produce a California Aqueduct Bridge Identification and Condition Report that will inventory all California highway bridges that cross the California Aqueduct. The Identification and Condition Report will assess the condition of the existing bridges and identify all known alterations. The Identification and Condition Report will make recommendations for bridges that warrant preservation.

  Caltrans will develop the California Aqueduct Bridge Identification and Condition Report in consultation with the Department of Water Resources. Caltrans will submit the draft Identification and Condition Report to the Office of Historic Preservation, the Cultural Studies Office, and all other consulting parties. Consulting parties will have 30 days to provide comment. If Caltrans does not receive a response within 30 calendar days, the submitted documents will be considered as final. Caltrans District 6 will take all comments into account in revising the document and submit a final version to the consulting parties for second review. The consulting parties will have 30 calendar days to review the revised documents. The California Aqueduct Bridge Identification and Condition Report will be completed within two years following the end of construction.

- Develop and install informative displays or kiosks at public locations in close proximity to the California Aqueduct. These informative displays or kiosks will provide a brief history of the California Aqueduct, its associated features such as its bridges, its importance, and its use within the history of the San Joaquin Valley and California. Prior to fabrication of the informative panels, Caltrans will consult with the State Office of Historic Preservation on the content of the informational displays for a 30-day review. The panels will be installed before expiration of the Memorandum of Agreement.

Water Quality and Storm Water Runoff

Temporary construction site best management practices will be followed to avoid and minimize impacts to water quality and storm water runoff.

Before any ground-disturbing activities, the contractor would prepare a Storm Water Pollution Prevention Plan (per the Construction General Permit Order 2009-0009-DWQ) that includes erosion-control measures and construction waste containment measures so that waters of the State are protected during and after project construction.

The Storm Water Pollution Prevention Plan would identify the sources of pollutants that may affect the quality of stormwater, as well as include construction site best management practices to control erosion and sedimentation, and spills of chemical pollutants; provide for construction materials management; and include a schedule of routine inspections and monitoring. All construction site best management practices would follow the latest edition of the Storm Water Quality Handbooks: Construction Site Best Management Practices Manual (Caltrans 2003a) to control and minimize the impacts of construction-related activities, materials, and pollutants on the watershed.

The project would incorporate pollution prevention and design measures consistent with the 2003 Caltrans Storm Water Management Plan (Caltrans 2003b) to meet water quality objectives. This plan has been revised to comply with the requirements of the Caltrans Statewide National Pollutant Discharge Elimination System Permit (Order 2012-0011-DWQ).

Hazardous Waste and Materials

The following avoidance and minimization measures would minimize impacts from hazardous waste and materials:

Asbestos

- If disturbed (cutting, abrading, sanding, grinding, etc.), the sheet packing material would have to be handled in compliance with the California Occupational Safety and Health Act asbestos standard and sent to a landfill.

Lead Paint

- Intact beige/gray graffiti abatement paint represented by samples collected would be classified as California hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate.
- Deteriorated white paint applied to metal conduit would be classified as California hazardous waste based on lead content; the deteriorated lead-

based paint must be removed and disposed of prior to activities that would disturb the barriers.

- If white and yellow painted striping is removed separately from the pavement, or if the paint on the bridge deck is ground separately from the pavement, then the project would require the use of the Caltrans Standard Special Provision for removal of yellow traffic stripe and pavement marking with hazardous waste residue.
- A lead compliance plan is required for this project.

Aerially Deposited Lead

- If encountered, soil with elevated concentrations of lead will be managed under the July 1, 2016 Aerially Deposited Lead Agreement between Caltrans and the California Department of Toxic Substances Control.

Treated Wood Waste

- Wood removed from guardrails will be disposed of at a facility equipped to recycle the debris.

Animal Species

The following avoidance and minimization measures will be incorporated to minimize impacts to migratory birds, the American badger, and the western pond turtle:

Migratory Birds

- Caltrans Standard Special Provision 14-6.03 “Bird Protection” will be included in the construction contract. This provision includes the appropriate exclusionary measures and monitoring that will be required for cliff swallows.

American Badger

- If occupied suitable habitat is observed during pre-construction surveys, avoidance measures, such as environmentally sensitive area fencing, would be implemented where feasible.
- A qualified biological monitor would be present at the construction site during initial ground-disturbing activities. If American badgers are found within the project footprint, Caltrans will coordinate with the California Department of Fish and Wildlife on what additional measures can be implemented.
- Pre-construction surveys would be conducted to avoid potential impacts to this species.

Western Pond Turtle

- Pre-construction surveys would be conducted to avoid potential impacts to this species.

Threatened and Endangered Species

The following avoidance and minimization measures will be incorporated to minimize impacts to the San Joaquin kit fox, the Tipton kangaroo rat, the giant kangaroo rat, the blunt-nosed leopard lizard, and the tricolored blackbird:

San Joaquin Kit Fox

- A Worker Environmental Education Program will be conducted before ground-disturbing activities begin. Persons knowledgeable in San Joaquin kit fox biology and regulatory requirements will present the program to all construction personnel involved in constructing the proposed action. The program will include a description of the San Joaquin kit fox and its habitat needs; a report on the occurrence of the kit fox in the project vicinity; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce effects on the San Joaquin kit fox during project construction and implementation, including information about the ban on rodenticides and pest rodent traps and contact information for a designated biological representative. A fact sheet conveying this information will be prepared for distribution to all those who enter the project site, and it will be posted in the office trailer or other worker meeting place on the project site.
- Project-related vehicles should observe a daytime speed limit of 20 miles per hour and a nighttime speed limit of 10 miles per hour throughout project areas, except on county roads and state and federal highways; this is particularly important at night when kit foxes are most active.
- To minimize the adverse effects of lighting, it will be confined to areas within the construction footprint.
- A litter control program will be instituted on the project site. All food-related trash items, such as wrappers, cans, bottles, and food scraps, will be disposed of in a closed and secured container and removed from the project site at the end of each workday. No deliberate feeding of wildlife will be allowed.
- No firearms will be allowed on the project site (with the exception of federal, state or local law enforcement personnel or security personnel).
- No pets will be allowed on the project site.
- Chemicals, fuels, lubricants, and biocides will be used only in compliance with all local, state, and federal regulations. Users of such compounds will observe label and other restrictions mandated by the U.S. Environmental

Protection Agency, California Department of Food and Agriculture, and state and federal legislation.

- Use of rodenticides and herbicides on the project site during construction will be prohibited.
- Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, etc. will be recontoured if necessary, and revegetated using California endemic plant material from a local source (for example, local ecotype). Loss of soil from runoff or erosion will be prevented with straw bales, straw wattles or other similar means provided they do not entangle or block movement of the San Joaquin kit fox. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated.
- Pre-construction surveys for the San Joaquin kit fox and dens within the project area will be conducted no more than 30 days before the beginning of ground disturbance or construction activities. Surveys will be conducted by qualified biologists with demonstrated experience in identifying the San Joaquin kit fox and its dens.
- Staging will occur in previously disturbed and/or paved areas and, where possible, burrows will be avoided.
- The use of temporary artificial lighting onsite will be limited, except when necessary for construction, or for driver and pedestrian safety. Any artificial lighting used during construction, particularly at night, will be confined to areas within the construction footprint and directed away from surrounding habitat. Caltrans will limit non-target casting of light by installing shielding behind and underneath the light source to confine the illumination further in order to minimize its effects on the species.
- A qualified biologist(s) will be present onsite to monitor for all of the species during initial ground-disturbing activities. The qualified biologist(s) otherwise will be available on-call during all construction periods in the event that listed species are observed either onsite or in the vicinity of the project footprint.

Tipton Kangaroo Rat and Giant Kangaroo Rat

- Additional trapping surveys will be conducted prior to construction following the *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats,* U.S. Fish and Wildlife Service Sacramento Field Office March 2013, to ensure that listed species are not present in the project area.
- Worker Environmental Awareness Training will be required for construction staff who will be working in the action area.

- A qualified monitor will be present during initial ground-disturbing activities.

Blunt-Nosed Leopard Lizard

- A biological monitor would be onsite during initial ground-disturbing activities.
- Requiring low speed limits within the construction site will lessen the probability that blunt-nosed leopard lizards could be run over by vehicles and equipment.

Tricolored Blackbird

- Nesting surveys would be conducted during the season prior to the start of construction to determine if any tricolored blackbirds are nesting in proximity to the project area.
- A qualified biologist would monitor active nests during construction activities.
- A special provision for migratory birds would be included to ensure that no potential nesting migratory birds are affected during construction.
- If nesting tricolored blackbirds are found onsite, an appropriate no-disturbance buffer will be established.

Appendix H Images of Bridge 50-0323

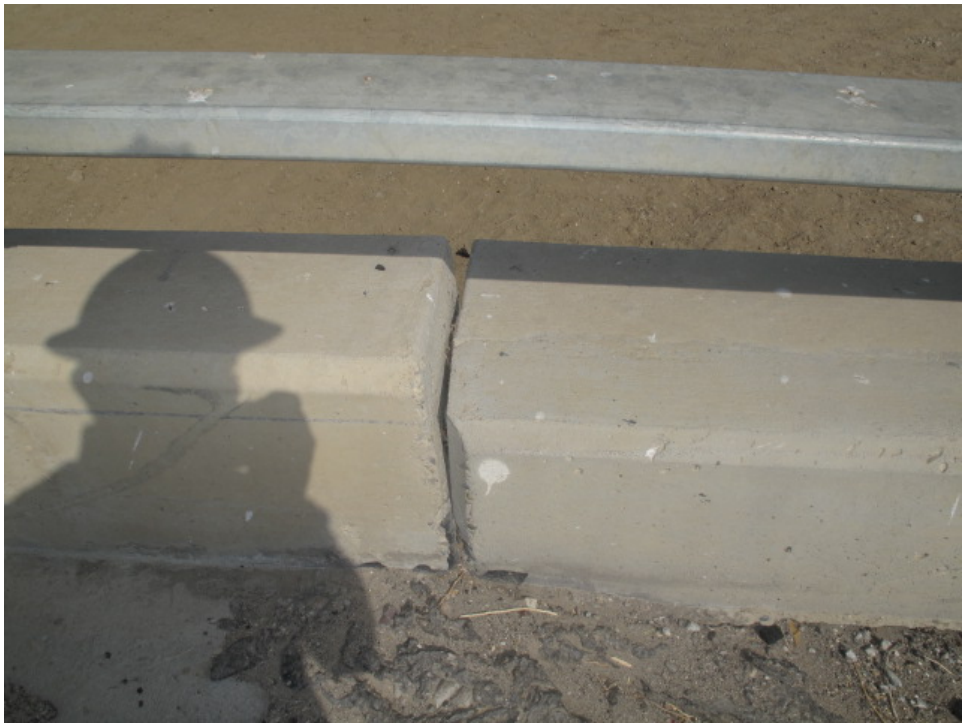
This is a wide shot of the existing bridge.

The bridge deck is sagging and is no longer visibly level in this image.

Asphalt concrete cracking at an abutment can be seen in this image.

Horizontal displacement of the rail at an abutment can be seen in this image.

Asphalt concrete cracking at an abutment can be seen in this image.



Displacement of the rail at an abutment can be seen in this image.

Vertical displacement of the rail at an abutment can be seen in this image.

Appendix I Memorandum of Agreement

This appendix has been added to the document since the draft environmental document was circulated.

A Finding of No Adverse Effect without Standard Conditions, which summarizes Caltrans' effects determination, was prepared in April 2018. On August 28, 2018, the State Historic Preservation Officer formally responded to Caltrans stating that after review of Caltrans' finding determination, the State Historic Preservation Officer was rejecting Caltrans' Finding of No Adverse Effect for Section 106 for this project. Caltrans accepted the State Historic Preservation Officer's conclusion, and a Finding of Adverse Effects under Section 106 was completed for the project on January 29, 2019.

A Supplemental Finding of Adverse Effect was completed in March 2021 to address adjustments to Alternative 8 and the addition of the South Alignment Alternative to the project. The State Historic Preservation Officer formally responded on June 9, 2021 stating no objections to the Supplemental Finding of Adverse Effect. After further consultation with the Department of Water Resources, Alternative 1A was established as the project build alternative, and the Southern Alignment Alternative and Alternative 8 were both eliminated from further consideration. This led to the completion of a Second Supplemental Finding of Adverse Effect, which was submitted to the State Office of Historic Preservation on August 11, 2022.

In response to the Finding of Adverse Effect, a Memorandum of Agreement was prepared and executed on August 11, 2022, and identifies avoidance, minimization, and mitigation measures for the project.

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CALIFORNIA AQUEDUCT BRIDGE REHAB PROJECT
(NO. 50 0323), STATE ROUTE 166, KERN COUNTY, CALIFORNIA

WHEREAS, pursuant to §23 U.S.C. 327 the Federal Highway Administration (FHWA) has assigned and the California Department of Transportation (Caltrans, including all subordinate divisions defined below) has assumed FHWA responsibility for environmental review, consultation and coordination under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 U.S.C. 327,* which became effective on December 23, 2016, and applies to this undertaking; and

WHEREAS, pursuant to the January 2014 First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California (Section 106 PA), Caltrans is deemed to be a federal agency for all highway-aid projects it has assumed, and in that capacity deems to be a federal agency for all highway-aid projects it has assumed, and in that capacity Caltrans has assigned the role of "agency official" to the Caltrans Division of Environmental Analysis (DEA) Chief for the purposes of compliance with 36 CFR §800, the regulation that implements Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. 470f), as amended and is responsible for oversight of District environmental responsibilities. The responsibility for oversight, day-to-day responsibilities and coordination of the Section 106 process are further delegated to the DEA Cultural Studies Office (CSO) Chief; and

WHEREAS, Caltrans proposes to construct the federally funded California Aqueduct Bridge Rehabilitation/Seismic Retrofit Project on State Route (SR) 166 at postmile 17.44 in Kern County (Undertaking) that would seismically retrofit and rehabilitate the SR 166 California Aqueduct Bridge (No. 50 0323) on its existing alignment. A project description is provided in Attachment A; and

WHEREAS, Caltrans has chosen Build Alternative A1 – Seismic Retrofit and Rehabilitation as the preferred alternative for the Undertaking; and

WHEREAS, the Undertaking's Area of Potential Effects (APE) includes the maximum existing proposed right-of-way, easements, improved properties subject to temporary or permanent changes in access (ingress and egress), and areas where visual or audible changes could occur outside the required right-of-way, as depicted in Attachment B; and,

WHEREAS, Seventeen (17) California Aqueduct Bridges were determined eligible in 2012 for listing in the NRHP under Criterion A and C as contributors to the California Aqueduct for "facilitating planned regional transportation and agricultural business in areas along the linear system that bisects much of the Central Valley and other regions of California" and being "united historically by both common plan and physical development to the California Aqueduct and contribute to the common engineering objective of the aqueduct."

WHEREAS, The California Aqueduct Bridge No. 50 0323 is assumed eligible for the purposes of this project only, pursuant to Stipulation VIII.C.4 of the 2014 Programmatic Agreement under the same context, criteria and period of significance as the 17 bridges previously determined eligible as all 176 California Aqueduct bridges were constructed as part of the larger California Aqueduct and designed to facilitate the planned regional transportation and agricultural business along the Aqueduct.

WHEREAS, Caltrans has applied the criteria of adverse effect and has determined that the Undertaking will have an adverse effect on the California Aqueduct, via the retrofit and rehabilitation of the CA Aqueduct Bridge No. 50 0323, a property determined eligible for inclusion in the National Register of Historic Places (NRHP) under Criterion A and C, as the largest and most significant of the water conveyance systems developed as part of the State Water Project (SWP) and its complex design necessary to redistribute water throughout the state of California on such a massive level.

WHEREAS, Caltrans has consulted with the California State Historic Preservation Officer (SHPO) pursuant to Stipulation X.C. and XI of Section 106 PA, and where the Section 106 PA so directs, in accordance with 36 CFR §800, the regulation that implements Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended regarding the Undertaking's effect on historic properties, and the SHPO has concurred with Caltrans adverse effect finding, and has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding pursuant to 36 CFR §800.6(a)(1), and will file a copy of this MOA with the ACHP in accordance with Stipulation X.C.4 of the Section 106 PA; and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, has determined that the Undertaking's adverse effects to the California Aqueduct cannot be avoided, and has furthered determined that the execution and implementation of this MOA will take into account the adverse effects of the Undertaking; and

WHEREAS, Caltrans has consulted with representatives from the Kern Valley Indian Council, Chumash Council of Bakersfield, San Fernando Band of Mission Indians, Tachi Yokut Tribe-Santa Rosa Indian Community, Tejon Indian Tribe, Tubatulabals of Kern Valley, and the Wuksache Indian Tribe-Eshom Valley Band regarding the effects of the Undertaking and none of the groups or individuals requested to be a consulting party; Caltrans will continue to consult with them and will afford them, should they so desire, further opportunity to more directly and actively participate in the implementation of the Undertaking itself and this MOA; and

WHEREAS, Caltrans District 06 has a responsibility to fulfill the terms of this MOA and are participating as invited signatories; and

WHEREAS, Caltrans has consulted with the California Department of Water Resources (DWR), regarding the Undertaking and Caltrans has invited them to be signatories in this MOA; and

NOW, THEREFORE, Caltrans and the SHPO agree that if the Undertaking proceeds, the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following stipulations are implemented:

I. AREA OF POTENTIAL EFFECTS

A. The Undertaking's Area of Potential Effects (APE) was designed in accordance with Stipulation VIII.A of the Section 106 PA and is depicted in Attachment B of this MOA. The APE includes the maximum existing or proposed right-of-way for all alternatives under consideration, easements (temporary and permanent), all improved properties subject to temporary or permanent changes in access (ingress and egress), and areas where visual or audible changes could occur outside the require right-of-way.

B. If Caltrans determined that additional APE revisions are necessary, Caltrans shall inform the parties of the MOA of the revisions as soon as is feasible and consult on subsequent actions needed. This consultation shall take no more than fifteen (15) calendar days to reach agreement on the proposed revisions. If Caltrans, the SHPO and other appropriate signatories cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with Stipulation IV.C below. If all parties reach mutual agreement on the proposed revisions, then Caltrans will submit a new APE map reflecting the revisions consistent with the requirements of Stipulation VIII.A and Attachment 3 of the Section 106 PA no later than thirty (30) calendar days following such agreement. Any additional required identification and evaluation efforts necessitated due to changes to the APE will be undertaken consistent with the requirements of Stipulation VIII of the Section 106 PA and in accordance with 36 CFR §800.4(a)(2-4) and 800.4(b). Amendment of the APE will not require an amendment to the MOA unless the change alters the terms of this agreement. The revised APE and supporting documentation shall be incorporated into Attachment B to this MOA.

II. TREATMENT OF HISTORIC PROPERTIES

A. Historic American Engineering Record (HAER)

1. Prior to the start of construction, Caltrans shall contact the regional Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) coordinator at the National Park Service Interior Regions 8, 9, 10, and 12 Regional Office (NPS) to request that NPS stipulate the level of and procedures for completing the documentation of California Aqueduct Bridge No 50 0323. Within ten (10) days of receiving the NPS stipulation letter, Caltrans shall send a copy of the letter to all consulting parties for their information. If no response is received within 90 calendar days of the submittal to NPS, Caltrans shall confer with the SHPO on how to move forward with the HAER documentation.

2. Caltrans will ensure that all recordation documentation activities are performed or directly supervised by architects, historians, photographers, and/or other professionals meeting the qualification standards in the Secretary of Interior's Professional Qualification Standards (36 CFR 61, Appendix A).

3. Upon receipt of the NPS written acceptance letter, Caltrans Professionally Qualified Staff (PQS) in the appropriate discipline, will provide digital files of the documentation to the Caltrans Library and History Center, Sacramento; the California Office of Historic Preservation; and the Caltrans Cultural Studies Office. Additional copies will be offered to the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield; and the Beale Memorial Library Local History Room, Bakersfield, California.

4. Caltrans shall notify SHPO that the documentation is complete and all copies distributed, as outlined in section II.A 3, and include the completion of the documentation in the annual report.

B. INTERPRETATION.

Caltrans District 6 shall install informative displays at a public location in close proximity to the California Aqueduct in the unincorporated community of Kettleman City. Potential locations for these informative displays have been identified in Attachment C. These informative displays will provide a brief history of the California Aqueduct, its associated features such as its bridges, the importance of the Aqueduct, and use within the history of the San Joaquin Valley and California.

1. Prior to fabrication of the informative panels, Caltrans will consult with SHPO on the content of the informational displays for a thirty (30) day review.

2. The panels will be installed before expiration of the MOA.

C. CALIFORNIA AQUEDUCT BRIDGE IDENTIFICATION AND CONDITION REPORT.

Caltrans District 6 will produce a *California Aqueduct Bridge Identification and Condition Report that will inventory all California Highway bridges that cross the California Aqueduct. The Identification and Condition Report will assess condition, historical integrity, and identify all known alterations. The report will make recommendations for bridges that warrant preservation. The report will also make recommendations for future management of the resource.*

1. District 6 will submit the draft *California Aqueduct Bridge Identification and Condition Report* to the SHPO, CSO, and DWR. Consulting parties will have 30 days to provide comment. If District 6 does not receive a response within 30 calendar days, the submitted documents will be considered as final.

2. District 6 will take all comments into account in revising the document and submit a final version to the consulting parties for second review. The consulting parties will have 30 calendar days to review the revised documents.

3. *The California Aqueduct Bridge Identification and Condition Report will be completed within two years following the end of construction.*

III. DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines after construction of the Undertaking has commenced, that either the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with Stipulation XV.B of the Section 106 PA. Caltrans at its discretion may hereunder and pursuant to 36 CFR § 800.13 (c) assume any discovered property to be eligible for inclusion to the National Register.

IV. ADMINISTRATIVE PROVISIONS

A. STANDARDS

1. **Definitions**. The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.

2. Parties to this agreement are defined as follows:

   i. Signatory parties have the sole authority to execute, amend, or terminate the MOA.

   ii. Invited signatories have the authority to amend or terminate the MOA.

iii. Concurring parties signing the MOA do so to acknowledge their agreement or concurrence with the MOA but have no legal authority under the MOA to terminate or amend the MOA. Concurring with the terms of the MOA does not constitute their agreement with the Undertaking.

3. Professional Qualifications. Caltrans will ensure that only individuals meeting the Secretary of the Interior's Professional Qualification Standards for Archeology and Historic Preservation (48 FR 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations II, III, IV, and V in this MOA. However, nothing in this stipulation may be interpreted to preclude Caltrans from using the properly supervised services of persons who do not meet the Secretary of the Interior's Professional Qualification Standards.

4. Documentation Standards. Written documentation of activities prescribed by Stipulations II, III, IV, and V of this MOA shall conform to the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 Federal Register 44716–44740), as well as to applicable standards and guidelines established by the SHPO.

5. Curation and Curation Standards. Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code, the materials and records resulting from the activities prescribed by this MOA are curated in accordance with the California Office of Historic Preservation's "Guidance for the Curation of Archaeological Collections" (i.e., 1993 State Curation Guidelines).

B. RESOLVING OBJECTIONS

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this MOA, Caltrans shall immediately notify the other MOA parties of the objection, request their comments on the objection within 15 days following receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other MOA parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection, with the expectation that the ACHP will, within 30 days after receipt of such documentation:

   i. Advise Caltrans that the ACHP concurs in Caltrans' proposed response to objection, whereupon Caltrans will respond to the objection accordingly; or

   ii. Provide Caltrans with recommendations, which Caltrans shall take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or

   iii. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7(c) and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c) (4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

4. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may proceed to implement its proposed response. The objection shall thereby be resolved.

5. Caltrans shall take into account any of the ACHP's recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans' responsibility to carry out all actions under this MOA that are not the subjects of the objection shall remain unchanged.

6. At any time during implementation of the measures stipulated in this MOA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this MOA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment in writing on the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within 15 days following closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans' decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the action

subject to dispute hereunder to proceed in accordance with the terms of that decision.

7. Caltrans shall provide all parties to this MOA, and the ACHP, if the ACHP has commented, and any parties that have objected pursuant to section B.3 and B.4 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

C. AMENDMENTS

1. Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult for no more than 30 days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation IV.E below.

2. Any amendments to Attachments to this MOA shall be amended through consultation by amending the MOA Proper following the process outlined in Stipulation IV.C.1.

D. ANNUAL REPORTING

1. District 6 shall prepare an Annual Report documenting actions carried out pursuant to this MOA. The reporting period shall commence one year from the date of execution. The Annual Report shall be distributed to all consulting parties to this MOA.

2. The Annual Report shall address the following: any scheduling changes proposed, status of treatment and mitigation activities, ongoing and completed public programming, any uses that are affecting or may affect the ability of the federal lead agency to continue to meet the terms of this MOA, any disputes and objections received, and how they were resolved, and any additional parties who have become signatories or concurring parties to this MOA in the past year.

3. District 6 shall coordinate a meeting of the signatories and consulting parties to this MOA, to be scheduled within ninety (90) calendar days of distribution of the Annual Report, or another mutually agreed upon date, to discuss activities carried out pursuant to this MOA during the preceding year and activities

scheduled for the upcoming year. This meeting, should it be deemed unnecessary, may be canceled by mutual consent of the signatory parties.

E. TERMINATION

1. If this MOA is not amended as provided for in Stipulation IV.C, or if either signatory proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).

2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.

3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other MOA parties in writing. Termination hereunder shall render this MOA without further force or effect.

4. If this MOA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall comply with the requirements of the Section 106 PA, or request the comments of the ACHP pursuant to 36 CFR § 800.3–800.6.

F. DURATION OF THE MOA

The duration of this MOA shall be no more than five (5) years following the date of execution by the SHPO and Caltrans, or upon completion of the Undertaking, whichever comes first. If the terms are not satisfactorily fulfilled at that time, Caltrans shall consult with the signatories and concurring parties to extend it or to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment of the MOA, or termination. In the event of termination, Caltrans will comply with Stipulations III through XI of the Section 106 PA if it determines that the Undertaking will proceed notwithstanding termination of this PA

G. EFFECTIVE DATE

This MOA will take effect on the date that it has been executed by Caltrans DEA and the SHPO.

EXECUTION of this MOA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR § 800.6(b)(l)(iv), and subsequent implementation of

its terms, shall evidence, pursuant to 36 CFR § 800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

CALIFORNIA AQUEDUCT BRIDGE REPLACEMENT PROJECT
Kern County, State Route 166
Project EA: 06-0S050

10

REGARDING THE CALIFORNIA AQUEDUCT BRIDGE REHAB PROJECT
STATE ROUTE 166, KERN COUNTY, CALIFORNIA

SIGNATORY PARTY

California Department of Transportation, Division of Environmental Analysis

By Shaila Chowdhury for 08/11/22
Ramon L. Hopkins, Date
Acting Division Chief

CALIFORNIA AQUEDUCT BRIDGE REPLACEMENT PROJECT
Kern County, State Route 166
Project EA: 06-0S050

11

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CALIFORNIA AQUEDUCT BRIDGE REHAB PROJECT
STATE ROUTE 166, KERN COUNTY, CALIFORNIA

SIGNATORY PARTY

California Office of Historic Preservation

By_____ 08/11/2022
Julianne Polanco, Date
State Historic Preservation Officer

CALIFORNIA AQUEDUCT BRIDGE REPLACEMENT PROJECT
Kern County, State Route 166
Project EA: 06-0S050

12

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CALIFORNIA AQUEDUCT BRIDGE REHAB PROJECT
STATE ROUTE 166, KERN COUNTY, CALIFORNIA

INVITED SIGNATORIES

California Department of Transportation, District 6

By_____ _____

Diana Gomez, Date
District Director

California Department of Water Resources

By_____ _____

Karla Nameth, Date
Director

CALIFORNIA AQUEDUCT BRIDGE REPLACEMENT PROJECT
Kern County, State Route 166
Project EA: 06-0S050

13

List of Technical Studies

- Water Quality Assessment Report, May 2022
- Preliminary Location Hydraulic/Floodplain Study, April 2018
- Revised Natural Environment Study, July 2022
- Historical Property Survey Report, March 2018
  - Historic Resource Evaluation Report
  - Historic Architectural Survey Report
  - Archaeological Survey Report
- Second Supplemental Historical Property Survey Report, May 2022
  - Supplemental Archaeological Survey Report
- Section 106 Compliance Memorandum, April 2020
- Second Supplemental Finding of Adverse Effect Report, May 2022
- Revised Hazardous Waste Initial Site Assessment, May 2022
- Asbestos and Lead-Containing Paint Survey Report, January 2018
- Aerially Deposited Lead Site Investigation Report, February 2018
- Scenic Resource Evaluation/Visual Assessment, April 2015
- Updated Paleontological Investigation Report, May 2022
- Updated Air Quality Memorandum, June 2022
- Noise Compliance Study, June 2022